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# Tracking and Sorting in the French Educational System

*Estelle Herbaut<sup>1a</sup>, Carlo Barone<sup>a</sup>, Mathieu Ichou<sup>b</sup> & Louis-André Vallet<sup>a</sup>*

## Abstract

This paper provides an overview of tracking policies in secondary education in France. Drawing on two large datasets on educational trajectories and labour-market outcomes, it identifies patterns of social inequalities associated with track allocation in secondary education. It assesses the long-term consequences of track assignment and its mediating role in the association between social origin and occupational outcomes. Results confirm the large association between social origin and track allocation on the one hand, and between track attainment and higher education and labour-market outcomes at occupational maturity on the other hand. We also find that track attainment accounts for a large share of the association between social origin, measured either by parental education or by social class, and outcomes at occupational maturity. These results highlight the importance of tracking policies for social stratification in the French context.

**Keywords:** Tracking policies; social inequalities; educational attainment; labour-market outcomes.

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## Introduction

The way students are sorted by ability or curricular specialization during their educational career is a central dimension of the organization of any educational system. Since track allocation can have important formal and informal consequences on later educational opportunities, it is crucial to understand the effect of track placement on later educational outcomes, but also on longer-term outcomes, such as occupational ones and how track placement may contribute to social stratification.

To address these questions, this report first describes the structure of the French educational system and the main forms of formal and informal tracking in secondary education. We then assess the association between social origin and track assignment using a rich longitudinal dataset on secondary school students. We further estimate the association between track attainment and long-term outcomes, both in higher education and in the labour-market, focusing on a cohort of individuals born between 1970 and 1979 (aged 35 to 45 years old at the time of the survey). Finally, we estimate to what extent track attainment in secondary education accounts for the association between social origin and outcomes at occupational maturity.

## 1. Basic structure of the French educational system

### General Characteristics

The French education system is centralized and the majority of the regulations regarding its organisation, funding, curriculum, diploma, etc. are set at the national level. Despite being optional, pre-primary education (for children aged 3 to 6-year-old) is nearly universal: In 2017, 97.5% of 3-year-olds were enrolled in pre-primary education and 100% of 4- and 5-year-olds (DEPP - Ministère de l'Éducation, 2018). Compulsory instruction starts at age 6 and ends at age 16.

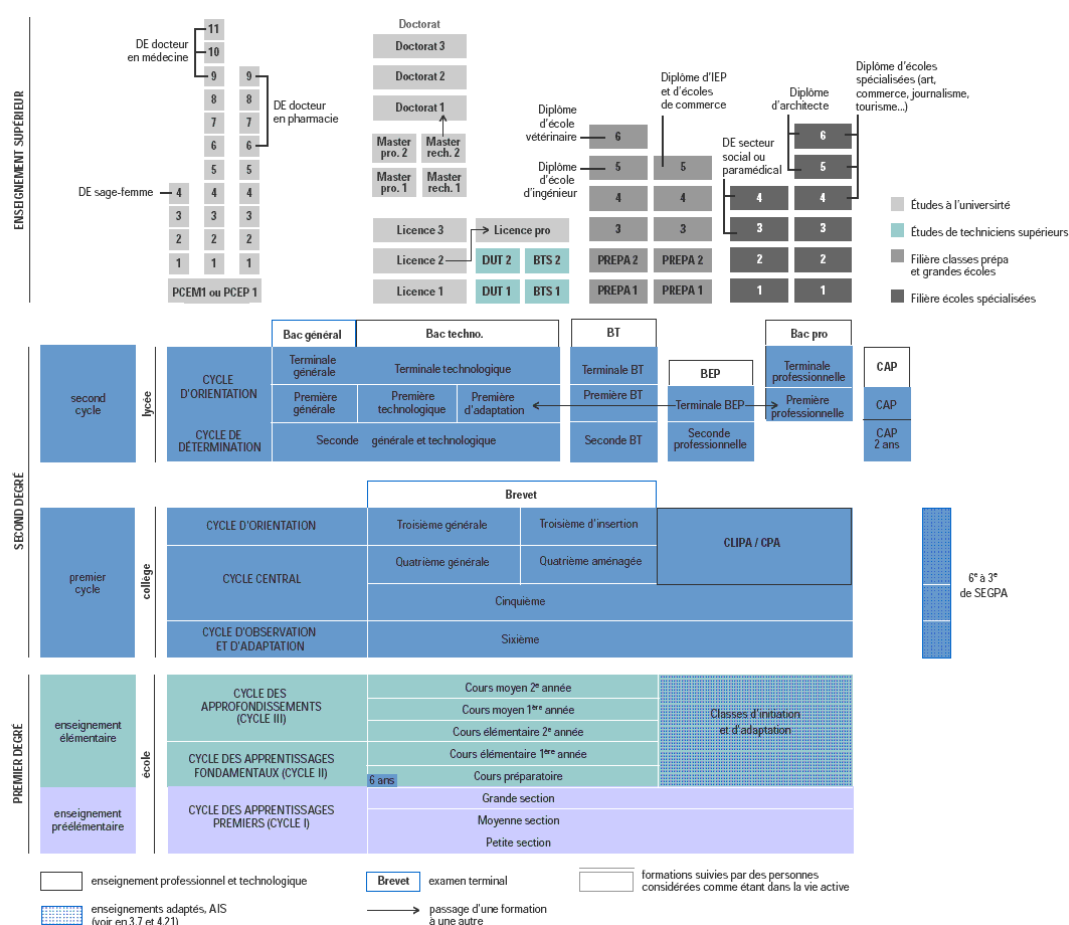
Primary education lasts five years and, theoretically, students enter secondary education at age 11 to attend four years of lower secondary education which are common to all students. The first official tracking point occurs at the entrance of high school (theoretical age 15), where students go either to an academic & technological high school or to a vocational programme. Currently, students can choose between a short vocational training, the “CAP” which lasts two years and can also be obtained through apprenticeship, and a vocational 10<sup>th</sup> grade which leads to the vocational high school degree (*baccalauréat professionnel*) in three years. The vocational training “CAP” and the vocational high school diploma are both offered in the same vocational high school institutions (“*lycées professionnels*”). Prior to 2009 (see reform description below), students going to a vocational programme were choosing between the short vocational training “CAP”, and a more advanced short vocational training “BEP”, which also lasted two years but allowed to continue studying two extra years to take the vocational high school degree.

At the end of 10<sup>th</sup> grade, students in academic & technological high school further choose between an academic or a technological track and the specific streams within each track. High

school ends with the national diploma “*baccalauréat*” (academic, technological or vocational), which grants access to higher education.

In 2017, 79% of a birth cohort obtained a high school degree: 41% passed an academic high school degree, 16% a technological one and 22% a vocational one. Before the introduction of the vocational high school degree in 1985, the proportion of high school graduates was less than 30%, had doubled by 1995, and raised again after the reform of the vocational high school track in 2009 (see below) (Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation-SIES, 2018).

**Figure 1:** French educational system (prior to the 2009 reform of the vocational track)



Source: MEN-MESR (2007)

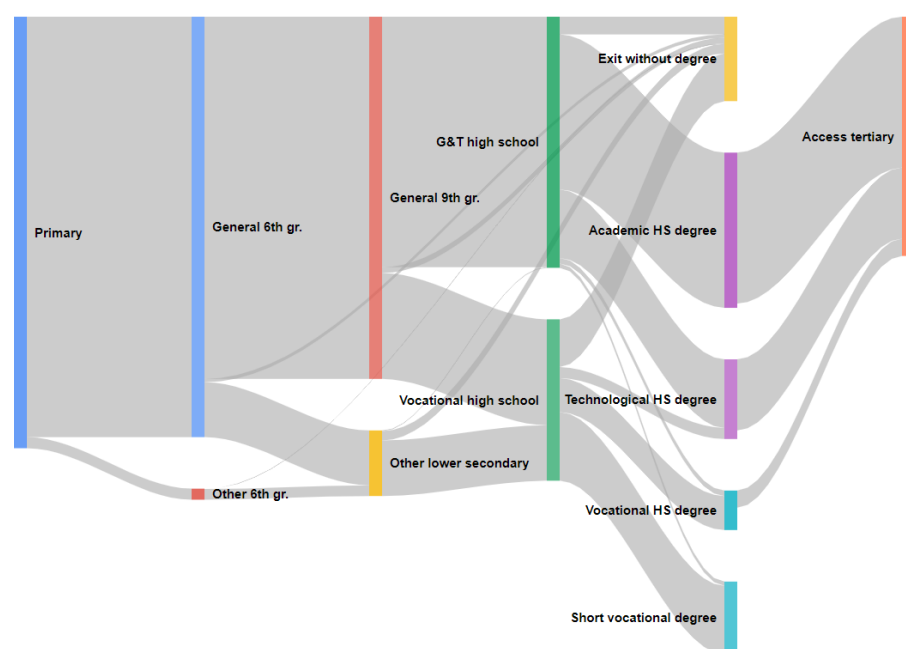
Higher education is broadly organized around three types of programmes and institutions. First, short vocational or professional programmes are offered in high school or university, upon admission based on high school grades, and usually last two years. Second, bachelor’s programmes are offered in universities and used to be accessible for any high school graduate, but access conditions have been reformed in 2018 and now include some requirements set at the national level for each field of study and a selection process carried by universities. Finally, “*Grandes écoles*” (Elite institutions) offer prestigious programmes for students selected through a competitive selection process immediately after high school, or after two years of a preparatory programme (“*CPGE*”) usually offered in high school. In 2015, almost 45% of 25-34 year-olds had graduated from tertiary education (Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation-SIES, 2018).

Figure 2 provides a simplified illustration of students' trajectories in secondary education (birth cohort ~1984). In 9<sup>th</sup> grade, 84% of students were enrolled in a general track and among these students, 69% went to an academic and technological high school and 29% to a vocational track. Almost all students enrolled in a non-academic track in 9<sup>th</sup> grade went to a vocational track (85%) or left the educational system without any degree (14%).

Most students (62%) entering an academic and technological 10<sup>th</sup> grade obtained an academic high school degree and 27% obtained a technical high school degree. In contrast, among students entering a vocational track only 21% obtained a vocational high school degree, 42% left after graduating from a short vocational training degree and 30% left without any degree.

Transition rates to higher education are really high for graduates of academic and technological high school degrees (89% and 97% respectively) and reach 43% for graduates of vocational high school degrees. Overall, a bit more than half (55.4%) of all students entering lower secondary education accessed higher education.

**Figure 2:** Simplified educational trajectories of students entering lower secondary in 1995 (birth cohort ~1984)



Source: Own illustration and calculation based on panel des élèves 1995.

### *Main reforms*

- **1959:** Compulsory school until 16-year-old (instead of 14)
- **1968:** Creation of the technological high school degree

In 1968, the high school degree is reformed to create several streams within the academic track and a new technological track and degree: the “*baccalauréat technologique*”. The technological track associates a training in both academic subjects and more applied

specialities. It is meant to lead to 2-year vocational programmes in higher education which were created shortly before (the “BTS” created in 1962 and the “IUT” created in 1966).

- **1975: Unification of lower secondary education (“Loi Haby”)**

Lower secondary education (grade 6<sup>th</sup> to 9<sup>th</sup>) used to be provided in two different tracks and types of institutions: academic secondary schools “lycées” which provided long academic education ending with the high school degree (“baccalauréat”) while post-primary schools (“cours complémentaire” and “collège d’enseignement general-CEG”) led to the labour market or vocational training. In the 1960s, these two tracks started to be slowly re-unified in one type of institution (“collège d’enseignement secondaire - CES”) and since 1975, lower secondary education has been officially organized in a single type of institution and a common curriculum. In practice though, some pre-vocational tracks still existed until recently.

- **1985: Creation of the vocational high school degree**

Until 1985, only two vocational degrees existed and both prepared for direct entrance into the labour market: the “CAP” and the more advanced “BEP” (created in 1967). Since 1977, both programmes have been offered in vocational high schools. In 1985, the vocational high school degree “baccalauréat professionnel” was created to train highly-qualified workers after the “BEP”. Graduates from a vocational high school degree are eligible to higher education.

- **2009: Reform of the vocational track in high school**

Until 2009, the vocational training after lower secondary school included two types of programmes. The “CAP” and the “BEP” which both lasted two years and ended with a specialized vocational degree meant to allow immediate entrance in the labour market. Only the “BEP” could lead to the vocational high school degree in two additional years (“baccalauréat professionnel”, created in 1985). Thus, the vocational high school degree used to require 4 years of study (2+2) after the end of lower secondary (compared to 3 years for the other tracks) and had two key transitions points (the choice between “CAP” and “BEP” at the end of 9<sup>th</sup> grade and the decision to continue or not after the “BEP”). Since 2009, the vocational high school track has been organised in 3 years, like other upper secondary tracks, and the additional educational transition has been abolished. At the end of 9<sup>th</sup> grade, students go either to a 2-year “CAP” meant for direct entrance in the labour market or to a 3-year vocational high school track leading to the “baccalauréat professionnel” (where the “BEP” is only granted as an intermediary degree).

## 2. Differentiation at different educational levels

### 2.1 Lower secondary education

#### 2.1.1 Between school tracking

##### *Formal parallel tracking*

Since 1975, there is officially no tracking in lower secondary education. In practice, specific streams remained for low-performing students, offering pre-vocational training in 8<sup>th</sup> and 9<sup>th</sup> grades (e.g.: “classes aménagées, technologiques, ou d’insertion”). These streams started to be reduced from 1999 but the phase-out period was achieved in 2011 only. Among students who

entered lower secondary school in 1995, around 16% of students were enrolled for at least a year in one of these non-academic streams in lower secondary education (own calculations). One stream “*SEGPA*” still exists, from grade 6<sup>th</sup> to 9<sup>th</sup>, and is meant to provide personalized education for pupils with major learning difficulties (special education). Among students who entered lower secondary school in 2007, around 3% attended the “*SEGPA*” stream at one point (Caille, 2014).

#### *Public vs. private*

The private school sector is relatively large in France and is mainly funded by the state (95% of private schools in France are government-dependent i.e. follow the national curriculum and receive public funding). Around 14% of pupils in primary education were enrolled in a private school in 2017. For secondary education, this proportion reaches 21% (DEPP - Ministère de l'Éducation, 2018). In Paris, 30% of students entering lower secondary education are enrolled in a private school. Because upper class families are much more likely to choose a private school, private school enrolment contributes to almost half of the level of social segregation observed in lower secondary schools in this city (while urban segregation explains the other half) (Boutchenik, Givord, & Monso, 2018).

#### *Centre vs. periphery*

The distinction between high- and low-quality schools largely overlaps with urban segregation. The state identifies primary and lower secondary schools in disadvantaged neighbourhoods (“*REP*” label, previously “*ZEP*”), which are overwhelmingly located in poor urban suburbs. “*REP*” schools receive additional funding but still have, on average, lower educational outcomes than regular ones. Some families in the catchment area of “*REP*” schools thus avoid them by choosing a private school or rare curricular options which are only offered in other schools. These strategies to avoid the assigned local school are mainly used by middle- or upper-class families and further contribute to social segregation between schools (Van Zanten, 2009). On average, in Paris, 12% of lower secondary students are enrolled in a public school different from the local one where they were initially assigned (Boutchenik et al., 2018) but this figure only captures parents’ requests that are officially validated.

### *2.1.2 Within-school tracking*

#### *Ability grouping*

Despite being legally forbidden, ability grouping remains a common practise, especially in secondary education. A recent study estimated that half of lower secondary schools practise ability grouping. The role of elective subjects (see below) is important but only explains a part of the observed within-school ability grouping (Ly & Riegert, 2015). School heads are responsible for grouping students into classes but there is no declarative data on how (or why) ability grouping is implemented since it is not legal.

#### *Electives*

The choice of options plays an important role in both between-school and within-school differentiation during secondary education. As mentioned earlier, choosing a rare language option can be a way for parents to avoid the local school and have access to a more prestigious one. In addition, elective subjects contribute to ability grouping within schools. Most notably, the choice of German as a first foreign language, of Latin (an option from grade 7<sup>th</sup>), of a “bilingual stream” from grade 6<sup>th</sup>, are typically chosen by upper-class and good-performing students. In 2016, a reform removed the Latin option and the “bilingual stream” with the aim

to reduce ability grouping in lower secondary schools but faced major resistance and these options were reintroduced one year later.

## 2.2 Upper secondary education

### 2.2.1 *Between school tracking*

#### *Formal parallel tracking*

Officially, the first tracking point occurs in 10<sup>th</sup> grade (first year of high school, theoretical age 15). Students go either to an academic & technological high school or to a vocational one. But a number of high schools offer all tracks (“lycée polyvalent”). In 2017, this type of high schools accounted for a third of all public high schools and this proportion has been increasing regularly since 2000 (DEPP - Ministère de l'Éducation, 2018).

After an “academic & technological” 10<sup>th</sup> grade, students either go to the academic track or to the technological one (and in a specific speciality/stream, as described below). Many high schools do not offer all the possible streams and some only provide the academic track.

#### *Public vs. private*

See lower secondary section above.

#### *Academic vs. vocational*

The three formal tracks in high school: academic, technological and vocational correspond to three different foci of the curriculum. The academic track is meant to prepare students for further academic studies in higher education. The technological track offers a mixed curriculum in terms of academic and applied subjects and mainly lead students to short vocational studies in higher education. In contrast the vocational track mainly leads to a direct entry into the labour market (Ichou & Vallet, 2011).

#### *Elite/standard institutions*

Every year, the ministry of education publishes indicators of performance for high schools, which are used to produce rankings. The most prestigious high schools are often located in Paris, and to a lesser extent, in other large cities. Usually the best high schools also offer the most prestigious preparatory programmes for “Grandes écoles” (CPGE), after high school graduation.

#### *Centre vs. periphery*

See lower secondary section above.

### 2.2.2 *Within-school tracking*

#### *Ability grouping*

See lower secondary section above.

#### *Electives*

See lower secondary section above.

#### *Streams within high school tracks*



In high school, each track (academic, technological and vocational) is divided into separate streams. In the academic track, there are three streams: scientific, humanities and economic and social sciences. The scientific one is considered the most prestigious stream. The technological track now has eight different streams while the vocational track has more than 100 of different specialities.

#### *Rigidity of tracking*

Although legally possible, it is uncommon to change tracks or even stream of study within one track. Families can ask for a change of track, but the request needs to be validated by educational authorities. Upward mobility towards the academic track is especially marginal while upward mobility from the vocational to the technological track is slightly more common (Farges et al., 2016). The reform of the vocational track in 2009 also aims to further facilitate the possibility to enter a technological track after one or two years in vocational high school. School heads of technological high schools have the possibility to organize bridge programmes for students coming from vocational school (“*première d’adaptation ou stages passerelles*”). Similarly, it is now officially possible to go to a vocational high school track after graduating from a short vocational degree “CAP” which used to lead only to the labour market.

### 3. Social origin and track placement

We use data from the survey “*Formation et Qualification Professionnelle 2014-2015*” (FQP) for the following analyses. The FQP surveys have been carried out since 1964, every 6 to 12 years, on a representative sample of the population in metropolitan France. It includes detailed information on social origin, educational attainment, first and current occupation. In the latest wave (2014-2015), which we use here, income information at the time of the survey is retrieved from administrative tax register. We restricted the sample to individuals born between 1970 and 1979 (aged 35 to 45 years old at the time of the survey) and who attended primary and secondary education in France, amounting to around 5 700 individuals with complete information on social origin, educational attainment and occupation.

#### **3.1 Track of final secondary attainment**

Tables 1a and 1b show the association between parental education (1a) and social class (1b) and the highest degree obtained in secondary education for individuals born between 1970 and 1979. Individuals with parents with no more than lower secondary education are 16 p.p. more likely to leave without any degree, 24 p.p. more likely to graduate only from a vocational qualification (CAP/BEP) and 50 p.p. less likely to graduate from the academic *baccalauréat*, compared to those with at least one tertiary-educated parent. Similarly, individuals whose parents are in the working class (skilled or unskilled) are 25 p.p. more likely to leave without any degree and 44 p.p. less likely to graduate from the academic *baccalauréat* compared to individuals from the service class.

**Table 1a.** Association between parental education and track of final secondary education attainment, 1970-79 birth cohort (Average marginal effects from multinomial logit model)

|  | Lower secondary or less | Vocational (CAP/BEP) | Vocational baccalaureat | Technical baccalaureat | Academic baccalaureat |
|--|-------------------------|----------------------|-------------------------|------------------------|-----------------------|
| <b>Parental education</b>                    |                         |                      |                         |                        |                       |
| Higher education degree (reference category) |                         |                      |                         |                        |                       |
| High school degree                           | 0.02** (0.01)           | 0.09*** (0.02)       | 0.06*** (0.02)          | 0.06*** (0.02)         | -0.23*** (0.02)       |
| Vocational (CAP/BEP)                         | 0.05*** (0.01)          | 0.22*** (0.02)       | 0.10*** (0.01)          | 0.07*** (0.02)         | -0.44*** (0.02)       |
| Lower secondary or less                      | 0.16*** (0.01)          | 0.24*** (0.01)       | 0.08*** (0.01)          | 0.02* (0.01)           | -0.50*** (0.02)       |
| Observations                                 | 5,199                   | 5,199                | 5,199                   | 5,199                  | 5,199                 |
| Pseudo-R2                                    | 0.0628                  |                      |                         |                        |                       |

Source: FQP 2015

**Table 1b.** Association between parental social class and track of final secondary education attainment, 1970-79 birth cohort (Average marginal effects from multinomial logit model)

|                              | Lower secondary or less | Vocational (CAP/BEP) | Vocational baccalaureat | Technical baccalaureat | Academic baccalaureat |
|------------------------------|-------------------------|----------------------|-------------------------|------------------------|-----------------------|
| <b>Parental social class</b> |                         |                      |                         |                        |                       |
| I+II (reference)             |                         |                      |                         |                        |                       |
| IIIab                        | 0.08*** (0.01)          | 0.18*** (0.01)       | 0.02** (0.01)           | 0.02 (0.01)            | -0.30*** (0.02)       |
| IVab                         | 0.11*** (0.02)          | 0.17*** (0.02)       | -0.00 (0.02)            | -0.02 (0.02)           | -0.25*** (0.03)       |
| IVc                          | 0.06*** (0.02)          | 0.15*** (0.03)       | 0.12*** (0.03)          | 0.02 (0.03)            | -0.36*** (0.03)       |
| V+VI                         | 0.12*** (0.01)          | 0.24*** (0.02)       | 0.02 (0.01)             | 0.01 (0.02)            | -0.38*** (0.02)       |
| VIIab                        | 0.25*** (0.02)          | 0.27*** (0.02)       | -0.00 (0.02)            | -0.08*** (0.02)        | -0.44*** (0.02)       |
| Unemployed/inactive          | 0.34*** (0.05)          | 0.30*** (0.05)       | -0.03 (0.03)            | -0.13*** (0.02)        | -0.47*** (0.04)       |
| Observations                 | 5,735                   | 5,735                | 5,735                   | 5,735                  | 5,735                 |
| Pseudo-R2                    | 0.0577                  |                      |                         |                        |                       |

Source: FQP 2015

### 3.2 First track placement in upper secondary education

The survey “*Formation et Qualification Professionnelle 2014-2015*” (FQP) does not include information about first track placement. For a better understanding on how the differences in secondary degree attainment come about, we use panel data (“*Panel d’élèves du second degré*”) which allow a finer-grained analysis of students’ trajectories during secondary education, even though it is for a younger cohort. The survey “*Panel d’élèves du second degré, recrutement 1995 - 1995-2011*” collected detailed information on the educational career and family background of students who entered lower secondary education (usually at age 11) for the first time in September 1995, that is mainly pupils born in 1984 (but some have repeated or skipped grades in primary education and are thus born earlier or later). Overall the educational trajectories until access to higher education are complete for around 14,000 pupils, among which around 12,000 have information on parental education.

**Table 2.** Highest degree obtained in high school by track enrolment in 11<sup>th</sup> grade, birth cohort ~1984

| Highest degree obtained in high school | Enrolment in first 11th grade |                        |                     |                |               |
|--|-------------------------------|------------------------|---------------------|----------------|---------------|
|  | Exit school                   | Vocational high school | Technological track | Academic track | Total         |
| Exit with no degree                    | 97.1%                         | 28.1%                  | 10.0%               | 3.7%           | <b>20.5%</b>  |
| Short vocational                       | 2.9%                          | 41.4%                  | 0.3%                | 0.1%           | <b>16.0%</b>  |
| Vocational HS degree                   | 0.0%                          | 24.5%                  | 0.6%                | 0.2%           | <b>9.5%</b>   |
| Technological HS degree                | 0.0%                          | 6.0%                   | 88.8%               | 2.4%           | <b>17.5%</b>  |
| Academic HS degree                     | 0.0%                          | 0.0%                   | 0.4%                | 93.5%          | <b>36.5%</b>  |
| <b>Total</b>                           | <b>100%</b>                   | <b>100%</b>            | <b>100%</b>         | <b>100%</b>    | <b>100.0%</b> |
| <b>N</b>                               | <b>978</b>                    | <b>5 272</b>           | <b>2 229</b>        | <b>5 420</b>   | <b>13 899</b> |

Source: Own calculation based on panel des élèves 1995.

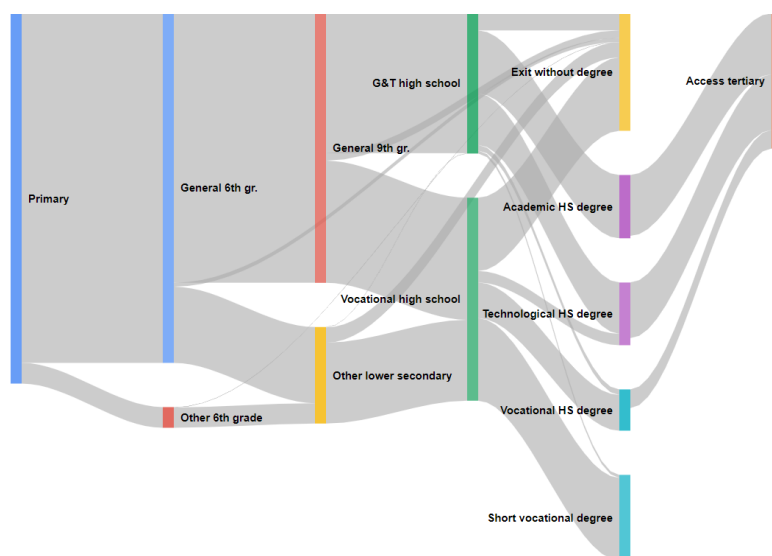
As shown by Table 2, there is a strong association, in France, between the track students are enrolled into in grade 11 (i.e. after the second tracking point) and final attainment in high school. Overall mobility during high school remains marginal. Among students initially enrolled in the academic track, almost 94% graduate from this degree, and when they don't, they more often leave without any degree (almost 4%) than graduate from another track. However, 6% of those initially enrolled in a vocational track manage to eventually graduate from a technological high school degree and this is the largest proportion of mobility across tracks found for this cohort.

Figure 3a further illustrates the whole trajectories in secondary education of pupils whose parents have no more than a lower secondary degree and figure 3b for pupils with at least one tertiary-educated parent. It is worth noting that, in this sample, these two groups are almost equivalent in size and each accounts for about a quarter of all students.

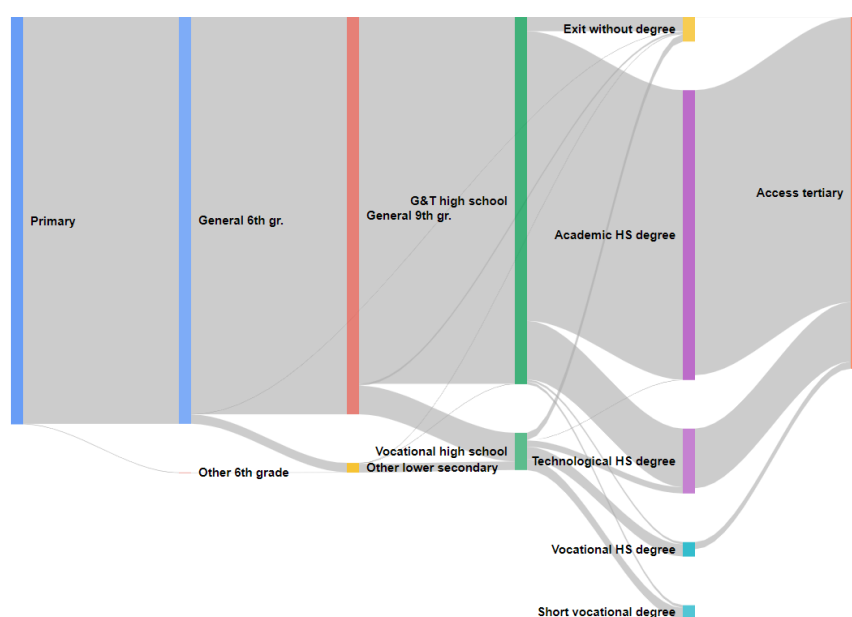
Figure 3a and 3b show that educational trajectories by parental education actually diverge early during secondary education. By the end of lower secondary education (grade 9, around 14 year-olds), already a quarter of pupils with low-educated parents are enrolled in non-general tracks (usually pre-vocational 9<sup>th</sup> grade) while this is the case of less than 3% of pupils with tertiary-educated parents.

Among pupils enrolled in a general 9<sup>th</sup> grade, transition rates to an academic 10<sup>th</sup> grade reach 92% for those with tertiary-educated parents compared to only 52% for those with parents with at most a lower secondary degree. And among those who makes it to an academic 10<sup>th</sup> grade, 79% of pupils with tertiary-educated parents eventually graduate from an academic high school degree compared to only 45% of those with low-educated parents. At the end of secondary education, only 17% of all pupils with low-educated parents have graduated from the academic high school degree and almost a third of them have left without any degree. In contrast, 71% of pupils with tertiary-educated parents have graduated from the academic high school degree and only 6% of them have left without any degree. Finally, transition rates to higher education for each track of high school degree do not differ much by parental education but the different distribution of disadvantaged and advantaged students in different high school tracks translate into very different access rates to higher education by parental education: only 37% of pupils with low-educated parents enter higher education while this is the case of 86% of those with highly-educated parents.

**Figure 3a:** Simplified educational trajectories of students whose parents have no more than a lower secondary degree (birth cohort ~1984)



**Figure 3b:** Simplified educational trajectories of students whose parents have at least one tertiary degree (birth cohort ~1984)



Source: Own illustration and calculation based on panel des élèves 1995.

### 3.3 Social origin and informal sorting

The survey *Panel d'élèves du second degré-1995* also allows one to estimate the influence of social origin on informal ways of sorting students both between schools (private school or ZEP school attendance) and within schools (through electives such as German as a first foreign language or Latin).

**Table 3.** Association between parental education or parental class and various forms of informal sorting, linear regressions with robust standard errors

|  |  | <b>Model 1</b>     | <b>Model 2</b> |
|--|--|--------------------|----------------|
|  |  | Parental education | Parental class |
| <b>Outcome: Private school attendance</b>                  |  |                    |                |
| Parental education   | Higher education degree (reference category) |                    |                |
|  | High school degree                           | 0.01 (0.01)        |                |
|  | Vocational (CAP/BEP)                         | 0.04*** (0.01)     |                |
|  | Lower secondary or less                      | -0.07*** (0.01)    |                |
| Parental social class                                      | I+II (reference)                             |                    |                |
|  | IIIab  |                    | -0.01 (0.01)   |
|  | IVab   |                    | 0.08*** (0.02) |
|  | IVc  |                    | 0.20*** (0.03) |
|  | V+VI   |                    | -0.07***(0.01) |
|  | VIIab  |                    | -0.10***(0.02) |
|  | Unemployed/inactive                          |                    | -0.12***(0.03) |
| R2   |  | 0.007              | 0.012          |
| <b>Outcome: Priority school attendance</b>                 |  |                    |                |
| Parental education   | Higher education degree (reference category) |                    |                |
|  | High school degree                           | 0.03*** (0.01)     |                |
|  | Vocational (CAP/BEP)                         | 0.06*** (0.01)     |                |
|  | Lower secondary or less                      | 0.20*** (0.01)     |                |
| Parental social class                                      | I+II (reference)                             |                    |                |
|  | IIIab  |                    | 0.09*** (0.01) |
|  | IVab   |                    | 0.05*** (0.01) |
|  | IVc  |                    | -0.03** (0.01) |
|  | V+VI   |                    | 0.18*** (0.01) |
|  | VIIab  |                    | 0.26*** (0.02) |
|  | Unemployed/inactive                          |                    | 0.27*** (0.03) |
| R2   |  | 0.047              | 0.052          |
| <b>Outcome: German as first foreign language-6th grade</b> |  |                    |                |
| Parental education   | Higher education degree (reference category) |                    |                |
|  | High school degree                           | -0.08*** (0.01)    |                |
|  | Vocational (CAP/BEP)                         | -0.10*** (0.01)    |                |
|  | Lower secondary or less                      | -0.13*** (0.01)    |                |
| Parental social class                                      | I+II (reference)                             |                    |                |
|  | IIIab  |                    | -0.09***(0.01) |
|  | IVab   |                    | -0.10***(0.01) |
|  | IVc  |                    | -0.10***(0.02) |
|  | V+VI   |                    | -0.09***(0.01) |
|  | VIIab  |                    | -0.11***(0.01) |
|  | Unemployed/inactive                          |                    | -0.12***(0.02) |
| R2   |  | 0.022              | 0.019          |

**Table 3. Continued**

| <b>Outcome: Latin in 7th grade</b> |  |                  |
|------------------------------------|--|------------------|
| Parental education                 | Higher education degree (reference category) |                  |
|                                    | High school degree                           | -0.16*** (0.01)  |
|                                    | Vocational (CAP/BEP)                         | -0.32*** (0.01)  |
|                                    | Lower secondary or less                      | -0.39*** (0.01)  |
| Parental social class              | I+II (reference)                             |                  |
|                                    | IIIab  | -0.25***(0.01)   |
|                                    | IVab   | -0.22***(0.02)   |
|                                    | IVc  | -0.23***(0.02)   |
|                                    | V+VI   | -0.32***(0.01)   |
|                                    | VIIab  | -0.38***(0.01)   |
|                                    | Unemployed/inactive                          | -0.42***(0.02)   |
| R2                                 |  | 0.110      0.092 |

Source: Panel des élèves 1995.

Table 3 suggests that private school attendance (at any point in the secondary school career) only differs slightly by parental education. Pupils whose parents have at most a vocational short training degree are actually slightly more likely to ever attend a private school than pupils with a tertiary-educated parent. However, it should be noted that the private sector provides a large offer of vocational training programmes in France. The share of private schools amounts to 43% of vocational high schools, compared with 39% for academic high schools and 26% of lower secondary ones (DEPP - Ministère de l'Éducation, 2018). As shown above, disadvantaged pupils are much more likely to attend the vocational track, and this probably explains the higher propensity to attend a private school at any point of secondary education. There are larger differences associated with parental social class as pupils from the petty bourgeoisie and farmers are more likely to attend a private school than those from the service class (+8 & +20 p.p. respectively). Although some very prestigious private schools also exist, and we can expect a larger influence of parental education and class in their case, the data do not allow us to identify these prestigious institutions.

Regarding being enrolled in a priority education ZEP school (i.e. schools in disadvantaged neighbourhoods), the estimates show that, as expected, pupils from disadvantaged background are much more likely to attend such school. Students whose parents do not have any degree are 20 p.p. more likely to attend a ZEP school compared to students with at least one tertiary-educated parent and the difference between the service class and the unskilled working class amounts to 26 p.p.

Finally, we estimated the association between social origin and elective subjects which are known to be used for ability groupings, German as a first language and Latin (elective available from grade 7). Although it is important to keep in mind that elective subjects do not necessarily lead to within-school tracking, it can be used as a criterion to group students in different classes as described in the first section. Results confirm that socially advantaged students are much more likely to choose German and/or Latin in the beginning of lower secondary education. The differences are especially large in the case of Latin: pupils whose parents have no more than a lower secondary degree are 39 p.p. less likely to choose Latin and pupils whose parents are unskilled workers are 38 p.p. less likely to do so.

## 4. Long-term consequences of tracking

Table 4 provides the summary statistics for the outcomes used in the following analyses, namely, the proportion of higher education graduates, the proportion of graduates from academic university degrees or “*grandes écoles*”, the social class at the time of the survey or for the last known job, the proportion of individuals who experienced long unemployment (6 months or more) during the five years before the survey and the average annual earnings in the year before the survey. It should be noted that the FQP survey which allows us to study long-term outcomes in the labour-market, only includes the degree attained in secondary education but not the first track placement. Thus, the following analyses only estimate the association between secondary attainment and later outcomes.

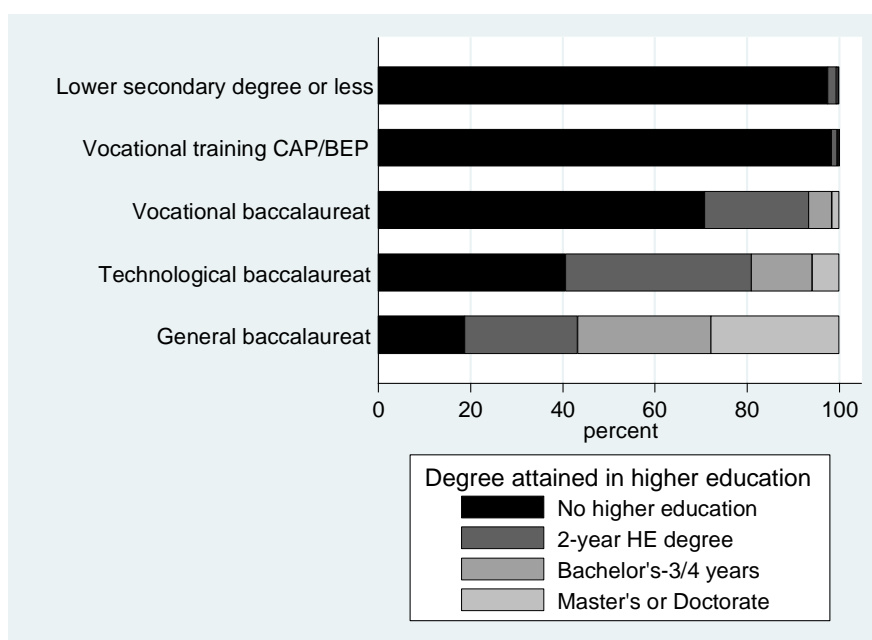
**Table 4.** Outcomes at occupational maturity (age 35-45), 1970-79 birth cohort.

|   | Mean (%) | SD     |
|---|----------|--------|
| Higher education degree   | 43.4%    |        |
| Academic university degree or <i>Grande école</i> degree                | 22.3%    |        |
| Social class  | I        | 16.4%  |
|   | II       | 19.2%  |
|   | IIIab    | 27.7%  |
|   | IVab     | 6.0%   |
|   | IVc      | 1.5%   |
|   | V+VI     | 17.5%  |
|   | VIIab    | 10.5%  |
| Unemployed/inactive   | 1.2%     |        |
| Six or more consecutive months of unemployment over the last five years | 13.9%    |        |
| Annual earnings (€)   | 20.809   | 17.163 |

Source: FQP 2015.

### 4.1 Educational attainment

Figure 4 illustrates the highest degree attained, depending on the degree obtained in secondary education. It distinguishes between vocational/professional 2-year degrees (DUT & BTS in figure 1 above), bachelor’s degrees (3-year) or 4-year degrees (which used to be granted at the end of the first year of a Master’s programme but no longer exist), and Master’s (5-years including both Master’s from university and degrees from “*grandes écoles*”) or Ph.D. degree.



**Figure 4:** Higher education degree by secondary education, birth cohort 1970-1979

Source: Own calculation based on FQP 2015.

Graduation from the high school degree (“*baccalauréat*”) is the main pathway to gain access to higher education and alternative pathways are extremely marginal. Thus, very few individuals with at most a lower secondary or vocational training degree in secondary education gained a degree from higher education (less than 2.5%). The highest degree obtained further differs greatly depending on the track of *baccalauréat*. Almost three quarters of graduates from a vocational *baccalauréat* (~74%) did not graduate from higher education, while around 20% of them gained a 2-year degree in higher education. In contrast, 88% of academic *baccalauréat* holders graduated from higher education, and almost two thirds (61%) obtained at least a bachelor’s degree (or equivalent). More than two thirds (65%) of technical *baccalauréat* holders also gained a degree in higher education but they typically obtained a 2-year vocational degree (47%) and only 17% of them graduated from a bachelor’s degree or more.



**Table 5.** Linear regression of higher education attainment, birth cohort 1970-1979, with robust standard errors

|   |  | <b>(1) Broad secondary attainment</b> |        | <b>(2) Detailed secondary attainment</b> |        |
|---|--|---------------------------------------|--------|--|--------|
| <b>Outcome: Higher education degree</b>         |  |                                       |        |  |        |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                                       |        |  |        |
|   | Vocational (CAP/BEP)                         | -0.00                                 | (0.01) |  |        |
|   | Vocational baccalaureat                      | 0.24***                               | (0.02) |  |        |
|   | Technical baccalaureat                       | 0.63***                               | (0.02) |  |        |
| Detailed degree obtained in secondary education | General baccalaureat                         | 0.86***                               | (0.01) |  |        |
|   | Lower secondary or less (reference category) |                                       |        |  |        |
|   | Vocational CAP                               |                                       |        | 0.01                                     | (0.01) |
|   | Vocational BEP                               |                                       |        | -0.02***                                 | (0.00) |
|   | Vocational baccalaureat (reference category) |                                       |        | 0.24***                                  | (0.02) |
|   | Technical baccalaureat                       |                                       |        | 0.63***                                  | (0.02) |
|   | General baccalaureat-Litterature             |                                       |        | 0.82***                                  | (0.02) |
|   | General baccalaureat-Economics               |                                       |        | 0.86***                                  | (0.02) |
|   | General baccalaureat-Scientific              |                                       |        | 0.91***                                  | (0.01) |
|   | General baccalaureat-other stream            |                                       |        | 0.65***                                  | (0.06) |
| Constant  |  | 0.02***                               | (0.00) | 0.02***                                  | (0.00) |
| Observations                                    |  | 5,735                                 |        | 5,735                                    |        |
| R2  |  | 0.585                                 |        | 0.588                                    |        |
| <b>Outcome: Academic university degree</b>      |  |                                       |        |  |        |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                                       |        |  |        |
|   | Vocational (CAP/BEP)                         | -0.00                                 | (0.00) |  |        |
|   | Vocational baccalaureat                      | 0.04***                               | (0.01) |  |        |
|   | Technical baccalaureat                       | 0.14***                               | (0.01) |  |        |
| Detailed degree obtained in secondary education | General baccalaureat                         | 0.57***                               | (0.01) |  |        |
|   | Lower secondary or less (reference category) |                                       |        |  |        |
|   | Vocational CAP                               |                                       |        | -0.00                                    | (0.00) |
|   | Vocational BEP                               |                                       |        | -0.00*                                   | (0.00) |
|   | Vocational baccalaureat (reference category) |                                       |        | 0.04***                                  | (0.01) |
|   | Technical baccalaureat                       |                                       |        | 0.14***                                  | (0.01) |
|   | General baccalaureat-Litterature             |                                       |        | 0.53***                                  | (0.02) |
|   | General baccalaureat-Economics               |                                       |        | 0.54***                                  | (0.02) |
|   | General baccalaureat-Scientific              |                                       |        | 0.63***                                  | (0.02) |
|   | General baccalaureat-other stream            |                                       |        | 0.27***                                  | (0.06) |
| Constant  |  | 0.00*                                 | (0.00) | 0.00*                                    | (0.00) |
| Observations                                    |  | 5,735                                 |        | 5,735                                    |        |
| R2  |  | 0.374                                 |        | 0.383                                    |        |

Source: FQP 2015.

Table 5 displays the results of the linear regressions of higher education attainment for individuals born between 1970 and 1979. Results confirm the very large association between the track of the secondary degree and higher educational attainment in France. Having a vocational high school degree (compared to no degree) increases by 24 p.p. the probability to graduate from higher education; a technological one by 63 p.p.; and an academic one by no less than 86 p.p. There are also some differences depending on the streams of the academic *baccalauréat* (model 2) as their effect ranges from +65 p.p. for alternative other streams (a marginal option which is attended by less than 2% of the sample); +82 p.p. for the literature stream and up to +91 p.p. for the scientific one (compared to no secondary degree). In addition, only controlling for the degree obtained in secondary education already explains a very high proportion of the variance of graduation from higher education, as the  $R^2$  amounts to almost 0.60.

Regarding the probability to attain an academic university degree (or from a “*grande école*”), only graduating from the academic track is associated with a large increase (+57 p.p. compared to no secondary degree) in the probability to reach these degrees. Again, the scientific stream of the academic track is associated with the largest increase to graduate from academic higher education (+63 p.p. compared to no secondary degree). However, the proportion of the explained variance is lower ( $R^2 = 0.38$ ) for this outcome than for higher education attainment in general. The analyses are replicated using logistic regressions and the average marginal effects and McFadden pseudo- $R^2$  are provided in Table A in the appendix.

## 4.2 Labour market outcomes at occupational maturity

Turning to the labour market outcomes at occupational maturity, Table 6 shows the association between the type of degree obtained in secondary education and social class based on the EGP classification<sup>2</sup>, with unemployment over the last five years, and with earnings; for individuals born between 1970 and 1979. Unfortunately, the FQP survey does not provide the ISEI code of occupations and we cannot look at this outcome.

In the first model, we only control for the type of secondary degree attained classified in five categories: lower secondary or less, vocational training, vocational *baccalauréat*, technical *baccalauréat*, academic *baccalauréat*. In a second model, we control for secondary attainment with a more detailed classification (9 categories) which further distinguishes between the type of vocational training degree (CAP or BEP) and the stream of the academic high school degree (literature, economics, scientific or other streams which are alternative degrees equivalent to the *baccalauréat*, mainly for adult education). However, we are not able to get any indicators of de-facto tracking in this database. In the third model, we additionally control for the type of degree attained in higher education coded in 4 categories: "No degree", "2-year degree", "Bachelor's 3/4-year degree", "Master or doctorate".

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<sup>2</sup> The classification of French occupations into EGP categories is done using the STATA do-file by Veljkovic, based on the classification by L.A. Vallet (Veljkovic, 2018)

**Table 6.** Linear regression of occupational outcomes, birth cohort 1970-1979, with robust standard errors

|   |  | (1) Broad secondary attainment | (2) Detailed secondary attainment | (3) + type of higher education degree |
|---|--|--------------------------------|-----------------------------------|---------------------------------------|
| <b>Outcome: Higher service class I</b>          |  |                                |                                   |                                       |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational (CAP/BEP)                         | 0.00 (0.01)                    |                                   |                                       |
|   | Vocational baccalaureat                      | 0.04*** (0.01)                 |                                   |                                       |
|   | Technical baccalaureat                       | 0.16*** (0.01)                 |                                   |                                       |
|   | General baccalaureat                         | 0.34*** (0.01)                 |                                   |                                       |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational CAP                               |                                | 0.00 (0.01)                       | 0.00 (0.01)                           |
|   | Vocational BEP                               |                                | 0.00 (0.01)                       | 0.01 (0.01)                           |
|   | Vocational baccalaureat                      |                                | 0.04*** (0.01)                    | 0.01 (0.01)                           |
|   | Technical baccalaureat                       |                                | 0.16*** (0.01)                    | 0.07*** (0.01)                        |
|   | General baccalaureat-Litterature             |                                | 0.19*** (0.02)                    | -0.00 (0.02)                          |
|   | General baccalaureat-Economics               |                                | 0.31*** (0.02)                    | 0.07*** (0.02)                        |
|   | General baccalaureat-Scientific              |                                | 0.46*** (0.02)                    | 0.12*** (0.02)                        |
|   | General baccalaureat-other stream            |                                | 0.17*** (0.05)                    | 0.01 (0.05)                           |
| Constant  |  | 0.02*** (0.01)                 | 0.02*** (0.01)                    | 0.02*** (0.01)                        |
| Observations                                    |  | 5,735                          | 5,735                             | 5,735                                 |
| R2  |  | 0.162                          | 0.193                             | 0.351                                 |
| <b>Outcome: service class I+II</b>              |  |                                |                                   |                                       |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational (CAP/BEP)                         | 0.00 (0.01)                    |                                   |                                       |
|   | Vocational baccalaureat                      | 0.15*** (0.02)                 |                                   |                                       |
|   | Technical baccalaureat                       | 0.35*** (0.02)                 |                                   |                                       |
|   | General baccalaureat                         | 0.62*** (0.01)                 |                                   |                                       |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational CAP                               |                                | -0.01 (0.01)                      | -0.01 (0.01)                          |
|   | Vocational BEP                               |                                | 0.02 (0.02)                       | 0.03* (0.02)                          |
|   | Vocational baccalaureat                      |                                | 0.15*** (0.02)                    | 0.07*** (0.02)                        |
|   | Technical baccalaureat                       |                                | 0.35*** (0.02)                    | 0.15*** (0.02)                        |
|   | General baccalaureat-Litterature             |                                | 0.55*** (0.02)                    | 0.23*** (0.03)                        |
|   | General baccalaureat-Economics               |                                | 0.59*** (0.02)                    | 0.24*** (0.03)                        |
|   | General baccalaureat-Scientific              |                                | 0.69*** (0.02)                    | 0.28*** (0.03)                        |
|   | General baccalaureat-other stream            |                                | 0.44*** (0.07)                    | 0.19*** (0.06)                        |
| Constant  |  | 0.08*** (0.01)                 | 0.08*** (0.01)                    | 0.07*** (0.01)                        |
| Observations                                    |  | 5,735                          | 5,735                             | 5,735                                 |
| R2  |  | 0.304                          | 0.311                             | 0.386                                 |

**Table 6. Continued**

|   |  |                 |                 |
|---|--|-----------------|-----------------|
| <b>Outcome: Working class V+VI+VIIab</b>        |  |                 |                 |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                 |                 |
|   | Vocational (CAP/BEP)                         | -0.01 (0.02)    |                 |
|   | Vocational baccalaureat                      | -0.14*** (0.03) |                 |
|   | Technical baccalaureat                       | -0.29*** (0.02) |                 |
|   | General baccalaureat                         | -0.39*** (0.02) |                 |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |                 |                 |
|   | Vocational CAP                               | 0.05* (0.03)    | 0.05* (0.03)    |
|   | Vocational BEP                               | -0.08*** (0.03) | -0.08*** (0.03) |
|   | Vocational baccalaureat                      | -0.14*** (0.03) | -0.11*** (0.03) |
|   | Technical baccalaureat                       | -0.29*** (0.02) | -0.21*** (0.03) |
|   | General baccalaureat-Litterature             | -0.42*** (0.02) | -0.30*** (0.03) |
|   | General baccalaureat-Economics               | -0.39*** (0.02) | -0.25*** (0.03) |
|   | General baccalaureat-Scientific              | -0.37*** (0.02) | -0.21*** (0.03) |
|   | General baccalaureat-other stream            | -0.31*** (0.05) | -0.21*** (0.05) |
| Constant  |  | 0.48*** (0.02)  | 0.48*** (0.02)  |
| Observations                                    |  | 5,735           | 5,735           |
| R2  |  | 0.138           | 0.144           |
| <b>Outcome: Unskilled working class VIIab</b>   |  |                 |                 |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                 |                 |
|   | Vocational (CAP/BEP)                         | -0.11*** (0.02) |                 |
|   | Vocational baccalaureat                      | -0.22*** (0.02) |                 |
|   | Technical baccalaureat                       | -0.25*** (0.02) |                 |
|   | General baccalaureat                         | -0.27*** (0.02) |                 |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |                 |                 |
|   | Vocational CAP                               | -0.08*** (0.02) | -0.08*** (0.02) |
|   | Vocational BEP                               | -0.15*** (0.02) | -0.15*** (0.02) |
|   | Vocational baccalaureat                      | -0.22*** (0.02) | -0.20*** (0.02) |
|   | Technical baccalaureat                       | -0.25*** (0.02) | -0.21*** (0.02) |
|   | General baccalaureat-Litterature             | -0.28*** (0.02) | -0.22*** (0.02) |
|   | General baccalaureat-Economics               | -0.26*** (0.02) | -0.20*** (0.02) |
|   | General baccalaureat-Scientific              | -0.27*** (0.02) | -0.21*** (0.02) |
|   | General baccalaureat-other stream            | -0.24*** (0.03) | -0.19*** (0.03) |
| Constant  |  | 0.29*** (0.02)  | 0.29*** (0.02)  |
| Observations                                    |  | 5,735           | 5,735           |
| R2  |  | 0.096           | 0.104           |

**Table 6.** Continued

|   |  |                 |                 |
|---|--|-----------------|-----------------|
| <b>Outcome: Six or more consecutive months of unemployment over the last five years</b> |  |                 |                 |
| Degree obtained in secondary education  | Lower secondary or less (reference category) |                 |                 |
|   | Vocational (CAP/BEP)                         | -0.06*** (0.02) |                 |
|   | Vocational baccalaureat                      | -0.09*** (0.02) |                 |
|   | Technical baccalaureat                       | -0.11*** (0.02) |                 |
|   | General baccalaureat                         | -0.12*** (0.02) |                 |
| Detailed degree obtained in secondary education   | Lower secondary or less (reference category) |                 |                 |
|   | Vocational CAP                               | -0.05** (0.02)  | -0.05** (0.02)  |
|   | Vocational BEP                               | -0.07*** (0.02) | -0.07*** (0.02) |
|   | Vocational baccalaureat                      | -0.09*** (0.02) | -0.08*** (0.02) |
|   | Technical baccalaureat                       | -0.11*** (0.02) | -0.08*** (0.02) |
|   | General baccalaureat-Litterature             | -0.09*** (0.02) | -0.05* (0.03)   |
|   | General baccalaureat-Economics               | -0.11*** (0.02) | -0.07*** (0.02) |
|   | General baccalaureat-Scientific              | -0.16*** (0.02) | -0.11*** (0.02) |
|   | General baccalaureat-other stream            | -0.04 (0.05)    | -0.01 (0.05)    |
| Constant  |  | 0.22*** (0.02)  | 0.22*** (0.02)  |
| Observations  |  | 5,735           | 5,735           |
| R2  |  | 0.014           | 0.017           |
| <b>Outcome: log earnings</b>  |  |                 |                 |
| Degree obtained in secondary education  | Lower secondary or less (reference category) |                 |                 |
|   | Vocational (CAP/BEP)                         | 0.27*** (0.06)  |                 |
|   | Vocational baccalaureat                      | 0.38*** (0.07)  |                 |
|   | Technical baccalaureat                       | 0.60*** (0.06)  |                 |
|   | General baccalaureat                         | 0.77*** (0.06)  |                 |
| Detailed degree obtained in secondary education   | Lower secondary or less (reference category) |                 |                 |
|   | Vocational CAP                               | 0.28*** (0.06)  | 0.28*** (0.06)  |
|   | Vocational BEP                               | 0.25*** (0.07)  | 0.25*** (0.07)  |
|   | Vocational baccalaureat                      | 0.38*** (0.07)  | 0.32*** (0.07)  |
|   | Technical baccalaureat                       | 0.60*** (0.06)  | 0.42*** (0.07)  |
|   | General baccalaureat-Litterature             | 0.52*** (0.07)  | 0.25*** (0.08)  |
|   | General baccalaureat-Economics               | 0.75*** (0.06)  | 0.44*** (0.08)  |
|   | General baccalaureat-Scientific              | 0.95*** (0.06)  | 0.56*** (0.07)  |
|   | General baccalaureat-other stream            | 0.35* (0.19)    | 0.11 (0.18)     |
| Constant  |  | 9.35*** (0.05)  | 9.34*** (0.05)  |
| Observations  |  | 4,446           | 4,446           |
| R2  |  | 0.076           | 0.112           |

Source: FQP 2015. Model 3 controls for higher education attainment coded in 4 categories: "No degree", "2-year degree", "Bachelor's 3/4-year degree", "Master or doctorate".

In terms of access to the higher service class, only holding a technological *baccalauréat* or an academic one increases the probability to reach the higher service class (by 16 p.p. and 34 p.p. respectively), compared to not having any degree. The advantage of academic *baccalauréat* holders reaches 46 p.p. for those who graduated from the scientific stream. But model 3 suggests that the advantage of the technological and academic tracks largely reflect the fact that these tracks lead more often to further degrees in higher education. For example, controlling for the broad type of degree gained in higher education, the advantage of the scientific academic stream, for example, is almost divided by four. Regarding the access to the service class (EGP I or II), the results show similar patterns with even larger advantage associated with holding a technological *baccalauréat* (+35 p.p.) and an academic one (+62 p.p.). But graduating from a vocational *baccalauréat* is also associated with a 15 p.p. higher probability to reach the service class, compared to those with no degree or a vocational training degree (CAP/BEP). Comparing the  $R^2$  for the two outcomes shows that an important share of the variance of access to the service class (I+II) is already accounted for by the broad type of secondary degree (model 1) while the share of the explained variance is multiplied by more than two when adding higher education attainment for access to the higher service class (EGP I).

Turning to the probability of being in the working class (EGP V, VI and VIIab), having a *baccalauréat* is always protective (compared to no degree or a vocational training degree), with the usual hierarchy between tracks of *baccalauréat*. In contrast, holding a vocational training degree (CAP or BEP) already reduces the probability to be in the unskilled working class (EGP VIIab) compared to no degree at all, and gaining a *baccalauréat* further reduces this probability. Still, it is worth noting that there is much less difference across the tracks of the *baccalauréat* than for the other outcomes (from -22 p.p. for the vocational one to -27 p.p. for the academic one) and higher education attainment only slightly mediates this effect. Overall, the models account for 10%, at most, of the variance for the outcome “unskilled working class” and the detailed speciality of the vocational training degree would probably be necessary to better account for the occurrence of this outcome.

Similarly, graduating from any degree in secondary education is associated with a lower probability of experiencing long spells of unemployment (Table 6, continued) and there are little differences across tracks of the *baccalauréat*, which appears to be protective independently of higher education attainment. But secondary attainment, and even when adding higher education attainment, hardly explains any of the variation in long unemployment experience ( $R^2$  is below 2% in all models). The analyses for all binary outcomes are replicated using logistic regressions and the average marginal effects and McFadden pseudo- $R^2$  are provided in Table B in the appendix, showing very similar results than with the linear probability models.

Finally, there are large differences in terms of earnings associated with each track and stream of the secondary degree. Using the exponentiated value of the coefficients, we find that holding a vocational training degree is already associated with a 31% increase in annual earnings compared to those with no degree, while graduating from an academic *baccalauréat* is associated with earnings more than twice as high as earnings of those with no degree. Even when controlling for higher education attainment, the net effect of graduating from the scientific stream amounts to annual earnings which are 74% higher than earnings of those with no secondary degree.

## 5. Decomposition of long-term inequalities

Finally, we estimated the extent to which tracking in secondary education accounts for the association between social origin and outcomes at occupational maturity, using the FQP data. Again, we are only able to look at secondary attainment and not first track placement with these data. Tables 7a and 7b display the mediation analysis for parental education inequalities and social class inequalities, respectively. We estimated the reduction in the social origin coefficients due to the inclusion of controls of the broad type of secondary degree in five categories (model 1), the detailed secondary degree or stream (9 categories, model 2), and finally additionally controlling for higher education attainment (4 categories, model 3).

**Table 7a.** Mediation of tracking for the association between parental education and occupational outcomes, birth cohort 1970-1979, OLS with robust standard errors

|  |  | (0) Total association | (1)+ Broad secondary attainment | (2)+ Detailed secondary attainment | (3) + higher education degree |
|--|--|-----------------------|---------------------------------|------------------------------------|-------------------------------|
| <b>Outcome: Higher education degree</b>    |  |                       |                                 |                                    |                               |
| Parental education                         | Higher education degree (reference category) |                       |                                 |                                    |                               |
|  | High school degree                           | -0.19***              | 74%                             | 74%                                |                               |
|  | Vocational (CAP/BEP)                         | -0.38***              | 79%                             | 79%                                |                               |
|  | Lower secondary or less                      | -0.49***              | 78%                             | 80%                                |                               |
| Observations                               |  | 5,199                 | 5,199                           | 5,199                              |                               |
| R2   |  | 0.137                 | 0,584                           | 0,587                              |                               |
| <b>Outcome: Academic university degree</b> |  |                       |                                 |                                    |                               |
| Parental education                         | Higher education degree (reference category) |                       |                                 |                                    |                               |
|  | High school degree                           | -0.21***              | 52%                             | 57%                                |                               |
|  | Vocational (CAP/BEP)                         | -0.35***              | 63%                             | 63%                                |                               |
|  | Lower secondary or less                      | -0.40***              | 68%                             | 68%                                |                               |
| Observations                               |  | 5,199                 | 5,199                           | 5,199                              |                               |
| R2   |  | 0.122                 | 0,386                           | 0,395                              |                               |
| <b>Outcome: Higher service class I</b>     |  |                       |                                 |                                    |                               |
| Parental education                         | Higher education degree (reference category) |                       |                                 |                                    |                               |
|  | High school degree                           | -0.18***              | 33%                             | 39%                                | 72%                           |
|  | Vocational (CAP/BEP)                         | -0.26***              | 46%                             | 50%                                | 85%                           |
|  | Lower secondary or less                      | -0.28***              | 54%                             | 61%                                | 89%                           |
| Observations                               |  | 5,199                 | 5,199                           | 5,199                              | 5,199                         |
| R2   |  | 0.074                 | 0,173                           | 0,201                              | 0,351                         |

**Table 7a. Continued**

|   |  |          |       |       |
|---|--|----------|-------|-------|
| <b>Outcome: service class I+II</b>  |  |          |       |       |
| Parental education  | Higher education degree (reference category) |          |       |       |
|   | High school degree                           | -0.17*** | 65%   | 65%   |
|   | Vocational (CAP/BEP)                         | -0.32*** | 66%   | 66%   |
|   | Lower secondary or less                      | -0.40*** | 68%   | 70%   |
| Observations  |  | 5,199    | 5,199 | 5,199 |
| R2  |  | 0,095    | 0,305 | 0,310 |
| <b>Outcome: Working class V+VI+VIIab</b>  |  |          |       |       |
| Parental education  | Higher education degree (reference category) |          |       |       |
|   | High school degree                           | 0.07***  | 86%   | 86%   |
|   | Vocational (CAP/BEP)                         | 0.19***  | 68%   | 68%   |
|   | Lower secondary or less                      | 0.21***  | 76%   | 76%   |
| Observations  |  | 5,199    | 5,199 | 5,199 |
| R2  |  | 0,034    | 0,139 | 0,144 |
| <b>Outcome: Unskilled working class VIIab</b>   |  |          |       |       |
| Parental education  | Higher education degree (reference category) |          |       |       |
|   | High school degree                           | 0.01     | -     | -     |
|   | Vocational (CAP/BEP)                         | 0.06***  | 83%   | 83%   |
|   | Lower secondary or less                      | 0.11***  | 73%   | 73%   |
| Observations  |  | 5,199    | 5,199 | 5,199 |
| R2  |  | 0,023    | 0,100 | 0,102 |
| <b>Outcome: Six or more consecutive months of unemployment over the last five years</b> |  |          |       |       |
| Parental education  | Higher education degree (reference category) |          |       |       |
|   | High school degree                           | 0.01     | -     | -     |
|   | Vocational (CAP/BEP)                         | -0.01    | -     | -     |
|   | Lower secondary or less                      | 0.03*    | 133%  | 167%  |
| Observations  |  | 5,199    | 5,199 | 5,199 |
| R2  |  | 0,002    | 0,015 | 0,019 |
| <b>Outcome: log earnings</b>  |  |          |       |       |
| Parental education  | Higher education degree (reference category) |          |       |       |
|   | High school degree                           | -0.19*** | 47%   | 53%   |
|   | Vocational (CAP/BEP)                         | -0.29*** | 59%   | 66%   |
|   | Lower secondary or less                      | -0.40*** | 60%   | 65%   |
| Observations  |  | 4,029    | 4,029 | 4,029 |
| R2  |  | 0,025    | 0,081 | 0,095 |

Source: FQP 2015. The mediation percentage is only calculated when the coefficient in the base model is significantly different from 0 at the 10% level.



**Table 7b.** Mediation of tracking for the association between parental social class and occupational outcomes, birth cohort 1970-1979, OLS with robust standard errors

|  |                     | (0) Total association | (1)+ Broad secondary attainment | (2) Detailed secondary attainment | (3) + higher education degree |
|--|---------------------|-----------------------|---------------------------------|-----------------------------------|-------------------------------|
| <b>Outcome: Higher education degree</b>    |                     |                       |                                 |                                   |                               |
| Parental social class                      | I+II (reference)    |                       |                                 |                                   |                               |
|  | IIIab               | -0.31***              | 77%                             | 77%                               |                               |
|  | IVab                | -0.31***              | 71%                             | 74%                               |                               |
|  | IVc                 | -0.33***              | 79%                             | 79%                               |                               |
|  | V+VI                | -0.40***              | 78%                             | 78%                               |                               |
|  | VIIab               | -0.51***              | 80%                             | 80%                               |                               |
|  | Unemployed/inactive | -0.55***              | 87%                             | 87%                               |                               |
| Observations                               |                     | 5,735                 | 5,735                           | 5,735                             |                               |
| R2   |                     | 0.128                 | 0,590                           | 0,593                             |                               |
| <b>Outcome: Academic university degree</b> |                     |                       |                                 |                                   |                               |
| Parental social class                      | I+II (reference)    |                       |                                 |                                   |                               |
|  | IIIab               | -0.25***              | 64%                             | 68%                               |                               |
|  | IVab                | -0.21***              | 67%                             | 71%                               |                               |
|  | IVc                 | -0.26***              | 73%                             | 73%                               |                               |
|  | V+VI                | -0.30***              | 70%                             | 70%                               |                               |
|  | VIIab               | -0.33***              | 76%                             | 79%                               |                               |
|  | Unemployed/inactive | -0.37***              | 73%                             | 76%                               |                               |
| Observations                               |                     | 5,735                 | 5,735                           | 5,735                             |                               |
| R2   |                     | 0.092                 | 0,381                           | 0,390                             |                               |
| <b>Outcome: Higher service class I</b>     |                     |                       |                                 |                                   |                               |
| Parental social class                      | I+II (reference)    |                       |                                 |                                   |                               |
|  | IIIab               | -0.17***              | 53%                             | 59%                               | 82%                           |
|  | IVab                | -0.14***              | 57%                             | 64%                               | 86%                           |
|  | IVc                 | -0.19***              | 53%                             | 58%                               | 79%                           |
|  | V+VI                | -0.21***              | 57%                             | 62%                               | 86%                           |
|  | VIIab               | -0.26***              | 54%                             | 58%                               | 81%                           |
|  | Unemployed/inactive | -0.27***              | 59%                             | 59%                               | 78%                           |
| Observations                               |                     | 5,735                 | 5,735                           | 5,735                             | 5,735                         |
| R2   |                     | 0.061                 | 0,172                           | 0,202                             | 0,352                         |

**Table 7b. Continued**

|   |                     |          |       |       |       |
|---|---------------------|----------|-------|-------|-------|
| <b>Outcome: service class I+II</b>  |                     |          |       |       |       |
| Parental social class   | I+II (reference)    |          |       |       |       |
|   | IIIab               | -0.25*** | 64%   | 64%   | 84%   |
|   | IVab                | -0.23*** | 65%   | 65%   | 83%   |
|   | IVc                 | -0.36*** | 50%   | 53%   | 61%   |
|   | V+VI                | -0.33*** | 64%   | 67%   | 82%   |
|   | VIIab               | -0.42*** | 64%   | 67%   | 79%   |
|   | Unemployed/inactive | -0.47*** | 66%   | 68%   | 77%   |
| Observations  |                     | 5,735    | 5,735 | 5,735 | 5,735 |
| R2  |                     | 0.096    | 0,316 | 0,321 | 0,391 |
| <b>Outcome: Working class V+VI+VIIab</b>  |                     |          |       |       |       |
| Parental social class   | I+II (reference)    |          |       |       |       |
|   | IIIab               | 0.14***  | 71%   | 71%   | 86%   |
|   | IVab                | 0.09***  | 100%  | 100%  | 111%  |
|   | IVc                 | 0.13***  | 77%   | 77%   | 92%   |
|   | V+VI                | 0.24***  | 54%   | 54%   | 63%   |
|   | VIIab               | 0.29***  | 59%   | 62%   | 69%   |
|   | Unemployed/inactive | 0.26***  | 77%   | 77%   | 85%   |
| Observations  |                     | 5,735    | 5,735 | 5,735 | 5,735 |
| R2  |                     | 0.048    | 0,146 | 0,152 | 0,164 |
| <b>Outcome: Unskilled working class VIIab</b>   |                     |          |       |       |       |
| Parental social class   | I+II (reference)    |          |       |       |       |
|   | IIIab               | 0.07***  | 71%   | 71%   | 86%   |
|   | IVab                | 0.05***  | 100%  | 100%  | 120%  |
|   | IVc                 | 0.10***  | 50%   | 50%   | 50%   |
|   | V+VI                | 0.11***  | 64%   | 64%   | 64%   |
|   | VIIab               | 0.19***  | 53%   | 53%   | 58%   |
|   | Unemployed/inactive | 0.20***  | 60%   | 60%   | 65%   |
| Observations  |                     | 5,735    | 5,735 | 5,735 | 5,735 |
| R2  |                     | 0.035    | 0,103 | 0,106 | 0,110 |
| <b>Outcome: Six or more consecutive months of unemployment over the last five years</b> |                     |          |       |       |       |
| Parental social class   | I+II (reference)    |          |       |       |       |
|   | IIIab               | -0.00    | -     | -     | -     |
|   | IVab                | 0.01     | -     | -     | -     |
|   | IVc                 | -0.04*   | -50%  | -75%  | -75%  |
|   | V+VI                | 0.00     | -     | -     | -     |
|   | VIIab               | 0.05**   | 100%  | 100%  | 120%  |
|   | Unemployed/inactive | 0.19***  | 32%   | 32%   | 37%   |
| Observations  |                     | 5,735    | 5,735 | 5,735 | 5,735 |
| R2  |                     | 0.007    | 0,019 | 0,022 | 0,025 |

**Table 7b.** Continued

| <b>Outcome: log earnings</b> |                     |          |       |       |       |
|------------------------------|---------------------|----------|-------|-------|-------|
| Parental social class        | I+II (reference)    |          |       |       |       |
|                              | IIIab               | -0.25*** | 56%   | 60%   | 76%   |
|                              | IVab                | -0.25*** | 48%   | 56%   | 72%   |
|                              | IVc                 | -0.34*** | 44%   | 47%   | 56%   |
|                              | V+VI                | -0.32*** | 56%   | 59%   | 78%   |
|                              | VIIab               | -0.57*** | 49%   | 51%   | 60%   |
|                              | Unemployed/inactive | -0.66*** | 45%   | 45%   | 53%   |
| Observations                 |                     | 4,446    | 4,446 | 4,446 | 4,446 |
| R2                           |                     | 0.033    | 0,084 | 0,096 | 0,116 |

Source: FQP 2015. The mediation percentage is only calculated when the coefficient in the base model is significantly different from 0 at the 10% level.

Results show that for many outcomes, the track of the secondary degree accounts for a large share of the total association with social origin. First, three-quarter of the association between parental education and graduation from higher education is mediated by the type of degree obtained in secondary education and no less than two thirds of the associations between parental education and being in the service class, in the working class, and in the unskilled working class (model 1, Table 7a). When further controlling for higher education attainment, parental education inequalities are reduced by at least 80% for these outcomes. Regarding graduation with an academic university degree, higher service class and earnings, secondary degree attainment accounts for around half of the associations with parental education. In the case of access to the higher service class and earnings, adding higher education attainment reduces the total association by at least 72% and up to 90%. Only for the unemployment outcome, the mediation analysis appears to be less relevant in the French case, as there is only a small association between parental education and unemployment. Table 7b shows similar patterns of mediation for the association between social class and these various outcomes. However, the mediation of the secondary degree is stronger for the association between social class and graduation from an academic university degree than it is for parental education.

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## Appendix

**Table A.** Logistic regressions of higher education attainment, birth cohort 1970-1979, average marginal effects and McFadden pseudo-R2

|  | (1) Broad secondary attainment | (2) Detailed secondary attainment |
|--|--------------------------------|-----------------------------------|
| <b>Outcome: Higher education degree</b>      |                                |                                   |
| Degree obtained in secondary education       |                                |                                   |
| Lower secondary or less (reference category) |                                |                                   |
| Vocational (CAP/BEP)                         | -0.00 (0.01)                   |                                   |
| Vocational baccalaureat                      | 0.24*** (0.02)                 |                                   |
| Technical baccalaureat                       | 0.63*** (0.02)                 |                                   |
| General baccalaureat                         | 0.86*** (0.01)                 |                                   |
| Observations                                 | 5,735                          |                                   |
| Pseudo-R2                                    | 0.520                          |                                   |
| <b>Outcome: Academic university degree</b>   |                                |                                   |
| Degree obtained in secondary education       |                                |                                   |
| Lower secondary or less (reference category) |                                |                                   |
| Vocational (CAP/BEP)                         | -0.00 (0.00)                   |                                   |
| Vocational baccalaureat                      | 0.04*** (0.01)                 |                                   |
| Technical baccalaureat                       | 0.14*** (0.01)                 |                                   |
| General baccalaureat                         | 0.57*** (0.01)                 |                                   |
| Observations                                 | 5,735                          |                                   |
| Pseudo-R2                                    | 0.385                          |                                   |

Source: FQP 2015. The logistic regression models can only be run with the aggregated secondary attainment because some detailed categories of secondary attainment predict the outcome perfectly.

**Table B:** Logistic regressions of binary occupational outcomes, birth cohort 1970-1979, average marginal effects and McFadden pseudo-R2

|   |  | (1) Broad secondary attainment | (2) Detailed secondary attainment | (3) + type of higher education degree |
|---|--|--------------------------------|-----------------------------------|---------------------------------------|
| <b>Outcome: Higher service class I</b>          |  |                                |                                   |                                       |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational (CAP/BEP)                         | 0.00 (0.01)                    |                                   |                                       |
|   | Vocational baccalaureat                      | 0.04*** (0.01)                 |                                   |                                       |
|   | Technical baccalaureat                       | 0.16*** (0.01)                 |                                   |                                       |
|   | General baccalaureat                         | 0.34*** (0.01)                 |                                   |                                       |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational CAP                               |                                | 0.00 (0.01)                       | 0.00 (0.02)                           |
|   | Vocational BEP                               |                                | 0.00 (0.01)                       | 0.02 (0.02)                           |
|   | Vocational baccalaureat                      |                                | 0.04*** (0.01)                    | 0.05** (0.02)                         |
|   | Technical baccalaureat                       |                                | 0.16*** (0.01)                    | 0.12*** (0.02)                        |
|   | General baccalaureat-Litterature             |                                | 0.19*** (0.02)                    | 0.06*** (0.02)                        |
|   | General baccalaureat-Economics               |                                | 0.31*** (0.02)                    | 0.11*** (0.02)                        |
|   | General baccalaureat-Scientific              |                                | 0.46*** (0.02)                    | 0.15*** (0.02)                        |
|   | General baccalaureat-other stream            |                                | 0.17*** (0.05)                    | 0.07* (0.04)                          |
| Observations                                    |  | 5,735                          | 5,735                             | 5,735                                 |
| Pseudo-R2                                       |  | 0.194                          | 0.215                             | 0.337                                 |
| <b>Outcome: service class I+II</b>              |  |                                |                                   |                                       |
| Degree obtained in secondary education          | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational (CAP/BEP)                         | 0.00 (0.01)                    |                                   |                                       |
|   | Vocational baccalaureat                      | 0.15*** (0.02)                 |                                   |                                       |
|   | Technical baccalaureat                       | 0.35*** (0.02)                 |                                   |                                       |
|   | General baccalaureat                         | 0.62*** (0.01)                 |                                   |                                       |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |                                |                                   |                                       |
|   | Vocational CAP                               |                                | -0.01 (0.01)                      | -0.02 (0.02)                          |
|   | Vocational BEP                               |                                | 0.02 (0.02)                       | 0.05* (0.03)                          |
|   | Vocational baccalaureat                      |                                | 0.15*** (0.02)                    | 0.12*** (0.02)                        |
|   | Technical baccalaureat                       |                                | 0.35*** (0.02)                    | 0.20*** (0.03)                        |
|   | General baccalaureat-Litterature             |                                | 0.55*** (0.02)                    | 0.27*** (0.03)                        |
|   | General baccalaureat-Economics               |                                | 0.59*** (0.02)                    | 0.27*** (0.03)                        |
|   | General baccalaureat-Scientific              |                                | 0.69*** (0.02)                    | 0.33*** (0.03)                        |
|   | General baccalaureat-other stream            |                                | 0.44*** (0.07)                    | 0.24*** (0.06)                        |
| Observations                                    |  | 5,735                          | 5,735                             | 5,735                                 |
| Pseudo-R2                                       |  | 0.253                          | 0.259                             | 0.322                                 |

**Table B: Continued**

**Outcome: Working class V+VI+VIIab**

|   |  |          |        |          |        |
|---|--|----------|--------|----------|--------|
| Degree obtained in secondary education          | Lower secondary or less (reference category) |          |        |          |        |
|   | Vocational (CAP/BEP)                         | -0.01    | (0.02) |          |        |
|   | Vocational baccalaureat                      | -0.14*** | (0.03) |          |        |
|   | Technical baccalaureat                       | -0.29*** | (0.02) |          |        |
|   | General baccalaureat                         | -0.39*** | (0.02) |          |        |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |          |        |          |        |
|   | Vocational CAP                               | 0.05*    | (0.03) | 0.04**   | (0.02) |
|   | Vocational BEP                               | -0.08*** | (0.03) | -0.07*** | (0.02) |
|   | Vocational baccalaureat                      | -0.14*** | (0.03) | -0.09*** | (0.02) |
|   | Technical baccalaureat                       | -0.29*** | (0.02) | -0.17*** | (0.02) |
|   | General baccalaureat-Litterature             | -0.42*** | (0.02) | -0.29*** | (0.02) |
|   | General baccalaureat-Economics               | -0.39*** | (0.02) | -0.22*** | (0.03) |
|   | General baccalaureat-Scientific              | -0.37*** | (0.02) | -0.16*** | (0.03) |
|   | General baccalaureat-other stream            | -0.31*** | (0.05) | -0.17*** | (0.06) |
| Observations                                    |  | 5,735    |        | 5,735    |        |
| Pseudo-R2                                       |  | 0.124    |        | 0.129    |        |

**Outcome: Unskilled working class VIIab**

|   |  |          |        |          |        |
|---|--|----------|--------|----------|--------|
| Degree obtained in secondary education          | Lower secondary or less (reference category) |          |        |          |        |
|   | Vocational (CAP/BEP)                         | -0.11*** | (0.02) |          |        |
|   | Vocational baccalaureat                      | -0.22*** | (0.02) |          |        |
|   | Technical baccalaureat                       | -0.25*** | (0.02) |          |        |
|   | General baccalaureat                         | -0.27*** | (0.02) |          |        |
| Detailed degree obtained in secondary education | Lower secondary or less (reference category) |          |        |          |        |
|   | Vocational CAP                               | -0.08*** | (0.02) | -0.06*** | (0.02) |
|   | Vocational BEP                               | -0.15*** | (0.02) | -0.10*** | (0.02) |
|   | Vocational baccalaureat                      | -0.22*** | (0.02) | -0.14*** | (0.02) |
|   | Technical baccalaureat                       | -0.25*** | (0.02) | -0.14*** | (0.02) |
|   | General baccalaureat-Litterature             | -0.28*** | (0.02) | -0.17*** | (0.02) |
|   | General baccalaureat-Economics               | -0.26*** | (0.02) | -0.12*** | (0.02) |
|   | General baccalaureat-Scientific              | -0.27*** | (0.02) | -0.16*** | (0.02) |
|   | General baccalaureat-other stream            | -0.24*** | (0.03) | -0.13*** | (0.04) |
| Observations                                    |  | 5,735    |        | 5,735    |        |
| Pseudo-R2                                       |  | 0.139    |        | 0.144    |        |

**Table B:** Continued

| <b>Outcome: Six or more consecutive months of unemployment over the last five years</b> |  |                 |                 |
|---|--|-----------------|-----------------|
| Degree obtained in secondary education  | Lower secondary or less (reference category) |                 |                 |
|   | Vocational (CAP/BEP)                         | -0.06*** (0.02) |                 |
|   | Vocational baccalaureat                      | -0.09*** (0.02) |                 |
|   | Technical baccalaureat                       | -0.11*** (0.02) |                 |
|   | General baccalaureat                         | -0.12*** (0.02) |                 |
| Detailed degree obtained in secondary education   | Lower secondary or less (reference category) |                 |                 |
|   | Vocational CAP                               | -0.05** (0.02)  | -0.05** (0.02)  |
|   | Vocational BEP                               | -0.07*** (0.02) | -0.07*** (0.02) |
|   | Vocational baccalaureat                      | -0.09*** (0.02) | -0.07*** (0.02) |
|   | Technical baccalaureat                       | -0.11*** (0.02) | -0.08*** (0.02) |
|   | General baccalaureat-Litterature             | -0.09*** (0.02) | -0.04 (0.03)    |
|   | General baccalaureat-Economics               | -0.11*** (0.02) | -0.05** (0.03)  |
|   | General baccalaureat-Scientific              | -0.16*** (0.02) | -0.11*** (0.02) |
|   | General baccalaureat-other stream            | -0.04 (0.05)    | 0.01 (0.06)     |
| Observations  |  | 5,735           | 5,735           |
| Pseudo-R2   |  | 0.0165          | 0.0242          |

Source: FQP 2015. Model 3 controls for higher education attainment coded in 4 categories: "No degree", "2-year degree", "Bachelor's 3/4 year degree", "Master or doctorate".