The Earnings and Human Capital of American Jews

Author(s): Barry R. Chiswick

Source: *The Journal of Human Resources*, Summer, 1983, Vol. 18, No. 3 (Summer, 1983), pp. 313–336

Published by: University of Wisconsin Press

Stable URL: https://www.jstor.org/stable/145204

THE EARNINGS AND HUMAN CAPITAL OF AMERICAN JEWS*

BARRY R. CHISWICK

ABSTRACT

This paper analyzes the earnings and returns from human capital investments of second-generation American Jews. Compared with non-Jews, Jewish men have 16 percent higher earnings (other things the same), a 20 percent higher rate of return from schooling, and a steeper experience-earnings profile. These patterns persist even after controlling for occupation, self-employment status, and geographic concentration in the New York area. There are no systematic differences among Jews by parents' country of birth. The findings suggest that American Jews are more productive in creating and using human capital, and that this has encouraged greater investments in human capital.

There was a time, not long ago, when research in the United States on discrimination and group differences in economic outcomes, such as earnings and occupational status, focused nearly exclusively on black-white comparisons. It was soon realized, however, that there were important policy concerns for other disadvantaged minority groups, such as Hispanics, and that additional insights regarding the black-white comparison could be obtained from studies of the progress of other racial and ethnic minorities. Although some identifiable racial and ethnic minorities fare less well in the U.S. economy than the majority white population, others seem to do as well or even better in terms of educational attainment, occupational status, and earnings. While the former includes blacks, Mexican-Americans, Puerto Ricans, American Indians, and Filipinos, the latter appears to include Chinese, Japanese, and Jews.

Although data on Jews are limited because the U.S. government generally does not ask questions on religion in its various surveys and censuses, casual impressions and the findings of privately collected data suggest that Jews have achieved a high level of education and high labor market earnings (see, for example, [14, 15, 16]). The higher levels of education and earnings have apparently been achieved in spite of discrimination against Jews in access to higher education and in the labor market [1, pp. 170–71; 12, 13, 17, 24]. This paper is concerned with an analysis of the schooling and earnings of American Jews. Its findings shed some light on the nature of ethnic group differences in economic success, and the impact of racial and religious discrimination.

HYPOTHESES

It is sometimes suggested that the high level of education and the higher earnings of Jews are derived from a cultural bias in favor of schooling. The implication is that Jews have a "taste" or consumption preference for schooling, and they therefore overinvest in comparison with non-Jews.[1]

It is also sometimes suggested that the persecutions of Jews have made them feel insecure regarding nonhuman assets which can be easily expropriated (for example, land) and that this discrimination has encouraged Jews to favor more portable and inalienable investments such as human capital.[2] This hypothesis suggests that, other things the same, Jews invest relatively more in schooling, and less in other assets, and have greater labor market earnings.

These hypotheses can be incorporated into a supply and demand model for funds for investment in schooling [5] (see Figure 1). The demand for investment funds is expressed as a function of the marginal internal rate of return. Its height is greater the higher the level of ability, and its negative slope implies that there are eventually decreasing marginal internal rates of

---

1 For example, in their discussions of the high level of education of native-born Jews, Kessler-Harris and Yans-McLaughlin [18] wrote: "Religious tradition and community approval encouraged the Jew in America to invest in education and correspondingly to increase his upward mobility. No other group had this advantage.... Jews came to America with a tradition of such sacrifice" (p. 120). And, "When choices had to be made, such groups as Italians, Irish and Poles would sacrifice the educational interests of their young, withdrawing them from school, sending them to work, and absorbing their earnings. Such decisions increased present earnings at the expense of future skills. Jews do not seem to have made similar compromises" (p. 114).

2 Although human capital is embodied in the person, it is not at all obvious that this form of capital is always more transferable than nonhuman assets. Transferability and liquidity would be more relevant than merely the portability of assets. For example, compare the transferability of legal training with that of diamonds. For an exchange on this point, see Brenner and Kiefer [7] and Ayal and Chiswick [2].
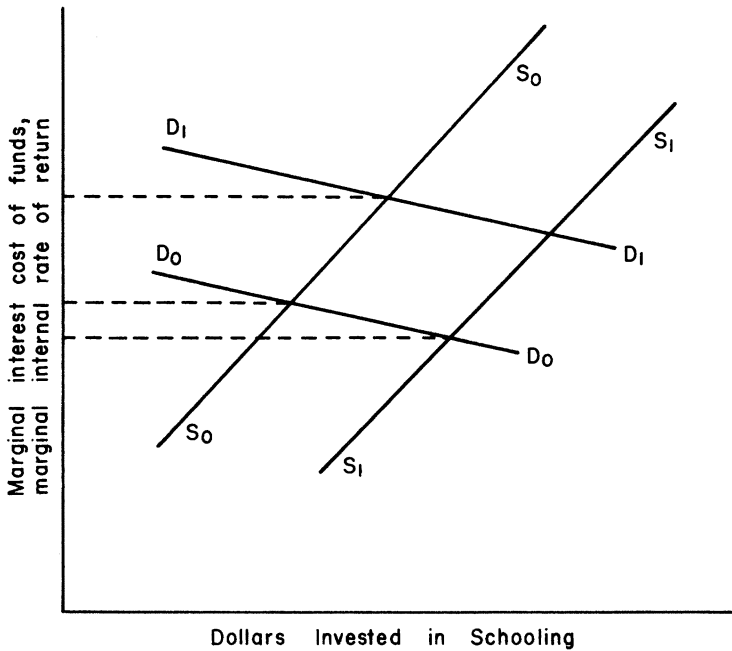
Dollars Invested in Schooling

FIGURE 1

SCHEMATIC REPRESENTATION OF SUPPLY AND DEMAND
FOR FUNDS FOR INVESTMENT IN SCHOOLING

return [6]. The supply of investment funds is expressed as a function of the marginal interest cost of funds (discount rate) and is upward sloping as larger investments require the tapping of more costly sources. The height of the supply curve is inversely related to wealth and access to the capital market.

The "taste" and "discrimination" hypotheses assume that Jews and non-Jews have the same demand schedule (marginal money rate of return schedule) for funds for investment in schooling ($D_0 D_0$ in Figure 1). However, because of either tastes for schooling or concern for highly transferable or mobile investments, Jews will supply more funds for investment in schooling at the same money interest cost and will supply fewer funds for investment in physical capital. That is, in Figure 1, the supply of funds curve is $S_1 S_1$ for Jews and $S_0 S_0$ for non-Jews. These hypotheses are consistent with the higher level of schooling and higher earnings of Jews. They also predict a lower marginal and average rate of return on investments in schooling.

An alternative hypothesis is that Jews have a higher marginal money rate of return schedule for investments in schooling. That is, because of some aspect of their culture, Jews either acquire more units of schooling from a given dollar investment, or are more efficient (effective) in converting school-

ing into earnings.[3] This is represented in Figure 1 by the same supply schedule for funds (say, S_0S_0) but a demand curve D_1D_1 for Jews and D_0D_0 for non-Jews. The "productivity" hypothesis also predicts higher levels of schooling and earnings for Jews, but in contrast to the "taste" and "discrimination" hypotheses, it predicts higher marginal and average rates of return from schooling investments. Although the hypotheses are not necessarily mutually inconsistent, comparisons of rates of return from schooling between Jews and non-Jews will indicate whether the productivity hypothesis is stronger than the combined effects of the "taste" and "discrimination" hypotheses.

DATA FOR ANALYSES ON JEWS

There are three basic requirements for a data file to study the earnings and human capital of American Jews. The data file must include a means of identifying Jews, include a sample of non-Jews responding to the same questionnaire, and include a sufficiently large sample of both Jews and non-Jews.

The U.S. Bureau of the Census has not asked questions on religion in its various censuses and surveys.[4] As Jews are a small proportion of the population (about 2.5 percent), privately collected data sets typically have very small samples of Jews and/or do not include relevant questions for this analysis. Surveys limited to Jews do not include observations on non-Jews, thereby making it difficult, if not impossible, to make comparisons with non-Jews from other data sources.[5]

Thus, there are apparently no data files for the United States with relevant variables that satisfy all three requirements. This led to the use of an indirect method for identifying Jews in the 1970 Census of Population. The Census data satisfy the other requirements of parallel questions on non-Jews and large sample sizes.

The questionnaire administered to 15 percent of the households in the 1970 Census of Population asked the person's nativity, the parents' nativity, and "mother tongue." A person has a non-English mother tongue if there

---

3 In a pre-World War I study of Jews, the author commented: "In the struggle for life, besides intellectual gifts, the industry, versatility, and powers of adaptation of the Jew stand him in good stead. . . . Appreciation of the value of learning and study is a tradition among Jews to an extent unequalled perhaps by any other people." Ruppin [23].

4 Apparently the only exception was the March 1957 Supplement to the Current Population Survey. The Supplement asked the respondent's religion, but not the respondent's nativity or parents' nativity. A Public Use Sample (microdata file) has not been made available for this survey. The data that have been released by the Census Bureau from this survey are discussed below. The ethnicity questions recently adopted by the Census Bureau do not permit the identification of religiously based ethnic groups, such as Jews.

5 This is, for example, a limitation on the use of the 1970/71 National Jewish Population Study. In addition, although the survey asked family income, it did not ask the income or earnings of individual members of the family. See Massarik and Chenkin [20].

was a language *other than or in addition to English spoken in the home when the person was a child.* The question does not refer to the language the person currently speaks. The respondent was asked to identify the mother tongue. Persons who reported Yiddish, Hebrew, or Ladino (the language of Sephardic Jews) are presumably nearly exclusively Jewish, while some Jews will have reported English or some other language. Although the language question identifies only a subset of Jews, these individuals are likely to be the result of an endogamous marriage (both parents Jewish), and to have grown up in a Jewish religious or cultural environment.[6]

Adult Jews in the labor force in 1970 were predominantly second-generation Americans—that is, native-born Americans but with one or both parents foreign born.[7] Non-Jews, on the other hand, are predominantly third- and higher-generation Americans. Earnings differ by immigrant generation, and our objective is to consider the Jewish experience in the U.S. Therefore the analysis using 1970 Census data is limited to second-generation Americans—that is, to adult white native-born men with one or both parents foreign born. If the analysis in this study did not control for immigrant generation among the native born, the earnings advantage of Jews would be even greater than reported below.[8]

The restriction of the data to second-generation Americans reduces the extent of error in using information on "mother tongue" to identify Jews. As Jews are about 2.5 percent of the adult population, they are 10.5 percent of second-generation Americans $[(0.025)(.63) \div (.15) = .105]$. Among second-generation white men the mother tongue approach identified 6.1 percent as Jewish. Thus, the mother tongue procedure identifies about 60 percent of second-generation American Jews in the 1970 Census data.

The procedure could overestimate the earnings advantage of Jews if those with a Jewish mother tongue have higher earnings than Jews with other mother tongues, and it would understate it if the reverse were the situation. It is not possible to test this hypothesis directly, although it is shown below

---

6 According to the 1970 National Jewish Population Study, 95 percent of the heads of households in which there was at least one Jewish person reported that all four grandparents were Jewish. Of these household heads, 95 percent were born Jewish and are currently Jewish, 1 percent were born Jewish but are not currently Jewish, and 4 percent were not born Jewish. See Massarik [19].

7 The National Jewish Population Study found that 14 percent of Jewish household heads aged 25 to 64 were first-generation Americans (foreign born), 63 percent were second-generation, and 23 percent were third- and higher-generation Americans (native born and both parents native born). (Massarik and Chenkin [20, Table 4, p. 276].) Among all white men aged 25 to 64 in 1970, 5 percent were foreign born, 18 percent second-generation, and 77 percent third- and higher-generation Americans. (U.S. Bureau of the Census, *1970 Census of Population*, 15 percent questionnaire.)

8 Second-generation white male Americans earn about 5 percent more than those with native-born parents, other things the same. (See Chiswick [10].)

that among those identified as Jewish there are no significant differences in earnings, ceteris paribus, between those with a Yiddish mother tongue and those who reported Hebrew or Ladino, and there are no significant differences among second-generation American Jews by parent's country of birth (see section below on Differences Among Jews). If there are no systematic differences in earnings patterns among Jews by mother tongue (whether a Jewish mother tongue or another), the statistical procedure underestimates the true Jewish–non-Jewish differences by inadvertently including some Jews in the non-Jewish category. Overall, this bias is likely to be small as Jews are a small minority, even among second-generation Americans. If approximately 10.5 percent of second-generation American men are Jews and 6.1 percent are identified as Jews, then unidentified Jews are less than 5 percent of the non-Jewish sample.

Thus, while the mother tongue procedure would be inappropriate for estimating the size of the Jewish population, it appears to be the most appropriate technique available for studying the characteristics and regression coefficients of Jews in comparison with non-Jews. Furthermore, the richness of the variables and large sample size of the 1970 Census provide opportunities for testing the robustness of the findings. The empirical analysis is therefore based on a one-in-a-hundred sample of the population from the 1970 Census of Population, 15 percent questionnaire. The data are for adult (age 25 to 64) native-born white men with one or both parents foreign born, who worked and had nonzero earnings (wage, salary, and self-employment income) in 1969. The sample had 3,719 observations for Jews and 57,351 observations for non-Jews.

THE ESTIMATING PROCEDURE

The analysis of earnings and comparison of rates of return from human capital investments is done through the use of the now standard statistical technique, the human capital earnings function. The natural logarithm of earnings is regressed on years of schooling (*EDUC*), years of labor market experience (years since leaving school, *T*) and experience squared, among other variables (see Table 1, List of Variables). The partial effects on the logarithm of earnings of the schooling and experience variables measure the intensities of and rates of return on these investments. The statistical control variables include geographic area (urban/rural, South/non-South) and marital status.

Regressions are computed for the pooled sample of Jews and non-Jews, and separately for Jews for the country as a whole. In the pooled regression, dichotomous variables for the parents' country of birth are included for the non-Jews, with the British Isles treated as the benchmark (excluded category).[9] Regression equations are also reported, controlling for weeks worked

---

9 Parent's country of birth is the father's country if he was foreign born; otherwise it is the mother's country.

TABLE 1
LIST OF VARIABLES

Variables	Code
Dependent variable:	
Natural logarithm of earnings (wage, salary, and self-employment income) in 1969	LnY
Explanatory variables:	
Years of schooling	$EDUC$
Years of potential labor market experience (age − schooling − 5) and its square	$T, TSQR$
Size of place (= 1 for living in a rural area, 0 for an urban area)	$RURALEQ1$
Region of the country (= 1 for South, 0 for other states)	$SOUTHEQ1$
Marital status (= 0 if married spouse present, = 1 if other marital status)	$NOTMSP$
Jewish (= 1 if "mother tongue" is Yiddish, Hebrew, or Ladino, = 0 for other mother tongue)[a]	$JEWISH$
Country of origin[b]—(dichotomous variables for parent's country of birth for those with Jewish = 0)	
British Isles (benchmark)	$BRIT$
Western Europe	$WEURP$
Southern Europe	$SOEURP$
Central Europe	$CENEURP$
USSR	$RUSSIA$
Balkans	$BALKANS$
Canada, Australia, New Zealand	$CANAUNZ$
Mexico	$MEXICO$
Other Latin America and Caribbean area	OLA
Asia and Africa	$ASAF$

a "Mother tongue" is the language other than or in addition to English spoken in the home when the respondent was a child. If no other language was spoken, English is the mother tongue.

b Country of birth of the father if he was foreign born; otherwise it is the mother's country of birth.

in the year, occupation, and self-employment status. About half of the Jews live in metropolitan areas in New York, New Jersey, and Connecticut. The comparative analysis is also reported for persons living in metropolitan areas in these states (the Tri-State Area Analysis) to control for residence in this area. Differences among Jews are studied by considering whether earnings vary systematically among the three Jewish mother tongues or by parent's country of birth. The cross-tabulation of income by education by religion released by the U.S. Bureau of the Census from the March 1957 Current Population Survey is also discussed.

TABLE 2

MEANS AND STANDARD DEVIATIONS FOR NATIVE-BORN
WHITE MEN WITH FOREIGN-BORN PARENTS, 1970[a]

	Total		Jewish[b]		Non-Jewish	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Earnings ($)	10,781.15	8,577.37	16,175.58	13,694.42	10,431.30	33.50
Weeks Worked	48.50	7.40	49.14	6.14	48.46	7.47
Age	47.31	9.92	49.22	9.35	47.19	9.95
Education (years)	11.80	3.32	13.98	3.26	11.66	3.28
Experience (years)	30.51	11.20	30.24	10.68	30.53	11.23
Rural (%)	15.77	36.45	2.23	14.77	16.70	37.30
South (%)	9.73	29.64	10.46	30.61	9.70	24.60
NOTMSP (%)[c]	13.96	34.66	9.68	29.57	14.20	34.90

Note: Number of observations: All, 61,070; Jewish, 3,719; non-Jews, 57,351.
Source: 1970 Census of Population, 15 percent questionnaire, 1/100 sample.
a Men aged 25–64 who worked in 1969, had nonzero earnings, and were not enrolled in school.
b Persons who reported Yiddish, Ladino, or Hebrew as their "mother tongue," where mother tongue is the language other than or in addition to English spoken in the home when the person was a child.
c Marital status is other than "married, spouse present."

REGRESSION ANALYSIS—UNITED STATES

Table 2 reports descriptive statistics on the relevant variables. The Jews had nearly 50 percent higher earnings (wage, salary, and self-employment income) in 1969—over $16,000 compared with under $10,500 for the non-Jews. The Jews are two years older, and have two additional years of schooling (14.0 years compared with 11.7 years), so they have the same number of years of labor market experience. The regression equations are reported in Table 3, for the pooled data (columns 1 to 3) and separately for Jews (column 4).

Earnings Differences by Parent's Country of Birth

The regression equation in Table 3, column 1, indicates that, other things the same, Jews have 16 percent higher annual earnings than non-Jews of British origin. The higher earnings of Jews—that is, men with Yiddish, Hebrew, or Ladino as their mother tongue—is not reflecting a general effect of a non-English mother tongue. Other things the same (including parent's country of birth), among second-generation white men in the 1970 Census, those with a non-English mother tongue had a statistically significant 2 percent lower earnings [10].

Jews appear to be the only group with earnings significantly greater than the benchmark, British non-Jews. For six country categories, the earnings differential from the British is two percentage points or less, and the absolute values of the *t*-ratios are less than 1.4. These are Western Europe, Southern Europe, Central Europe, the Balkans, Latin America (excluding Mexico but including the Caribbean), and Asia/Africa (primarily North Africa and the Middle East).[10] The coefficient is significant for three other countries, Russia (6 percent higher earnings), Mexico (coefficient of −.22 or 20 percent lower earnings), and Canada (4 percent lower earnings). However, the significant Russian coefficient is spurious, and the significant Canadian coefficient appears to be due to those of French-Canadian origin.

Jews were a small minority of immigrants from each of the countries of origin in the pre-World War II period, with the exception of Russia. In each of the decades from the 1880s to World War II, Jews constituted a large majority of immigrants from Russia [22]. In the data under study, the mother tongue procedure identified 6.5 percent of the sample as Russian (non-Jewish) and 6.1 percent were identified as Jewish, of whom about 60 percent (3.7 percentage points) are of Russian-Jewish parentage. If the error in identifying Jews were independent of the country of origin, about 60 percent of the Russian Jews were correctly identified. This implies that of

---

10   This suggests that the higher earnings of Jews does not arise from their parents having been part of the New Immigration Stream (Southern and Eastern Europe) rather than the Old Immigration Stream (Northwestern Europe).

TABLE 3
REGRESSION ANALYSIS OF EARNINGS FOR NATIVE-BORN
JEWISH AND NON-JEWISH WHITE MEN WITH FOREIGN-BORN PARENTS,
1970[a]

	Total			Jewish[b]
	(1)	(2)	(3)	(4)
EDUC	0.06898	0.06808	0.06807	0.08034
	(71.25)	(69.08)	(68.51)	(19.03)
T	0.02967	0.02969	0.02907	0.03966
	(24.49)	(27.51)	(26.14)	(7.95)
TSQR	−0.00053	−0.00053	−0.00052	−0.00070
	(−29.06)	(−29.10)	(−27.76)	(−7.99)
*RURALEQ*1	−0.16050	−0.16140	−0.16142	−0.06942
	(−22.51)	(−22.62)	(−22.63)	(−0.90)
SOUTHEQ1	−0.06334	−0.06344	−0.06341	0.05852
	(−7.24)	(−7.25)	(−7.25)	(1.57)
NOTMSP	−0.39729	−0.39742	−0.39732	−0.42111
	(−53.89)	(−53.92)	(−53.90)	(−10.84)
WEURP	−0.00884	−0.00948	−0.00945	c
	(−0.95)	(−1.02)	(−1.02)	
SOEURP	−0.01072	−0.01195	−0.01174	c
	(−1.12)	(−1.25)	(−1.23)	
CEURP	−0.00165	−0.00282	−0.00258	c
	(−0.16)	(−0.28)	(−0.25)	
RUSSIA	0.05813	0.05833	0.05852	c
	(4.63)	(4.65)	(4.67)	
BALKANS	0.02054	0.02033	0.02058	c
	(1.34)	(1.32)	(1.34)	
CANAUNZ	−0.03917	−0.03969	−0.03994	c
	(−3.33)	(−3.37)	(−3.39)	
MEXICO	−0.21548	−0.21874	−0.21887	c
	(−14.68)	(−14.89)	(−14.88)	
OLA	−0.00552	−0.00611	−0.00658	c
	(−0.14)	(−0.16)	(−0.17)	
ASAF	−0.00518	−0.00481	−0.00493	c
	(−0.22)	(−0.20)	(−0.21)	
JEWISH	0.15977	−0.02851	−0.15747	c
	(12.41)	(−0.60)	(−1.75)	
JEWEDUC	c	0.1355	0.01309	c
		(4.15)	(3.32)	
(JEWISH)T	c	c	0.01074	c
			(2.33)	
(JEWISH)TSQR	c	c	−0.00018	c
			(−2.26)	
Constant	3.39264	3.40410	3.41232	3.25750

TABLE 3 (*Continued*)

	Total			Jewish[b]
	(1)	(2)	(3)	(4)
Number of observations	61,070	61,070	61,070	3,719
R	0.46139	0.46163	0.46170	0.42183
$\bar{R}^2$	0.21267	0.21288	0.21293	0.17661
Standard error	0.62706	0.62698	0.62696	0.69320

Note: *t*-ratios are in parentheses.
Source: 1970 Census of Population, 15 percent questionnaire, 1/100 sample.
a Men aged 25–64 who worked in 1969, had nonzero earnings, and were not enrolled in school.
b Jews are defined as persons who reported Yiddish, Hebrew, or Ladino as their "mother tongue," that is, the language other than or in addition to English spoken in the home when the person was a child.
c Variables not entered.

those identified as Russian, 2.4 percentage points (37 percent) are really Jews without a Jewish mother tongue.[11] If nonidentified Russian Jews have the same earnings differential as those identified as Jewish (16 percent higher earnings), then the true earnings differential for Russian non-Jews is zero percent (if (16.0)(.37) + X(.63) = 5.8, then X = 0.2). Thus, the data are consistent with the hypothesis that the earnings differential for non-Jews of Russian parentage is zero, and that the positive coefficient observed in the regression equation is due to nonidentified Russian Jews.

The earnings of men with French-Canadian parents differ from those of other Canadians.[12] With the British Isles as the benchmark, the coefficient for French-Canadians is about −7.5 percent (*t* = −4.1), while the coefficient for Other Canadians is about −2.6 percent (*t* = −2.0).[13] The statistically significant five percentage point difference between the French and Other Canadians is somewhat larger than the two percentage point earnings disadvantage associated with a non-English mother tongue among all second-

---

11 If all Jews could be identified, Russian Jews would be 6.1 percent of the sample [(3.7) + (.6) = 6.1] instead of the measured 3.7 percent. That is, 2.4 percentage points are nonidentified Russian Jews. Then 37 percent of the Russian sample are nonidentified Jews [(2.4) ÷ (6.5) = .37].

12 Of the 4,941 observations in the *CANAUNZ* category, 28 percent were of Canadian parentage and had a French mother tongue, and are referred to as French-Canadians. The remainder are referred to as Other Canadians since only 1 percent of the *CANAUNZ* category reported Australia, New Zealand, and the Pacific Islands as their parent's country of birth.

13 The coefficient for Other Canadians will be biased upward in absolute value to the extent that the group includes French-Canadians who did not report French as their mother tongue.

generation white male Americans. The French-Canadians, however, live disproportionately in New England (81 percent), which is a low earnings area of the non-South. Controlling for residence in the six New England states, the French-Canadians have an insignificant 2.8 percent lower earnings than other Canadians and a statistically significant 4.9 percent lower earnings than those of British origin. The Other Canadian-British differential is small (2.1 percent) and not significant ($t = 1.6$). Thus, the earnings disadvantage of native-born men of Canadian parentage appears to be limited to those of French-Canadian origin, in part because of their disproportionate residence in New England.

In summary, among second-generation white male Americans, only Jews appear to have significantly higher earnings than those of British origin, other things the same. Only those of Mexican origin and, to a smaller extent, French-Canadian origin have a statistically significant earnings disadvantage compared with those from the British Isles.

The Effects of Schooling and Experience

The issue, however, is not simply the higher earnings of Jews, other things the same, but whether they have a greater return from their investments in human capital. An extra year of schooling raises earnings among non-Jews by 6.8 percent, while among Jews it raises earnings by 8.2 percent, and the difference is highly statistically significant (Table 3, columns 2 or 3).[14] Annual earnings are about the same, other things the same, for Jews and non-Jews with two years of schooling, and the gap widens by about 1.4 percentage points for each additional year of schooling.

The coefficient of the schooling variable can be interpreted as the product of the rate of return from schooling (r) and the fraction of potential earnings invested in a year of schooling.[15] There is no compelling reason for believing that Jews make greater dollar investments of 20 percent or more per year of schooling *relative* to their potential earnings. Indeed, the higher earnings of Jews for nearly all schooling levels means that the same direct costs of schooling (tuition, school supplies, etc.) imply a lower investment per year of schooling relative to potential earnings. The implication is that Jews receive a higher rate of return from schooling.

---

14 The partial effect of schooling on earnings is 8.0 percent in the equation limited to Jews (Table 3, column 4).

15 If b_1 is the regression slope coefficient for years of schooling, r is the rate of return from schooling, and k is the average ratio of investment (forgone earnings plus direct costs) to full-year potential earnings during the training period, then $b_1 = rk$. (See Becker and Chiswick [5].) Using 1940 Census data, Becker estimated that for college education in the U.S., k is approximately unity. (See Becker [3, pp. 74–75].) Then the coefficient of schooling in the human capital earnings function is approximately the rate of return from schooling.

Labor market experience also has a highly significant larger effect on the earnings of Jews (Table 3, column 3). Evaluated at 10 years of labor market experience, an extra year of experience raises the earnings of non-Jews by 1.9 percent, while among Jews earnings are raised by about 2.6 percent. Evaluated at the mean level of schooling of Jews (14 years), at zero years of experience the earnings of Jews are 2.6 percent greater than those of non-Jews, and the relative earnings gap continues to increase until 30 years of labor market experience (about age 50), after which it starts narrowing.

The steeper experience-earnings profile among Jews could arise from the same rate of return but greater investments in postschool training. Then, if rates of return on schooling and postschool investments are about the same, the experience-earnings profile of Jews would start at a lower level and cross that of non-Jews at about 10 to 15 years of labor market experience [21, pp. 16–17]. Empirically, however, the Jewish experience-earnings profile starts higher and rises more rapidly throughout most of the working life. The implication is that Jews either start working with higher earnings (perhaps because of the higher rate of return from schooling) or that they have a higher rate of return from on-the-job training.

Controlling for Weeks and Hours Worked

The regressions were also computed controlling for the natural logarithm of weeks worked.[16] When this is done, the coefficients of the other explanatory variables measure their effects on weekly earnings. Similar findings emerge. Other things the same, Jews have nearly 15 percent higher weekly earnings than British-origin non-Jews, and among the other groups only those with parents born in Russia have significantly higher earnings (5 percent) than British non-Jews. An extra year of schooling raises the weekly earnings of non-Jews by 6.5 percent and of Jews by 8.3 percent, and the 1.8 percentage point difference is highly significant ($t = 5.23$). Jews have experience-earnings profiles with significantly steeper slopes. Evaluated at 10 years of experience, an extra year of labor market experience raises the weekly earnings of non-Jews by 1.4 percent and of Jews by 2.1 percent. Evaluated at the mean level of schooling of Jews, Jews with no labor market experience have weekly earnings 1.4 percent lower than non-Jews with no experience, they have the same earnings after one year of experience, and Jews have increasingly higher relative earnings for the next 30 years of labor market experience.

---

16   The coefficient of the weeks worked variable, the elasticity of earnings with respect to weeks worked, is 1.27 (standard error 0.048) for Jews. This is significantly greater than unity ($t = 5.6$) and significantly greater than the 1.007 (standard error 0.009) in the pooled data. This difference may arise from a more elastic labor supply curve for Jews or from a smaller amount of seasonal employment. The former is consistent with a hypothesis that Jews are more responsive to economic incentives.

The only data on hours worked in the 1970 Census are the number of hours worked in the reference week, the last week in March 1970. This may be used as a proxy for the average number of hours worked per week in the previous year. The equations were recomputed deleting the small number of observations reporting no hours worked in the reference week and adding the natural logarithm of hours worked to the equation that already includes the weeks worked variable. Although the hours variable is highly significant, these modifications produce virtually no changes in the coefficients and t-ratios of the variables under study.[17] Jews still have higher earnings (15 percent), a larger effect of schooling on earnings (2.0 percentage points), and a steeper experience-earnings profile (by 0.07 percentage points when evaluated at $T = 10$).

REGRESSION ANALYSIS—OCCUPATION AND SELF-EMPLOYMENT

It is sometimes thought that the higher earnings of Jews arises from a greater proportion employed in more highly paid occupations, such as medicine and law. It is also sometimes thought that it arises from the larger proportion who are self-employed. It is not clear that it is appropriate to control for these variables as they may be the mechanism through which Jews obtain higher earnings and rates of return. Statistical testing indicates that although occupation and self-employment status can account for some of the earnings differential, large and statistically significant differences remain even after controlling for these variables.

The occupational distribution of Jews differs from that of the rest of the population. In the data under study, 27 percent of the Jews are in professional occupations, compared with 15 percent of the non-Jews, and the Jews are relatively more represented in medicine and law (Table 4). The Jews are also more likely to be nonfarm managers (27 percent compared with 13 percent) and in sales occupations (20 percent compared with 7 percent). On the other hand, only 18 percent of the Jews compared with 56 percent of the non-Jews are in blue-collar occupations (craft, operatives, transportation, laborers, farmers, service). Jews also are more likely to be self-employed. In these data, 32 percent of the Jews are self-employed compared with 14 percent of the non-Jews (Table 4).

Variables for occupation and self-employment status were added to the regression equations. Using professionals other than those in medicine, law, and college teaching as the benchmark, 12 occupation variables were included

---

17 The only noteworthy change is the decline in the partial effect of the weeks worked variable from 1.27 to 1.14 for Jews and from 1.007 to 0.98 for non-Jews. The Jewish coefficient remains significantly greater than unity ($t = 2.01$).

TABLE 4
OCCUPATIONAL DISTRIBUTION AND SELF-EMPLOYMENT STATUS
OF NATIVE-BORN JEWISH AND NON-JEWISH WHITE MEN
WITH FOREIGH-BORN PARENTS, 1970[a]
(Percentage)

	Total	Jewish	Non-Jewish
1. *Occupational distribution*			
Medicine[b]	1.64	6.10	1.35
Law[c]	0.89	3.58	0.72
College and university teachers	0.59	1.29	0.55
Other professional, technical, and kindred workers	12.91	16.19	12.70
Managers (nonfarm)	14.20	26.51	13.40
Sales	7.80	19.68	7.03
Clerical	8.09	8.31	8.08
Craft	22.54	8.44	23.45
Operatives (except transportation)	11.93	2.90	12.52
Transportation	5.18	3.33	5.30
Laborers (including farm laborers)	5.15	1.08	5.41
Farm managers	2.17	0.16	2.30
Service	6.92	2.42	7.21
Total	100.00	100.00	100.00
2. *Self-employed*	15.22	31.94	14.14

Source: 1970 Census of Population, 15 percent questionnaire, 1/100 sample.
a Men aged 25–64 who worked in 1969, had nonzero earnings, and were not enrolled in school.
b Includes medical doctors, dentists, and related health professionals with doctorate degrees.
c Includes lawyers and judges.

(Table 5). The occupation coefficients are generally statistically significant and of the expected signs and rankings. Those in medicine and law as well as nonfarm managers have significantly higher earnings than other professionals, while sales, clerical, and blue-collar workers have significantly lower earnings (with the exception of Jews in sales). The self-employed have significantly higher earnings, although the effect is small for non-Jews and larger for Jews.[18]

Controlling for occupation and self-employment status reduces the earnings differential by one-third from 16 percent to 10 percent, and reduces the difference in the coefficient of schooling by one-third from 1.3 percentage points to 0.9 percentage points (Table 5). The difference in the partial effect

18 For an analysis of the interpretation of a self-employment variable in a human capital earnings function, see Carmel U. Chiswick [11].

TABLE 5
REGRESSION COEFFICIENTS FOR SELECTED VARIABLES,
ANALYSIS OF EARNINGS FOR NATIVE-BORN JEWISH
AND NON-JEWISH WHITE MEN WITH FOREIGN-BORN PARENTS, 1970[a,b]

	Total			Jewish[b]
	(1)	(2)	(3)	(4)
JEWISH	0.10150	−0.05073	−0.14374	c
	(8.00)	(−1.09)	(−1.64)	
JEWEDUC	c	0.01095	0.00870	0.05055
		(3.41)	(2.25)	(10.11)
(JEWISH)T	c	c	0.01120	0.03781
			(2.50)	(7.79)
(JEWISH)TSQR	c	c	−0.00021	−0.00070
			(−2.64)	(−8.17)
MEDICAL	0.41657	0.41036	0.41136	0.24144
	(19.52)	(19.16)	(19.20)	(4.42)
LAW	0.30339	0.29596	0.29809	0.14498
	(10.97)	(10.67)	(10.74)	(2.20)
COLTEACH	0.04307	0.04036	0.04049	−0.00223
	(1.30)	(1.22)	(1.22)	(−0.00)
MANAGERS	0.13102	0.13153	0.13141	0.15311
	(13.32)	(13.37)	(13.36)	(4.24)
SALES	−0.07596	−0.07389	−0.07402	−0.05629
	(−6.59)	(−6.40)	(−6.41)	(−1.42)
CLERICAL	−0.19429	−0.19337	−0.19337	−0.33311
	(−16.90)	(−16.82)	(−16.82)	(−6.74)
CRAFT	−0.08729	−0.08751	−0.08750	−0.13809
	(−9.10)	(−9.12)	(−9.12)	(−2.75)
OPERTVS	−0.18934	−0.19000	−0.19004	−0.34318
	(−17.14)	(−17.19)	(−17.20)	(−4.71)
TRANSP	−0.22042	−0.22015	−0.21984	−0.36245
	(−16.09)	(−16.07)	(−16.05)	(−5.20)
LABORERS	−0.41383	−0.41491	−0.41505	−0.57133
	(−29.40)	(−29.47)	(−29.48)	(−5.15)
FARMMAN	−0.44871	−0.44988	−0.44988	−0.81224
	(−21.62)	(−21.67)	(−21.67)	(−2.96)
SERVICE	−0.35535	−0.35574	−0.35589	−0.41878
	(−28.54)	(−28.58)	(−28.59)	(−5.39)
SELFEMPL	0.02058	0.02078	0.02031	0.13877
	(2.59)	(2.61)	(2.55)	(5.43)
$\bar{R}^2$	0.25689	0.25702	0.25708	0.24290

Note: Benchmark for the occupational variables is professional and technical
workers, other than medicine, law, and college and university teachers.
Source: 1970 Census of Population, 15 percent questionnaire, 1/100 sample.

TABLE 5 (*Continued*)

a Men aged 25–64 who worked in 1969, had nonzero earnings, and were not enrolled in school.

b Controlling for *NOTMSP, RURALEQ*1, and *SOUTHEQ*1, and in columns (1), (2), and (3) also controlling for *EDUC, T, TSQR,* and parent's country of origin for the non-Jews.

c Variable not entered.

of experience hardly changes when occupation and self-employment status are held constant. Thus, the occupational and self-employment variables may explain one-third of the difference in earnings and one-third of the difference in the effect of schooling on earnings, but large and statistically significant differences remain.[19]

REGRESSION ANALYSIS—TRI-STATE AREA

Jews tend to be geographically concentrated in urban areas in and around New York City. In the 1970 Census sample studied here, 48 percent of the Jews and 20 percent of the non-Jews live in urban areas inside Standard Metropolitan Statistical Areas (SMSAs) in New York State, New Jersey, and Connecticut.[20] To test for location and metropolitan area effects, the regression analysis was also done for persons living in these areas.

Among adult men living in urban parts of SMSAs in the Tri-State area, Jews have higher earnings, over $15,300 compared with less than $11,900 for the non-Jews, and a higher level of schooling (13.8 years compared with 12.2 years). Since the Jews are two years older (49.6 years compared with 47.4 years), they have about the same years of labor market experience.

Patterns similar to those reported above for the country as a whole appear when the regressions are computed for the Tri-State area subsample.[21] Other things the same, Jews have 7.8 percent higher earnings ($t = 3.93$). When a Jewish-education interaction variable is added to the equation, its coefficient implies that Jews have a partial effect of schooling 1.1 percentage points greater ($t = 2.48$) than the 6.7 percent for non-Jews. The coefficients imply that Jews with six years of schooling have the same earnings as non-Jews, but that the relative earnings differential increases by one percentage point for each additional year of schooling.

---

19 Regressions in which the occupation and self-employment variables are entered separately indicate that nearly all of the effect on Jewish–non-Jewish differences are attributable to the occupation variables.

20 It has been estimated that 50 percent of American Jews live in New York, New Jersey, or Connecticut. See Chenkin [8, pp. 307–309].

21 The subsample includes 1,785 observations for Jews and 11,470 observations for non-Jews.

When the interactions of the Jewish and labor market experience variables (T, $TSQR$) are included in the equation, their coefficients are highly significant ($t = 2.25$ and $t = -2.43$, respectively). When evaluated at 10 years of labor market experience, an extra year of experience for non-Jews in the Tri-State area raises earnings by 1.1 percent, but among the Jews it raises earnings by 2.0 percent. Evaluated at the mean level of schooling of Jews (14 years), Jews with no labor market experience have 7 percent lower earnings. Earnings are equal at 5.5 years of labor market experience, and for additional years of experience Jews have higher earnings.

These data suggest that the difference in earnings and rates of return from schooling and labor market experience between Jews and non-Jews are smaller for those living in urban areas of SMSAs in the Tri-State area than when the analysis is done for the country as a whole with urban/rural and South/non-South control variables. The data are still consistent with the hypothesis that earnings and the rates of return from human capital investments are higher for Jews.

MARCH 1957 CURRENT POPULATION SURVEY[22]

The March 1957 Current Population Survey is apparently the only Census Bureau household survey that asked the respondents to identify their religion.[23] The survey consisted of 35,000 households, of which 1,100 were Jewish. Among employed men aged 18 and over, Jews reported a higher median level of schooling: 12.7 years for Jews, 11.7 years for white Protestants, and 11.7 years for Catholics. While the median income in 1956 of urban Jews with zero to seven years of schooling was below that of urban non-Jews, Jews with eight years of schooling had about the same median income as the non-Jews, Jews with 12 years of schooling had higher incomes, and the relative income gap widened with higher levels of schooling (Table 6). These data are consistent with the hypotheses of higher earnings and a higher rate of return from schooling for Jews.

---

22 The data reported here are from the U.S. Bureau of the Census, "Tabulations of Data on the Social and Economic Characteristics of Major Religious Groups, March 1957," unpublished tables, no date. This provides supplementary material to the description of the survey and the socioeconomic data presented in U.S. Bureau of the Census, "Religion Reported by the Civilian Population of the United States, March 1957," *Current Population Reports, Population Characteristics,* P-20, No. 79, February 2, 1958. These sources apparently include the only cross-tabulations of socioeconomic variables by religion from the March 1957 Supplement released by the Census Bureau. No Public Use Sample is available. The survey did not include questions on nativity, parent's nativity, or mother tongue.

23 The 1971 Census of Canada included a question on religion. Canadian Jews have higher earnings and a higher level of schooling than non-Jews. Tomes [25] found that Canadian Jews have a higher coefficient of years of schooling and a steeper experience-earnings profile than other Canadians, but these differences were not statistically significant. However, his sample size for Jews was very small, only 374 observations.

TABLE 6
MEDIAN INCOME IN 1956 OF URBAN MEN
AGE 14 AND OVER BY RELIGION AND EDUCATION,
MARCH 1957

Years of Schooling Completed	Income		
	Jewish	White Protestant	Roman Catholic
0–7	$2,609	$2,812	$2,819
8	3,844	3,712	3,729
9–11	4,672	4,850	4,170
12	4,913	4,684	4,567
13–15	5,026	4,712	4,361
16+	8,041	6,375	5,727

Source: U.S. Bureau of the Census, "Tabulations of Data on the Social and Economic Characteristics of Major Religious Groups, March 1957," unpublished tables, no date, Table 19.

DIFFERENCES AMONG JEWS

In addition to the influences of American society, American Jews are presumably influenced by a mixture of the universal aspects of the Jewish religion and culture and the particular aspects of their upbringing and their parent's country of birth. This section is concerned with whether earnings and rates of return vary systematically between those with a Yiddish and a Hebrew/ Ladino mother tongue, and by parent's country of birth.

In the sample of Jews under study, 96.8 percent reported a Yiddish mother tongue, 3.6 percent reported Hebrew, and 0.03 percent (one observation) reported Ladino (see Table 7). Although always a large majority, the parents of the Yiddish language group are disproportionately born in Europe, particularly Central and Eastern Europe. Using the Yiddish group as the benchmark, a dichotomous Hebrew language variable was added to the equation for Jews and interacted with the schooling and experience variables. The coefficients of the Hebrew language variable and of the interaction variables were never statistically significant separately or as a set (the F-ratio for the added variables did not exceed unity). The earnings of the one Ladino observation did not differ significantly from the predicted value.

The sample of Jews is dominated by those with parents from what is now the USSR, but substantial proportions report other parts of Europe (Table 7). The benchmark for the parent's country of origin analysis is "Other USSR," that is, the USSR excluding the three Baltic republics, and in some runs also excluding those from the Ukraine and Byelorussia.[24] Dichotomous

---

24 In the 1970 Census, the USSR and the United Kingdom are the only countries in which subnational units are separately identified.

TABLE 7

DISTRIBUTION OF PARENT'S COUNTRY OF BIRTH
AND MOTHER TONGUE FOR NATIVE-BORN JEWISH MEN
WITH FOREIGN-BORN PARENTS[a]

Parent's Country of Birth	Distribution by Parents' Country of Birth		Hebrew Mother Tongue (percent)[b]
	Percent	Number	
British Isles	1.2	43	14.0
Western and Southern Europe	8.8	329	6.1
Czechoslovakia and Hungary	1.5	56	1.8
Poland	19.5	726	2.9
Baltic States	4.3	159	2.5
Other USSR	58.9	2,191	3.2
Balkans	4.9	182	2.7
Canada, Australia, and New Zealand	0.2	9	11.1
Latin America	0.1	2	0.0
Asia and Africa	0.6	22	27.2
All countries	100.0	3,719	3.6

Source: 1970 Census of Population, 15 percent questionnaire, 1/100 sample.
a Country of birth is father's country if he was foreign-born; otherwise it is the mother's country.
b Proportion with Hebrew or Ladino rather than Yiddish as the mother tongue. Only one person, from Asia/Africa, reported Ladino.

variables for broad and for narrow classifications of other country categories were added to the Jewish earnings function, and interacted with schooling and experience. The F-ratios for the sets of added variables are always less than unity, and the separate variables are not statistically significant.[25]

Thus, the data are consistent with the null hypothesis that the economic success of second-generation American Jews is independent of the parent's country of birth and the type of Jewish mother tongue. This suggests that it

---

25 The only exception is the small sample of Jews of Czechoslovakian/Hungarian (CZHU) parentage. The coefficients and t-ratios are:

	Coefficient	t-Ratio
CZHU	0.792	1.74
(CZHU)(EDUC)	−0.063	−1.94

The critical t-ratio under a two-tailed test is 1.65 at a 10 percent level of significance and 1.96 at a 5 percent level of significance. The implication is a flatter schooling-earnings profile for those of Czechoslovakian/Hungarian parentage, but with no difference in earnings at the mean level of schooling. Note, however, that the CZHU effect was detected when detailed country categories were used and that this effect disappears if CZHU is included within a broader Central European category. Under a 5 percent level of significance, random sampling would result in one sample of 20 rejecting a true hypothesis of no difference.

is the historical, cultural, and religious experiences common to the American Jewish community, rather than the experiences or influences of particular European countries of origin, that have shaped the pattern of investment and earnings. It also suggests that the use of a Jewish mother tongue to identify American Jews in the 1970 Census does not result in biased regression coefficients.

SUMMARY AND CONCLUSIONS

This study is an analysis of earnings and rates of return from schooling of adult male Jews in comparison with adult non-Jewish white men in the United States. Because of the lack of appropriate data with direct information on religion, an indirect approach for identifying Jews is employed. Among second-generation Americans, those who reported Yiddish, Hebrew, or Ladino as their "mother tongue" (that is, language other than or in addition to English spoken in the home when the respondent was a child) in the 1970 Census of Population are assumed to be Jewish, while those who reported another mother tongue (including English) are assumed to be non-Jews. About 60 percent of second-generation American Jews are identified by this procedure. The remaining 40 percent is less than 5 percent of the persons classified as not Jewish.

In comparison with native-born non-Jewish white males, American-born Jewish males have higher levels of schooling and earnings, and even when other things are the same, Jews earn 16 percent more than non-Jews of British origin. When the data are limited to men living in SMSAs in the Tri-State (New York, New Jersey, and Connecticut) area, other things the same, Jews earn 8 percent more than non-Jews. It appears that Jews have higher rates of return from schooling and from investments in on-the-job training.[26] These patterns persist even when occupational distribution and self-employment status are held constant. One-third of the higher earnings and larger effect of schooling on earnings is due to the higher occupational status of Jews.

The higher earnings of Jews in comparison to British non-Jews is unique among second-generation male Americans. In general, a non-English mother tongue is associated with two percentage points lower earnings. The only other groups with earnings that differ significantly from those of British parentage are persons of Mexican origin (about 20 percent lower earnings) and of French-Canadian origin (about 5 percent lower earnings).

---

26 Becker notes the high levels of schooling and income and low child mortality and low fertility rates of Jews. He writes: "I believe that the high achievement and low fertility of Jewish families are explained by high marginal rates of return ... to investments in the education, health, and other human capital of their children that lower the price of quality relative to quantity [of children]." This paper provides empirical support for the consistency of Becker's argument. See Becker [4, p. 110].

Among Jews, other things the same, earnings and rates of return on human capital do not vary by parent's country of birth or by whether the mother tongue is Yiddish, Hebrew, or Ladino. This implies that it is shared aspects of the historical, cultural, and religious experiences of American Jews, rather than the experiences in particular European countries, that are responsible for their labor market success.

Thus, in spite of discrimination against Jews in access to higher education and in the labor market when many in the 1970 cohort of adults were making investments in human capital, this ethnic minority has attained both higher levels of human capital and greater returns on the investment.[27] It is often alleged that Jews have a cultural "taste" for schooling or that they overinvest in human capital because of a fear that their nonhuman assets may be vulnerable to expropriation. The finding of higher rates of return suggest, however, that the greater productivity of Jews in acquiring human capital per year of schooling or training or in converting schooling and labor market experience into earnings is a more compelling hypothesis for their greater investments in human capital.

Why do American Jews appear to have higher rates of return on human capital? It seems reasonable to assume that labor market discrimination in favor of Jews is not the explanation. The higher rates of return may arise from cultural characteristics that enable Jews to acquire more units of human capital per dollar of investment. For example, Jews may learn more in school or on the job because of supplemental training received in the home or in the Jewish community prior to or concurrent with schooling.[28] Or, it may be that there are cultural characteristics that enable Jews to be more productive in the labor market with the human capital embodied in them. The reasons for ethnic group differences in rates of return on human capital warrant further study.

---

27 While native-born Chinese and Japanese men also have more years of schooling than native-born white men, they apparently have about the same rate of return from schooling:

	Schooling (Mean)	Partial Effect of Schooling (Percent)
White	11.9	6.9
Chinese	13.1	6.7
Japanese	12.7	6.5

The Japanese and Chinese coefficients of schooling do not differ significantly from the coefficient for whites. Source: Barry R. Chiswick, "An Analysis of the Earnings and Employment of Asian-American Men," *Journal of Labor Economics* (April 1983), based on 1970 Census of Population, one-in-a-thousand sample for white men, two-in-a-hundred sample for Asian-origin men.

28 This would be consistent with their lower fertility. See Barry R. Chiswick, "Differences in Educational Attainment Among Racial and Ethnic Groups: Patterns and Hypotheses Regarding the Quantity and Quality of Children," paper presented at the National Academy of Education Conference on the State of Education, Chicago, May 1982, revised January 1983.

REFERENCES

1. Armen A. Alchian and Reuben A. Kessel. "Competition, Monopoly and the Pursuit of Pecuniary Gain." In *Aspects of Labor Economics,* ed. H. G. Lewis. Princeton, N.J.: Princeton University Press, 1962.
2. Eliezer Ayal and Barry R. Chiswick. "The Economics of the Diaspora Revisited." *Economic Development and Cultural Change* 31 (July 1983).
3. Gary S. Becker. *Human Capital.* New York: National Bureau of Economic Research, 1964.
4. ————. *A Treatise on the Family.* Cambridge, Mass.: Harvard University Press, 1981.
5. Gary S. Becker and Barry R. Chiswick. "Education and the Distribution of Income." *American Economic Review* 56 (May 1966): 358–69.
6. Yoram Ben-Porath. "The Production of Human Capital and the Life Cycle of Earnings." *Journal of Political Economy* 75 (August 1967): 352–65.
7. Reuven Brenner and Nicholas Kiefer. "The Economics of the Diaspora: Discrimination and Occupational Structure." *Economic Development and Cultural Change* 29 (April 1981): 517–33.
8. Alvin Chenkin. "Jewish Population in the United States in 1972." *American Jewish Yearbook, 1973.* New York: American Jewish Committee, 1973.
9. Barry R. Chiswick. "An Analysis of the Earnings and Employment of Asian-American Men." *Journal of Labor Economics* 1 (April 1983).
10. ————."Sons of Immigrants: Are They at an Earnings Disadvantage?" *American Economic Review* 67 (February 1977): 376–80.
11. Carmel U. Chiswick. "On Estimating Earnings Functions for LDCs." *Journal of Development Economics* 4 (March 1977): 67–78.
12. Benjamin R. Epstein and Arnold Forster. *"Some of My Best Friends . . . ."* New York: Farrar, Straus and Cudahy, 1962.
13. Joe R. Feagin. "Jewish Americans." In *Racial and Ethnic Relations.* Englewood Cliffs, N.J.: Prentice-Hall, 1978. Pp. 148–87.
14. David Featherman. "The Socioeconomic Achievement of White Religio-Ethnic Subgroups: Social and Psychological Explanations." *American Sociological Review* 36 (April 1971): 207–22.
15. Galen L. Gockel. "Income and Religious Affiliation: A Regression Analysis." *American Journal of Sociology* 74 (May 1969): 632–46.
16. Andrew M. Greeley. *Ethnicity, Denomination and Inequality.* Beverly Hills, Calif.: Sage Publications, 1976.
17. A. C. Ivy and Irwin Ross. "Discrimination in College Admissions." In *American Minorities,* ed. Milton A. Baron. New York: Alfred A. Knopf, 1958. Pp. 133–44.
18. Alice Kessler-Harris and Virginia Yans-McLaughlin. "European Immigrant Groups." In *American Ethnic Groups,* ed. Thomas Sowell. Washington: Urban Institute, 1978. Pp. 107–38.
19. Fred Massarik. "National Jewish Population Study: A New United States Estimate." *American Jewish Yearbook, 1974–75.* New York: American Jewish Committee, 1974. Pp. 29–300.
20. Fred Massarik and Alvin Chenkin. "United States National Jewish Population

Study: A First Report." In *American Jewish Yearbook, 1973*. New York: American Jewish Committee, 1973. Pp. 264–306.

21. Jacob Mincer. *Schooling, Experience and Earnings*. New York: National Bureau of Economic Research, 1964.
22. Erich Rosenthal. "The Equivalence of United States Census Data for Persons of Russian Stock or Descent with American Jews: An Evaluation." *Demography* 12 (May 1975): 275–90.
23. Arthur Ruppin. *The Jews of To-Day*. New York: Henry Holt and Co., 1913.
24. Marcia Graham Synnott. *The Half-Opened Door: Discrimination and Admission at Harvard, Yale, and Princeton, 1900–1970*. Greenwich, Conn.: Greenwood Press, 1979.
25. Nigel Tomes. "Religion and the Rate of Return on Human Capital: Evidence from Canada." *Canadian Journal of Economics* (forthcoming 1983).