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Diversification, Expansion and Inequality in Israeli Higher Education*

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Abstract

During the 1980s and 1990s the Israeli system of higher education went through a radical transformation. The number of degree-granting institutions increased from about 10 to over 80 and the number of undergraduate students increased from about 50 to over 120 thousand. Until the late 80s, over 90 percent of undergraduate students attended one of six research universities. The expansion was achieved primarily through the establishment of less selective, non-research colleges that specialized in undergraduate education. Several types of colleges were established including regional public colleges, teacher-training colleges, and colleges that were extensions of foreign institutions of higher education. However, the enrollments were largest in private colleges offering degrees in the professions, especially Law, Accounting and Management, where tuition fees are about double those common in public institutions.

This paper describes these changes and examines change in the stratification of access to broad categories of institutions and fields of study. We attempt to answer the following research questions: (i) did the transformation increase the odds of attending higher education or did it simply enable the system to meet the growing demand that are a result of immigration and endogenous demographic growth? (ii) Did it reduce social selection in higher education? (iii) Did competition from the new colleges force the veteran universities to reduce social selection or did the colleges enable the universities to maintain their high level of selection? (iv) Did the transformation equalize the opportunity to study 'desirable' fields or did it primarily expand opportunities in the least selective fields of study?

We employed data on person-years for about 1500 respondents who were 25-45 years old in 2001. The person-years relate to the period 1985-2001 and to ages 20-45. These are the age during which the vast majority of students attend higher education in Israel. Our main results are as follows: (i) the odds of attending higher education increased dramatically between 1985-2000. (ii) The odds of attending one of the veteran universities and their social selection did not change. (iii) The colleges are substantially less selective on parental education than are the universities, but, (iv) overall they are much more selective on the economic ability of families to pay tuition fees. (v) College programs in the least selective fields (e.g, humanities and some social sciences) are offered primarily in public colleges and do not charge high fees. (vi) Access to professional degrees in colleges is strongly dependent on family's economic resources. The private colleges appear to offer a viable educational opportunity to the sons and daughters of the middle and affluent classes who had not excelled at the secondary school level.

Introduction

This paper is part of an international comparative project concerning the changes that higher education has gone through in recent decades and their possible effects on the stratification of access to colleges and universities. Since WWII, systems of higher education have expanded rapidly and have been transforming organizationally. Higher education has grown from an elite to a mass institution. In most economically advanced societies, attendance rates have risen from the low teens to about 50 percent of birth cohorts (Trow 1974). Organizationally, expansion was implemented in different ways. In some cases expansion was accommodated simply by increasing the size of existing institutions or by creating additional universities fashioned after the veteran ones (e.g., Austria and Italy of the 70s and 80s). This system consists of **unitary** universities, so labeled because they are all of one type: academic. In other countries, expansion was facilitated by creating a second-tier system of higher education such as the California State University System or community colleges in the USA. This type is called a **stratified** system because the institutions differ in prestige. In a third group of cases, second-tier higher education takes the form of vocational or semi-professional training (e.g., Finland, and the German *fachhochschulen)*. This system is often labeled **binary** because it consists of two types of institutions: academic and vocational. In a fourth group, second-tier and vocational institutions have now been upgraded to university status (the UK) or have been incorporated within larger universities (Australia). Universities that offer both vocational and academic programs are labeled **comprehensive**. Clearly, in many countries, the four types appear in combination or in historical sequence. The objective of the comparative project of which this paper is part, is to find out how different types of reform in higher education affect these stratification outcomes.

In the Israeli case, the reform of the educational system transformed it from a unitary to a stratified one. The purpose of the paper is to evaluate the consequences of the reform on the stratification of entry into different categories of higher education. Specifically, we ask the following empirical questions:

1. Did the reform increase the odds of attending higher education or did it simply enable the system to meet the growing demand caused by immigration and endogenous demographic growth?
2. Did the reform reduce social selection in higher education?
3. Did competition from the new colleges force the veteran universities to reduce social selection or did the colleges enable the universities to maintain selection?
4. Did the reform equalize the opportunity to study 'desirable' fields or did it primarily expand opportunities in the least selective fields of study?

We begin the paper by describing the Israeli educational system and the reform of its higher education during the late 80s and the 90s. We then draw on theory and previous research to formulate hypothesis concerning the consequences of the reform on stratification in higher education. Next, we describe the data and variables, present the results and conclude with a brief discussion of the results.

The Israeli Educational System

At the age of 12, after a year in pre-school and six years in primary school, Israeli children enter middle schools where they spend grades seven, eight and nine. This is followed by upper secondary schools in grades ten through twelve. Upper secondary education consists of two main tracks: the academic track, which prepares students for taking the matriculation examinations, and if successful, they receive a matriculation diploma that is required for admission into most institutions of higher education. The technical track trains most students in a vocation and prepares them for the labor market rather than for further study. In recent years the proportion of technical students sitting for matriculation exams is rising, and now about 20 percent obtain the diploma.

During the late 80s and the 90s, Israeli higher education went through a radical transformation. Until the late 80s the system consisted primarily of six universities regulated by the national Council of Higher Education. The universities were far from identical. As Yogev (2000) described them, they catered for different sectors of the population and offered different clusters of academic programs. The main distinctions

were between core and peripheral institutions and between full-menu and specialized institutions. For example, the Technion, the Hebrew University and Tel Aviv University evolved into core research institutions and were somewhat more selective when recruiting students and faculty than other institutions. The University of Haifa, Ben-Gurion University and Bar Ilan University were established for specific populations (residents of the northern and southern peripheries and religious Jews respectively), whereas the other institutions were national.

However, for all their differences the six universities share several important similarities. First, they are incorporated in the Council for Higher Education, subject to its regulations and are funded largely from the same national budget. Second, their institutional structure is similar in that governance is primarily academic rather than administrative or political. Third, with some small differences selection, into fields of study is similar across institutions in which they are on offer. Fourth, and most importantly, their degrees are about equally valued in the labor market and by the public as a whole.

In addition to the six universities, the Open University offers B.A. and B.Sc. programs in numerous fields of study, and since 1996 it also offers graduate training. However, only 10 percent of its students, as compared with 70 percent in the other universities, complete the full course of studies and obtain a degree. (Israel 2001). Along side these institutions there were a few teacher-training seminars that did not offer academic degrees, and a handful of small colleges.

Admission to the six universities depends on holding a matriculation diploma. In addition, applicants are required to sit for a national psychometric test. Admission to the specific departments and faculties is determined by a weighted average of scores from the matriculation diploma and the psychometric tests. As its name implies, the Open University admits anyone and has no selection procedures.

In less than a decade, Israeli higher education system was transformed from a centralized, compact and organizationally homogenous one to a diverse system in which numerous forms of institutions compete for student attendance. The transformation began in the late 70s with the academization of the teacher-training colleges; it accelerated in the early 90s with the rapid expansion of regional and private colleges, and

the proliferation of colleges that were extensions of foreign universities. These recent developments were encouraged by a series of reforms introduced in the early 1990s. The reforms were three pronged: first, the Council for Higher Education voted to expand public and regional colleges (Council for Higher Education 1993). Second, it encouraged the formation of private colleges (Wallansky 1996). Third, foreign universities were authorized to establish extensions in Israel (Rubinstein, 1993). The private colleges concentrate on fields that are in high-demand such as Law and Business Administration, and cater mainly to students who cannot meet the admissions requirements of the universities but can afford higher tuition fees.

Between 1994 and 1998, the number of colleges and universities operating in Israel quadrupled from about 21 to 84. Of these, 49 were local and 35 were extensions of overseas universities. Admission to most colleges is less severe than the admission requirements of the universities. Colleges require a matriculation diploma but do not usually require psychometric scores. Extensions of universities from abroad were as a rule even more lenient and a matriculation diploma was not obligatory.

Figure 1 shows the organizational diversification of the system. It presents by type the number of institutions that operated in Israel between 1990 and 2000. As can be seen, the number of public and private colleges, teacher-training colleges and extensions of foreign institutions increased during the period, albeit with some fluctuations, whereas the number of universities remained stable.

Expansion was not uniform across academic programs. Rather, it was concentrated primarily in low-cost programs that do not require very expensive infrastructure. Figure 2 plots the changes between 1992-2000, in the number of institutions offering programs in broad categories of fields of study. It is apparent that the number of programs increased in all areas except medicine, physical sciences, life sciences, and agriculture. It seems to have increased most in pencil-and-paper areas (Education, Social Science – especially Psychology, Business Administration, Computer Science, Law) but it also increased somewhat in Engineering and the paramedical professions.

From the standpoint of student enrollment (Figure 3), between the mid 80s and 2000, the number of undergraduates nearly tripled (!) from about 50,000 to 126,900. The expansion was partly due to rapid demographic growth but, even when adjusted for demography, growth was impressive; this can be seen in Figure 4 where we present the ratio of first year university students and of all first year students to the size of the 20-24 age group. As can be seen, between 1991-2000 age-adjusted enrollment in all types of institutions increased by about 50 percent from 23 to 36 percent, whereas the cohort proportion attending universities remained stable. Thus, universities expanded just enough to accommodate demographic growth whereas the expansion of colleges enabled the overall increase in attendance rates. As seen in Figure 3, in 1986 about 90 percent of all undergraduate students attended universities whereas in 2000 about 50 percent attended other types of higher education.

To summarize, during the late 80s and the 90s, Israeli higher education expanded dramatically through the creation and accreditation of regional and private colleges, the academization of teacher training colleges, and the proliferation of foreign extensions. The added capacity of these new institutions tripled student enrollment within a decade. The universities expanded just enough to accommodate demographic growth but overall, the system more than accommodated the large demographic expansion and increased the opportunity for higher education by 50 percent. Expansion was implemented in all areas of study except those requiring very expensive infrastructure, such as physical and life sciences and medicine.

These data answer our first research questions: the expansion of higher education did not just meet demographic demand; it actually increased the opportunity to attend undergraduate education. We shall now draw on theory and on previous studies in other contexts to formulate hypotheses concerning the other three questions.

Theory and Hypotheses

Implications of educational stratification

What were the consequences of these changes on the equality of opportunity in higher education and their effect on social strata, men and women and ethnic groups? The question has three aspects: did the expansion moderate socioeconomic, gender, and ethnic inequalities in enrollment rates; are students of different socioeconomic and ethnic origin unequally distributed between the first-tier and the second-tier systems of higher education; is inequality in enrollment and in institutional destination related to field of study?

We know from previous research that broadening educational opportunities can raise educational attainment rates among working-class and minority students, but not necessarily reduce inequalities. When educational systems expand, opportunities are created not just for the less privileged social classes but for everyone. Privileged groups, who usually do better in school, are better prepared than those of working class or underprivileged groups to take advantage of new educational opportunities. Therefore, as argued by Raftery and Hout in their MMI (Maximally Maintained Inequality) hypothesis (Raftery and Hout, 1993), educational expansion does not reduce educational inequalities between classes. The MMI hypothesis received support from several studies (e.g. Mare 1981; Smith and Cheung 1986; Shavit and Blossfeld 1993) showing that educational inequalities persist in spite of the expansion of educational systems.

The MMI hypothesis may be particularly true for higher education where students and parents of different classes vary considerably in their familiarity with the system (McDonough 1997). Members of privileged groups have a better understanding of the availability and stratification of the alternatives provided in higher education, and a better capacity to manipulate the system to meet their goals. This provides them with an advantage in the competition over new educational options.

When applied to the case at hand MMI predicts that the expansion of higher education would raise enrollment rates among all ethnic and social groups while retaining the pattern of inequality between them. The findings of Bolotin, Shavit and Ayalon

(2002), who examined the effects of the recent expansion of Israeli higher education on ethnic inequalities in attendance rates, provide some support for MMI in this context. They found that as the system expanded, all ethnic groups increased their enrollment rates. However, increases were most pronounced among the more privileged ones.

Due to data limitations, Bolotin et al. were not able to distinguish between universities and colleges. MMI has recently been criticized on the same grounds – the disregard of qualitative differences within educational systems. Following this criticism, Breen and Jonsson (2000) and Lucas (2001) developed educational transitions models that deal with both quantitative and qualitative educational stratification. Lucas argues that when quantitative equality is reached at a level of education, attention should be paid to qualitative inequalities within that level. Ayalon and Shavit (2001) further argued that qualitative differentiation actually enables educational systems to reduce inequalities along the quantitative dimension because the qualitative differences replace quantitative ones as the basis for educational selection. Analyzing reforms in Israeli matriculation examinations, they showed that when a given level of education is tracked, socioeconomic inequalities in the odds of its attainment could decline, while qualitative inequalities persist or even increase.

Qualitative differentiation is of special value in analyzing expansion in higher education systems, particularly in a comparative framework, because expansion can be implemented, as we have seen, in different ways. It is reasonable to assume that the effect of the expansion of higher education on inequality in enrollment would depend on the characteristics of the new institutions. As noted, the expansion in Israel was accomplished largely through the establishment of degree-granting colleges and the upgrading of colleges to degree-granting status. Being academically less demanding and less prestigious than the veteran universities, the colleges can be defined as a second-tier of higher education. Still, these colleges provide an opportunity to get an academic degree, and as such they probably attract less able members of privileged groups who are unable to meet the scholastic demands of the veteran universities. This is particularly true of the professions, which, since they are rewarding economically and socially, are in great demand, and consequently the universities are highly selective when recruiting students for them. In fact, the private colleges, which offer mainly professional programs,

were established in response to the demand of members of privileged groups (e.g. sons and daughters of lawyers who wanted to follow in the footsteps of their parents) who could not meet the requirements of the universities (Guri-Rosenblit, 1993). These colleges charge high tuition fees and cater, almost by definition, to the affluent population.

We hypothesized that the expansion of the opportunity to study the professions provided a second chance to the less able members of economically established groups. As such, this expansion would not reduce socioeconomic inequality in enrollment in higher education.

By contrast, the expansion of the public colleges, which offer programs in less selective and less lucrative fields, such as teaching, the humanities and softer social sciences, cater primarily to students lacking in both cultural and economic resources. Therefore, we hypothesize that their expansion reduced inequalities between social strata in overall attendance of higher education but also that they are attended by economically weaker strata than those attending private colleges.

Data

We employ survey data on a random sample of 1400 men and women aged 25-45. The survey was conducted by telephone during the summer of 2001[1]. The sample consisted of native Israelis and of immigrants who arrived by the age of 14. The survey was conducted in two stages. In the first stage we interviewed a sample of 1400 cases but it turned out to be disproportionately female. The reason is that women are more often at home and are somewhat more cooperative with telephone surveys than men are. In the second stage we sought to compensate for the gender bias and added 100 interviews with men. The overall sample is still biased towards women who comprise 55 percent of the 1500 cases. We corrected for the gender bias by weighting men and women with weights inversely proportionate to their representation in the sample. The 25-45 years age group was chosen because its members include the vast majority of men and women who attended and graduated from Israeli colleges and universities during the 80s and 90s,

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before and since the reform of 1994. Respondents were interviewed about their educational histories with special focus on post-secondary education. In addition, they were asked standard questions about their social background and employment histories before and after their most recent spell of higher education.

Model

Most studies on the effects of reforms on process of educational stratification employ a strategy of cohort analysis. They compare the attainment process for cohorts that are assumed to have attended the educational system before and after the reform in question. Differences between cohorts are attributed to the reform (See, for example the studies in Shavit and Blossfeld 1993). This method is problematic for two reasons. First, a cohort does not attend an educational system at a uniform pace. Some of its members progress through the system quickly while others do so slowly. The variation within cohorts in the timing of attendance is small during the period of primary and secondary education, but is big when reaching tertiary education. Thus, while cohort analysis may be suitable for the study of broad historical changes, it is not an accurate method for assessing the effects of specific educational reforms, especially not at the tertiary level.

Second, most studies of educational reforms that employ cohort analysis try to evaluate the consequences of reforms that had been implemented in recent years. To this end they study cohorts that are relatively young and that are assumed to have attended the educational system under present conditions. However, the younger the cohort, the less complete is its educational attainment process. In technical terms: for young cohorts the educational attainment process is censored and one cannot sort out the effects of reforms from those of censoring.

We overcame these problems by formulating the process of entry into tertiary education as a discrete-time event history model. The units of analysis are person-years. The model claims that in each year between 1985 and 2000, an individual i, is exposed to the risk of attending tertiary education unless he or she has done so in previous years. The log odds of entering tertiary education in year t is affected by variables characterizing the person i, such as his or her social origins; the age to which the person-year pertains, and the calendar year during which the person-year began.

Specifically, we estimated logit models of the following general form:

$$\ln\left(\frac{Pitc}{1-Pitc}\right) = a + b_1 Age_t + b_2 Age_t^2 + b_3 Year_t + b_4 Male_i + b_5 ParEd_i + \overline{b}_6 Ethnicity_i$$
$$+ b_7 Econ_i + [Interactions]$$

The units of analysis for estimation of the model are person-years pertaining to ages 20-45 and conditional on the person not having attended higher education in previous years. Person-years that preceded 1985 were excluded from the analysis because we focused the analysis on the process of change that began in the late 80s. The file consists of 11,857 person-years.

P_{itc} is the probability that person i would enter tertiary education of type c during year t. In some parts of the analysis we contrast 'any form of academic higher education' with 'none', while in other parts we distinguish between university and college education and between broad fields of study. **Age** – Age at the beginning of person-year t; **Year** – Calendar year at the beginning of t; **Male** – a dummy coded 1 for male respondents; **ParEd** – Mean number of mothers' and father's years of education (if one of the two is missing, the variable measures the educational level of the parent for which data are available.). If information was missing for both parents' education, we set the variable to the sample mean and set an indicator dummy to unity. **Ethnicity** –a categorical variable distinguishing between four ethnic categories: Ashkenazim, Jews of Middle-Eastern origins, Jews originating from the Maghreb, and Palestinian citizens of the state of Israel.[2] . Finally, **Econ** stands for the subjective evaluation of the relative economic standing of respondent's family when s/he was 16 years old. The variable was measured on a 5-point scale ranging from 1 to 5.

The effect of age on the log odds of attending tertiary education is quadratic peaking in the early to mid-twenties and declining thereafter. Furthermore, in Israel, on average, men enter higher education later than women because many of them have a

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[2] This classification is consistent with current practice in studies of ethnic stratification in Israel. *Ashkenazim* are defined as respondents whose father was born in a European or American country, or who are sons or daughters of native fathers, whose paternal grandfather was born in these continents. The category also includes second generation native Jews over 80 percent of whom are *Ashkenazim*. Jews of Middle-Eastern origins are those whose fathers (or their paternal grandmother, in the case of native born fathers) were born in Iraq, Iran, Syria, Egypt and other countries in the Middle East. Jews of the Maghreb are defined as those whose fathers (or their grandfather) were born in the North African countries lying between Libya and Morocco. The category of Palestinians consists of all Muslim and Druse respondents as well as of native Christians.

longer military service. Therefore, the effect of Age interacts with Male. We also hypothesized that attendance increased over time as measured by Year. In addition, we hypothesized that the log odds of attendance varied according to gender, parental education and ethnicity.

Holding a matriculation diploma is obligatory for gaining entrance to most forms of higher education. During the 90s there were far-reaching changes in matriculation rates (Ayalon and Shavit 2001). Ideally, we would want to know how these changes might have affected the processes of attending higher education. Furthermore, we would have wanted to distinguish between changes in our dependent variables that are due to changes in the risk-set of matriculates from secondary school, and those that are due to institutional changes in higher education. To this end, we would have required reliable information on respondents' matriculation diploma. Unfortunately, our measure of whether or not respondents obtained the diploma is quite unreliable. About 60 percent of respondents claimed to have the diploma as compared with an actual rate of about 30 percent in this age group (Ayalon and Shavit 2001). Interestingly, we do not find such large upward biases in the measure of other levels of education and suspect that the exaggerated self-reported matriculation rate is due to the phrasing of the questionnaire item concerning the diploma. This is very unfortunate because the attainment of a matriculation diploma is such an important point of selection in the educational process. There is nothing we can do to correct for this shortcoming of our data and we simply had to ignore the variable.

Results

Table 1 presents descriptive statistics for the various variables involved in the analysis. The statistics are presented under the rubrics of 'respondents' and 'person-years' as units of analysis. At the level of individuals we see that about half the sample claims to have attended some higher education, of which 26 percent claim to have done so at universities and 23 percent at colleges. The sample is weighted to be equally distributed between men and women. Forty-three percent of the weighted sample is Ashkenazi, 18.8 percent are from Middle Eastern origins, 23 percent originated from the Maghreb, and about 15

percent are Palestinians. The latter proportion is quite low by comparison with the national proportion of over 20 percent for the age group. Information on parental education is missing for 26.7 percent, the mean level of parental education is 11.1 years, the mean level of economic condition is about 3, and the mean age of respondents is 34 years.

At the level of person-years the distributions are, as expected, very different. During only 4.4 percent of the years did respondents enter higher education, turning about equally to universities and colleges. Ashkenazim contribute fewer person-years on average than other ethnic categories because they are most likely to enter higher education. As we explained above, once a person enters higher education s/he is excluded from the risk-set for further entries and does not contribute additional years.[3] For similar reasons, the mean educational level of parents is lower when computed across person-years than when computed across persons: the sons and daughters of educated parents are not likely to stay in the risk-set for very long before entering higher education. The proportion of missing data on parents education is higher because respondents whose parents attained low levels of schooling are more likely to report it as missing and are also likely to be less educated themselves and to contribute many years to the sample of person-years. The mean level of economic condition is nearly 3 and, finally, the average year was 1993-94 when respondent was 28.4 years of age.

We begin the multivariate analysis by estimating the model for the log odds of attending University. The estimates of the best fitting model are shown in the left panel of Table 2. Some of the results are predictable: the effect of age is indeed quadratic and, as indicated by the positive interaction between Male and Age, peaks later for men than for women. Men appear to be disadvantaged in the log odds of entering university, but note that the interaction of Male and Age is positive. By the age of 25, the positive contribution of the interaction (25*0.18=4.5) exceeds the negative main effect of Male. This simply reflects the fact that men enter universities later than women.

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[3] For example, a person who never entered higher education remains in the risk-set from the age 20 to 45 and contributes 26 years. By contrast, a person who entered higher education at age 25 contributes only 6 years. Ashkenazim are more likely to be of the latter type than other groups and thus are underrepresented in the sample.

The effect of parental education is positive and strong, and Ashkenazim are most likely to attend universities. *Ceteris paribus,* Middle-Eastern Jews are not significantly disadvantaged, in this respect, relatively to Ashkenazim. These groups are followed by North-African Jews and Palestinians, whose effects are not significantly different from one another (test not shown).

The model has two interesting result: first, the effect of Year is insignificant and is about zero. This result is consistent with the descriptive analysis discussed earlier and confirms that between 1985 and 2000 the log odds of attending university were stable. Second, the effect of Economic Condition is virtually zero, indicating that the economic capability of families is not an important determinant for university attendance. The effect of parental education is positive and strong. We assume that it is mediated largely by prior educational achievements. For example, Ayalon and Shavit (2001) have shown that performance in the matriculation examinations is twice as strongly related to parental education than to the economic conditions of families. Families' economic conditions do not constitute an important barrier to university attendance.

As noted, we tested for all two-way interactions between Year on the one hand and Male, Parental Education, Ethnicity and Economic Condition on the other hand and none was found to be significant. In short, the odds of university attendance were stable during the period but more importantly, universities did not become more socially selective nor did the competition with the new second-tier system lower social selection at universities.

In the right-hand panel of Table 2 we repeat the analysis for the attendance at either a university or a college (i.e., attending any form of higher education). The results differ from those seen earlier in several interesting respects. First, the effect of Year is positive and significant indicating that between 1985 and 2000 there was an increase in the overall odds of attending higher education. When combined with the null effect of Year vis-à-vis university, the conclusion is clear: the increase is due to the expansion of the colleges. Second, the main effect of Male is lower but so is its positive interaction effect with Age. The latter cancels out the former only at age 29, by which age very few people still enter higher education for the first time. In other words, women are at an advantage over men with respect to their log odds of attending higher education,

especially in colleges. Third, the effect of Parental Education is much weaker in Column 2 than in Column 1 whereas the effect of Economic Condition is much stronger. This result is consistent with the argument that colleges are less selective on prior scholastic achievements but that the higher tuition fees of private colleges exclude students of lesser means. Overall, colleges provide an alternative form of higher education to the academically weaker sons and daughters of the middle and affluent classes rather than to the lower classes as such.

This conclusion is strengthened by the analysis shown in Table 3 where we present multinomial logit parameter estimates for the contrasts of attending university rather than a college and for attending a college rather than no higher education. The odds of attending a university rather than a college are positively related to parental education and negatively related, *ceteris paribus,* to their economic conditions. In addition, over time, the odds of university attendance decline in favor of college attendance.

The contrast between attending college and 'no higher education' shows that college attendance is not affected by parental education per se but *is* strongly affected by the economic conditions of family of origin. With time, the odds of attending college increase by about 12 percent a year. Women are more likely than men to attend colleges and Jews are more likely than Palestinians to do so. We suggest that women are more likely to attend colleges than men because they are prepared to consider a larger variety of options. Women apply to more institutions and to more fields of study than men, and are prepared to enroll in institutions and fields of study that are not necessarily their first choice (Ayalon and Yogev 2000). The Palestinian disadvantage could reflect their inability to pay the high tuition fees charged by many colleges.

To summarize the results so far: the expansion of colleges did not affect the relative share of the university sector and its social selection. Colleges, as a whole, are less selective when it comes to scholastic achievements and this translates into lower selection when referring to parental education. However, in many colleges and extensions of foreign universities tuition fees are higher than those in the veteran universities. Overall, the expansion of colleges increased inequality in attendance between economic strata.

Up to this point, the analysis focused on the distinction between university and college education and on the socioeconomic determinants of their attendance. However, neither the universities nor the colleges are homogenous. Both sectors offer a variety of programs in diverse fields of study. Field of study is a very important dimension of educational differentiation and stratification. In some fields, especially the professions, there is a high degree of selectivity based on scholastic aptitude, and the students are awarded very lucrative credentials. Other fields lead to less rewarding careers and are less attractive to students. As noted by van de Werfhorst (2001) field of study is an important arena where life chances are shaped and socialization takes place. He finds important effects of field-related educational resources on economic attainment.

In the final part of the analysis we asked to what extent did the reform of Israeli higher education alter the stratification of access to different categories of fields of study. Earlier, we saw that most fields of study expanded during the 90s. As noted, private colleges specialize in the more attractive fields of study and cater to students who cannot meet the admission requirements of the universities but can afford higher tuition fees. Regional public colleges offer more diverse programs but usually try to include in their menu some programs in attractive fields. So the question is, how did the expansion of colleges affect access to higher education in the more selective areas of study?

We do not have enough cases to thoroughly compare the correlates of attending specific fields of study, but we are able to distinguish between selective and non-selective fields. The classification of fields by selectivity is shown in the Appendix. In Table 4 we model attendance of four combinations of institute and field: (i) a selective field in a university; (ii) a selective field in a college; (iii) a non-selective field in a college, and (iv) a non-selective field in a university. The model is estimated as a multinomial logit regression with the last of the four categories as reference. By contrast with the earlier models, we did not control for age because there was no reason to expect that there would be age differences in the rate of entering different institutions and fields of study.

Column 1 presents effects on the log odds of entering a college in a selective field of study rather than entering a university in a non-selective field. This part of the model evaluates the extent to which colleges provide students with an opportunity to upgrade fields of study. The results show that between 1985 and 2000 the odds of upgrading

increased by about 15 percent a year. Upgrading is more prevalent among men than among women, and among Jews than among Palestinians.

Inspecting Columns 1 and 2 together, we see that the odds of attending a college rather than a university are negatively related to parental education. However, upgrading is much more likely in the affluent strata whereas attending a less selective field in a college, rather than in a university, is not related to economic condition. This finding means that colleges provide the lower educational strata an alternative to the selective universities but only the affluent classes can use them to attend highly desirable fields of study.

Summary and Discussion

To summarize, during the 80s and 90s Israeli higher education was transformed from a small, centralized and rather homogenous system centered around six research universities, to a large and diverse one consisting of scores of institutions of diverse types. The number of students tripled and the odds of attending higher education grew by 50 percent. The veteran universities were not affected by this change to any large extent. Their level of social selection remained quite stable and they grew just enough to accommodate demographic growth. This is congruent with Neave's (2000) contention that the establishment of new tiers of higher education does not in itself guarantee competition with the veteran ones.

The added increase in attendance was taken up by the new second-tier system of private and public colleges. As a whole, the colleges are less selective on scholastic achievement and their expansion reduced inequalities between strata defined by parental education. However, the privatization of higher education through the formation and rapid expansion of private colleges increased inequality between economic strata in access. More importantly, it increased inequality in access to the more lucrative fields of study. As in many other national settings, Israeli private colleges market programs in lucrative fields by lowering admissions criteria while charging high tuition fees. The overall result of the reform was not just a persistence of inequality between social strata as predicted by MMI, but also a change in the stratification process. Previously, stratification centered primarily on scholastic achievement. The matriculation diploma

was the major mechanism of intergenerational reproduction of educational and social inequality. Economic circumstances operated via their effects on scholastic achievement. Now, stratification is more pluralistic than before. Success can be transmitted either via the meritocratic avenue or through alternative routes for the affluent. For the affluent strata, the second-tier system provides a second chance to gain social success whereas for the less affluent it is a second-rate second-tier system offering access to fields of study leading to the lower echelons of the non-manual classes.

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Appendix: Selective Programs of Study

1. Computer Science
2. Architecture
3. Engineering
4. Medicine
5. Law
6. Economics
7. Accounting
8. Management
9. Communication
10. Psychology

All other programs were coded as non-selective programs of study.

Table 1: Descriptive Statistics for Variables Employed in the Analysis

Variables	Units of Analysis (Weighted)			
	(1) **Person-Years**		**(2)** **Respondents**	
	Mean **(S.D.)**	**%**	**Mean** **(S.D.)**	**%**
Attended Tertiary Education		4.4		49.0
Of Which University		2.3		26.0
College		2.1		23.0
Male		50.0		50.0
Ethnicity				
Ashkenazim		32.7		43.6
Middle-East		21.0		18.8
Magreb		28.4		23.0
Palestinian		17.4		14.6
Parental Education Missing		36.8		26.7
Parental Education	10.3 (3.6)		11.1 (3.3)	
Economic Condition at Age 16	2.9 (1.0)		3.2 (1.1)	
Year	93.7 (4.6)			
Age	28.4 (6.3)		34.0 (6.2)	

Table 2: Parameter Estimates of Best Fitting Binary Logit Models

| Independent Variables	(1) Attending University B		Exp (B)	(2) Attending any Higher Education B		Exp (B)
Male	-4.40	*	0.01	-2.04	*	0.13
Year	0.01		1.01	0.06	*	1.06
Age	0.91	*	2.49	0.19	*	1.21
Age ^{2}	-0.02	*	0.98	-0.01	*	0.99
Male*Age	0.18	*	1.19	0.07	*	1.07
Parental Education	0.17	*	1.18	0.10	*	1.10
Parental Education Missing	-0.99	*	0.37	-0.85	*	0.43
Ethnicity						
Middle Asia	-0.23		0.79	-0.19		0.83
North Africa	-0.89	*	0.41	-0.56	*	0.57
Palestinian	-1.27	*	0.28	-0.96	*	0.38
Economic Condition at age 16	-0.01		0.99	0.11	*	1.12
Constant	-14.19	*	0.00	-10.06	*	0.00

Table 3: Parameter Estimates of Multinomial Logit Models

Independent Variables	(1) University versus College		(2) College versus Didn't Study	
	B	Exp (B)	B	Exp (B)
Male	-3.16 *	0.04	-1.32 *	0.27
Year	-0.10 *	0.91	0.11 *	1.12
Age	0.83 *	2.28	0.09	1.09
Age ^{2}	-0.02 *	0.98	0.00	1.00
Male*Age	0.14 *	1.15	0.04	1.04
Parental Education	0.15 *	1.16	0.02	1.02
Parental Education Missing	-0.34	0.71	-0.66 *	0.52
Ethnicity				
Middle Asia	-0.11	0.89	-0.13	0.88
North Africa	-0.62 *	0.54	-0.29	0.75
Palestinian	-0.50	0.61	-0.79 *	0.45
Economic Condition at age 16	-0.23 *	0.80	0.22 *	1.25
Constant	-0.46		-14.05 *	

Table 4: Parameter Estimates of Multinomial Logit Models of Institution and Field of Study

Independent Variables	(1) Attending a Selective Field in a College Rather than a non-Selective Field in a University				(2) Attending a non-Selective Field in a College Rather than in a University			
	B		Exp (B)		B		Exp (B)	
Male	1.17	*	3.22		-0.39		0.68	
Year	0.14	*	1.15		0.04		1.04	
Parental Education	-0.13	*	0.88		-0.17	*	0.85	
Parental Education Missing	0.85	*	2.35		0.60		1.82	
Ethnicity								
Middle Asia	0.27		1.31		-0.05		0.96	
North Africa	0.91	*	2.48		0.60		1.83	
Palestinian	-1.48		0.23		0.50		1.64	
Economic Condition at age 16	0.44	*	1.56		0.12		1.13	
Constant	-14.00	*			-1.90			

**Figure 1: Institutions For Higher Education, 1990 - 2000**
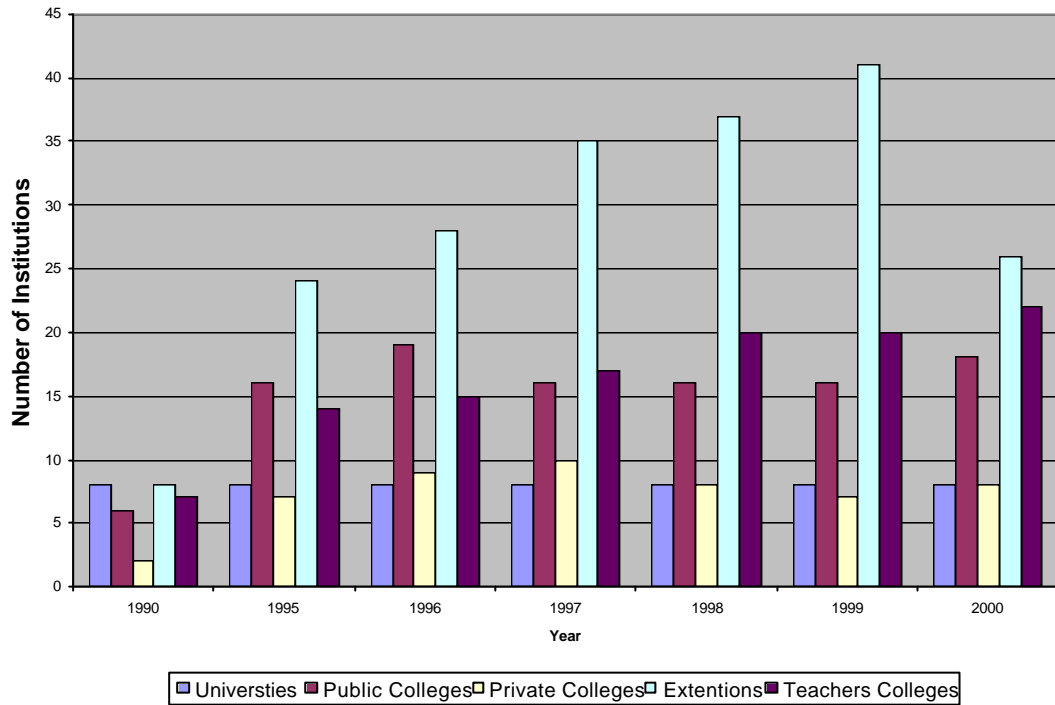
SOURCE: A survey of all institutions operating in Israel during the 90s (Tamir, in preparation).

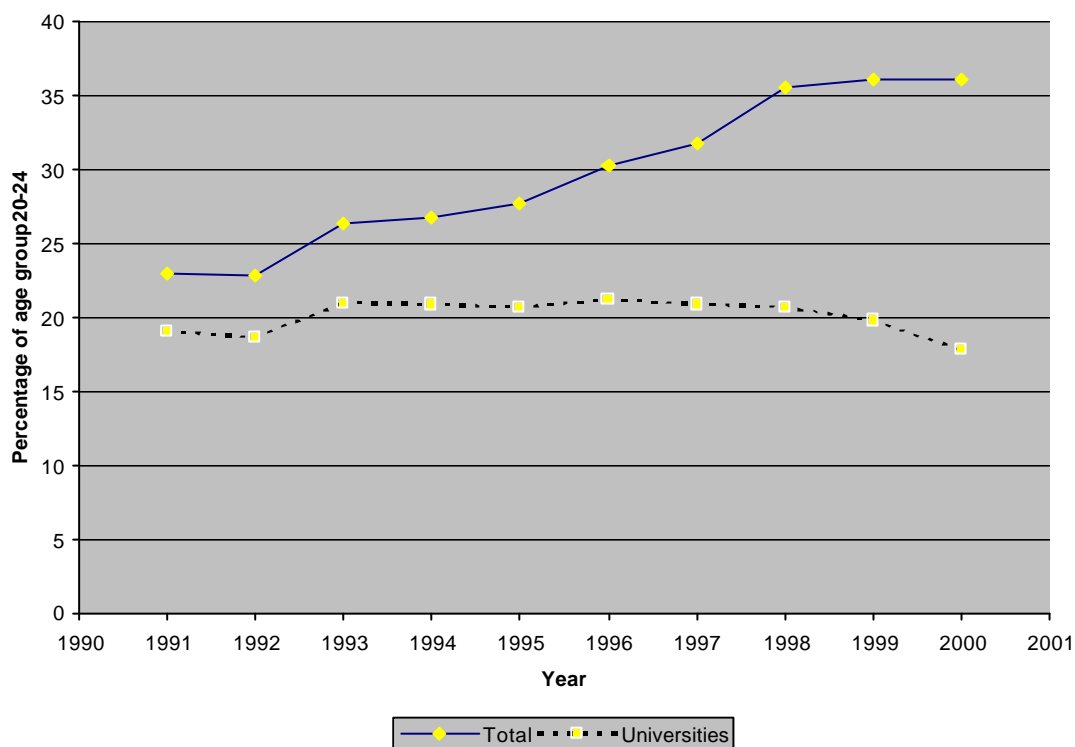**Figure 2: The Number of Colleges and Universities Offering Programs by Broad Areas and Year.**
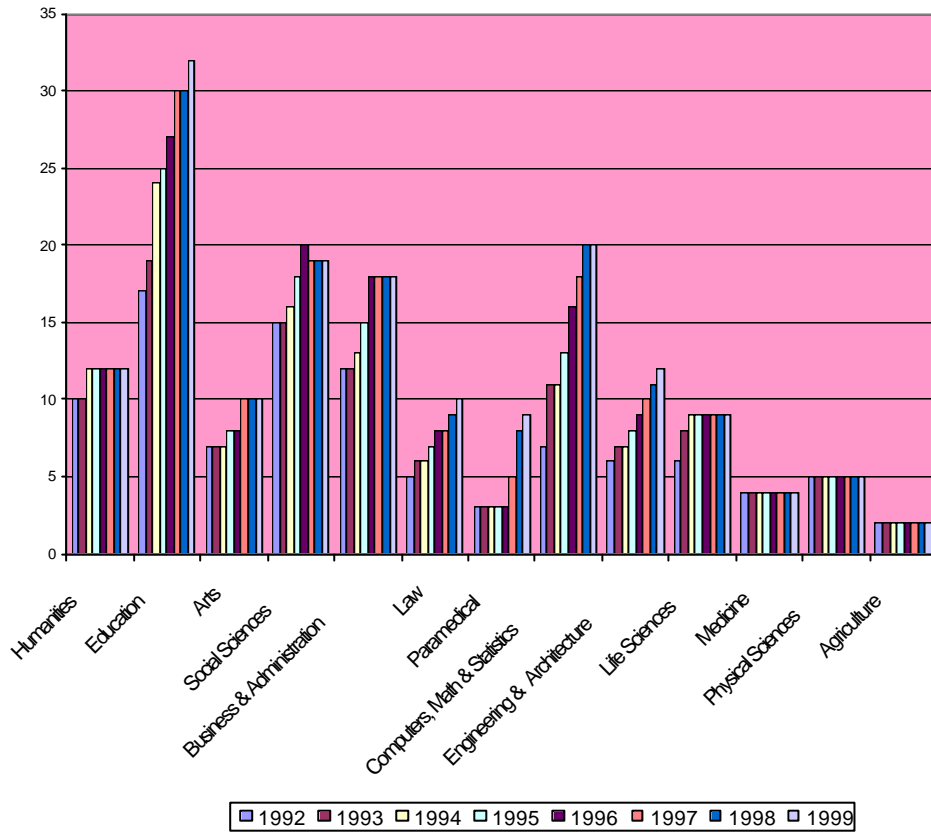
SOURCE: A survey of all institutions operating in Israel during the 90s (Tamir, in preparation)

Figure 3: Change in the Distribution of Entering Undergraduate Students by Type of Institution, 1986-2000.
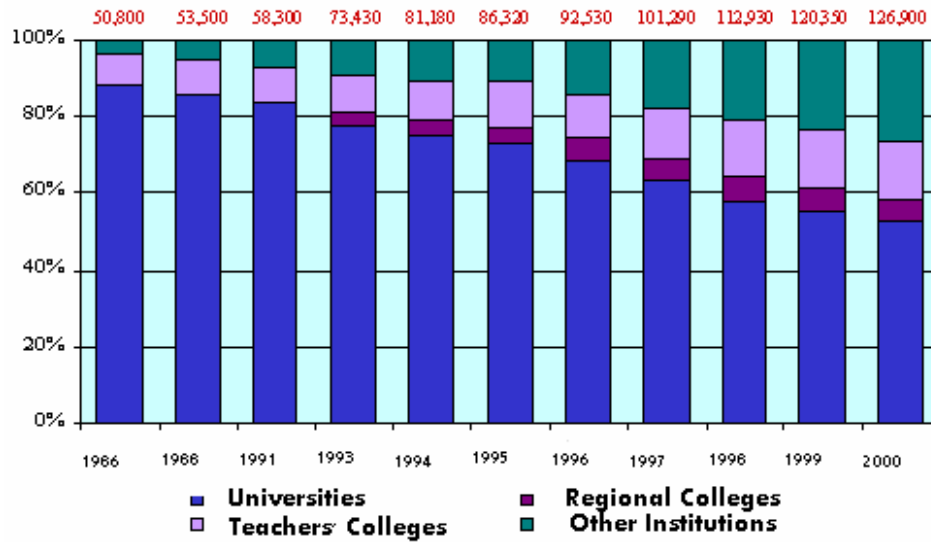
Figure 4: Gross Enrollment Ratio in Israeli Higher Education and in Universities, 1990-2000