our econometric results. We note here, however, that Tannor (1970) concludes that the Peck-Saving effect is small on the basis of Canadian data.

10. Note that, deviating from the usual practice, we substitute the expenditure identity (15) into the consumption function, rather than the converse. Thus, we obtain the equilibrium level of consumption rather than income. We do this primarily because the focus of our paper is on the influence of the different perception effects on the consumption function. If desired, a similar discussion examining equilibrium income can easily be undertaken.

REFERENCES


INTRODUCTION

This paper reports estimates of family background effects on earnings of working-age men on the basis of a Canadian microdata file that includes extensive family background variables within the context of a more extended model of earnings generation than previously available. The literature in this area can be viewed in three stages. The first focuses on the development of a simple earnings equation in which levels of schooling attainment and a proxy for accumulated on-the-job training and experience served as determinants of the log of earnings (Mincer, 1974). Subsequent earnings models extended Mincer's simple human capital equation by introducing other variables (Leibowitz, 1974; Griliches and Mason, 1972; and Taubman, 1975). First efforts at multi-equation "status attainment" models which focus on relevant achievements of individuals other than their age were by sociologists. Subsequently, economists, among them Blinder (1973), Bowles and Nisella (1974), Britain (1977) and Leibowitz (1974), have traced the relationship between an individual's background and his educational attainment and their translation into earnings by means of multi-equation earnings-generation models.

The present paper advances on the latter efforts by estimating a more extensive model of the earnings-generation process. First, it incorporates a more extensive set of endogenous economic variables. The present model includes five endogenous variables: educational attainment, occupational status of current job, current earnings, and also occupational status of first full-time job and years of work experience. The model thus allows a more detailed characterization of the channels through which background variables can significantly influence earnings, and whether total background effects on earnings are primarily direct or indirect. Second, the present model contains a more extensive set of separate family background variables, particularly for mothers and fathers. Consequently, a better job can be done of separating out various family background effects on earnings. Third, the present model contains a more detailed set of control variables than used previously. The model thus provides less biased estimates and more reliable tests of the various background effects in the literature. It is found that (i) significant family background effects are present in all the equations of the model; (ii) direct family background effects are concentrated more in the education equation than in any other; (iii) occupation and work experience serve essentially as channels for conveying indirect effects.

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- University of Wisconsin (Madison). The authors wish to thank Michael Abbott and Hugh McRobers for assistance in preparing the data set used in this paper, and George Slonim for occupational assistance. Thirty-five to workshop participants at the University of Alberta, Texas, Toronto, and Western Ontario and the editor of this Journal for their comments. Research for this paper was financed by the Social Sciences and Humanities Research Council of Canada which the authors gratefully acknowledge.
Avening Economic Journal

Effects through to earnings; (iv) resource-sharing sibling effects directly affect only the "early" endogenous variables such as educational attainment; and (v) mother's and father's background variables exert quite different influences over the son's career with occupation and earnings more influenced directly by father's variables and work experience more influenced by mother's variables.

Model Structure and Data

The model presented includes equations for five endogenous variables: level of education attainment (ED), occupational status of first full-time job (OCC1), years of job experience (EXP), occupational status of current job (OCC2), and current earnings (Y). The analysis is restricted to men, since the earnings behavior of women requires more complex modelling of time allocation within a family framework. Education and experience are included as principal sources of human capital investment. Education is a well documented and important channel through which family background effects operate (Bowles, 1972). We wish to inquire whether job experience (directly measured rather than proxied by age and education) serves as a similar vehicle, and if so how this affects the importance of the education channel. The occupation variable is felt to contain much useful career-development information that is not captured by earnings alone and that mediates between education and perhaps work experience), and earnings. Initial occupation represents a career choice and transition stage from the relatively general schooling type of human capital to the more occupation-specific on-the-job type.

The model is structured recursively where successive endogenous variables depend on "prior" endogenous variables. Thus educational attainment depends only on background variables, while earnings depend on preceding endogenous variables as well as several background variables. Such a triangular structure may be based on a human capital perspective (Heckman, 1976; Rosen, 1977). The equations are thus viewed as structural-form regressions in which the background variables proxy various production efficiency, taste, and resource constraint parameters of underlying theoretical models.

The data set used is the July 1973 Job Mobility Survey issued by Statistics Canada (as a supplement to the monthly Labour Force Survey (Statistics Canada, 1978). The file was edited to include only male full-time workers aged twenty-five and over with positive earnings. The result is a basic file of 5467 records.

The principal family background variables used are mother's education (MED) and time spent at work (MWORK), father's education (FED) and occupation (FOCC), number of siblings (NSIBS), and sibling position in the family (SIBPOS). The data set also includes an extensive set of controls for ethno-cultural background variables such as mother tongue, religion, and immigrant status (both own and parent's) by detailed area of origin; occupation; religion and location variables (both when one grew up and currently in Canada); and labor market experience variables such as number of weeks worked during the year, language spoken on the job, and marital status.

Because of its triangular structure, the model is estimated by ordinary least squares. The methodology followed has been to specify an econometrically reasonably general set of background and other explanatory variables in light of the above theoretical framework for each variable. Variables that appear quite insignificant on the basis of standard nested hypothesis testing procedures are then dropped. Several insignificant variables, however, are still retained if theory suggests they should be. Emphasis throughout the empirical work has been on reporting results that are robust across alternative specifications.

Estimates of Direct Family Background Effects

Variable definitions are presented in Table 1. To keep this paper well focused, regression coefficients on only the principal family background variables of the model are presented in Table 2. The complete set of results for the five equations are available in Beach and Finnich (1984) along with an extended equation-by-equation discussion. The recursiveness of the model is indicated in the top panel of Table 2 where the right-hand-side endogenous variables that appear significantly in each of the equations are listed along with the sign of their determined effects. All "prior" endogenous variables turned out highly statistically significant with the one exception of OCC1 in the earnings equation when current OCC was already included. Thus indirect effects of family background variables are seen to operate on earnings through all of the "prior" endogenous variables.

Results for the education equation are in column (1) of Table 2. Parental education variables (MED and FED) are expected to enter with a positive sign reflecting family resources (primarily for FED) and home-produced human-capital (primarily for MED) effects (Leibowitz, 1974). Since there has been a secular rise in average education levels, a given level of parental education would have a stronger impact the further back in time it was obtained (Britain, 1977). Thus parents' education should enter multiplicatively with age. Father's education indeed turns out to have a positive effect that increases with earlier vintage and is highly significant. A difference of four years of father's education (evaluated at mean age) results in an extra 0.57 years of education (.35 years at age 25 and .70 at age 50). Father's occupation (FOCC), representing perhaps family resources and the transmission of occupational tastes, also turns out to have a positive effect and is highly significant. A difference in father's occupation between being a blue-collar worker and being a professional (AFOCC = 30) results in 1.4 additional years of education.

The channel through which mother's education has its effect on the human capital development of children is through home-time investment (Leibowitz, 1974). If MHOME represents the number of years the mother spent at home out of the labour market while the child was growing up it would seem reasonable to further interact MED x AGE (i.e., vintage-adjusted mother's education) with MHOME to get a joint mother-home-time-investment variable MHMED x AGE whose coefficient is indeed positive and highly

<table>
<thead>
<tr>
<th>Principal Variables in the Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED</td>
</tr>
<tr>
<td>OCC1</td>
</tr>
<tr>
<td>OCC2</td>
</tr>
<tr>
<td>EXP</td>
</tr>
<tr>
<td>Y</td>
</tr>
<tr>
<td>FOCC</td>
</tr>
<tr>
<td>FED</td>
</tr>
<tr>
<td>MED</td>
</tr>
<tr>
<td>MHMED</td>
</tr>
<tr>
<td>MWORK</td>
</tr>
<tr>
<td>MHOME</td>
</tr>
<tr>
<td>NSIBS</td>
</tr>
<tr>
<td>SIBPOS</td>
</tr>
</tbody>
</table>
### TABLE 2
Regression Estimates of Principal Family Background Variables (figures in parentheses are absolute values of \( t \)-statistics)

<table>
<thead>
<tr>
<th></th>
<th>ED ( + )</th>
<th>OCC ( - )</th>
<th>EXP ( + )</th>
<th>OCC ( + )</th>
<th>log(YE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant Endogenous Variables:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCC</td>
<td>0.0460</td>
<td>0.0155</td>
<td>0.0452</td>
<td>0.0102</td>
<td></td>
</tr>
<tr>
<td>FED ( \times ) AGE</td>
<td>0.00547</td>
<td>0.00649</td>
<td>0.00076</td>
<td>0.000184</td>
<td></td>
</tr>
<tr>
<td>MHWED ( \times ) AGE</td>
<td>0.002377</td>
<td>0.0124</td>
<td>0.00076</td>
<td>0.000184</td>
<td></td>
</tr>
<tr>
<td>MWORK</td>
<td>0.0511</td>
<td>0.04713</td>
<td>0.05256</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSBS</td>
<td>0.1776</td>
<td>0.00711</td>
<td>0.2363</td>
<td>0.139</td>
<td></td>
</tr>
<tr>
<td>SIMPOS</td>
<td>0.04750</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIMPOS( \times )</td>
<td>0.01332</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R(^2)</td>
<td>0.4229</td>
<td>0.4063</td>
<td>0.4908</td>
<td>0.4798</td>
<td></td>
</tr>
<tr>
<td>NYAR</td>
<td>41.4</td>
<td>20.36</td>
<td>37.7</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>11.24</td>
<td>20.87</td>
<td>20.96</td>
<td>47.10</td>
<td>8.966</td>
</tr>
</tbody>
</table>

Note: Reported above are the coefficients for only the principal background variables discussed in the text. Other explanatory variables (discussed in Blau and Duncan, 1967) included dummy for mother tongue, religion and ethnic background, region of birth at age 10 and currently, immigrant source for mother, years of immigrant source, language on first job, weeks worked and employment breaks, marital status dummy and "prior" educational variables, The \( \times \) and \( \times \) signs are the determination of effect of the significant endogenous variables evaluated at the point of sample means. NYAR is the number of independent variables (including the constant) in each equation.

**Significant.** When the mother spends full time at home, the effect of MED \( \times \) AGE becomes 0.00248, and is thus 22% larger (more than 20 standard errors) than the coefficient on MED \( \times \) AGE. This contrasts with Lee's (1976) empirical finding that mother's and father's education had roughly equal effects, and strongly supports her theoretical expectation of a stronger effect of mother's education. At the sample mean age, a difference of four years of mother's education results in an extra 0.69 years of education (.43 years at age 25 and .86 years at age 50). The combined effect of both parents having four more years of education is an expected higher educational attainment by 5 years for someone aged 25 and twice that for someone aged 50.

The impact of MHOME on education is typically positive and interacts positively with MED. Mother's educational attainment and time spent at home may thus significantly reinforce each other in affecting sons' educational attainment. Mother's education, however, appears the more dominant effect. One less year of mother's education has an effect that is equivalent to four years of labour force participation while the child was growing up.

Number of siblings and sibling position turn out to have the expected signs. NSBS is negative and highly significant, consistent with a trade-off between quantity and quality of children in sharing parental resources (Tomes, 1981). On average each additional sibling reduces a child's own educational attainment by 2.1 months. First- and last-born children are expected to face fewer problems of sharing resources than middle-born children (Lindert, 1977). Empirically, sibling position (SIMPOS) has a significant quadratic effect indicating, for example, that in a four-child family, educational attainment is likely to be highest for the last-born and lowest for the second-born. Combining the two results, one finds that the NSBS effect typically dominates the SIMPOS effect. Being the last-born in a family of four siblings is associated with lower educational attainment by 1.6 months relative to being the last-born of three siblings. We find the sibling variables to have significant but relatively small effects.

The occupational-status variables used in this study are indexes, based on work by Blau and Duncan (1967) and Bluhm and McKelvey (1976), which rate occupations according to their average education levels, average money income received, and people's average surveyed assessment of the prestige of the job. The sample mean of OCC is 40.87 and the range of possible values on the scale is approximately 14 to 75. For example, farm laborers have a scale value of 23 while physicians and surgeons have 74. The difference between an average professional and blue-collar worker is approximately 70 - 40 = 30 points on the scale. Estimation results for the first-occupation equation are presented in column (2) of Table 2.

Educational attainment obviously has an important role in matching people with initial occupations and providing entrants to certain occupations. It appears in the equation with a positive and highly significant effect. The first-occupation equation has considerably fewer background variables than the education equation. This is consistent with the view that family background affects education directly and indirectly via educational attainment. Consequently, the addition of the OCC channel to an earnings-generation model is not likely to change present views in the literature that identify education as the principal channel of family background effects on earnings. All the family background variables, save FOCC and NSBS, turned out to be highly insignificant and consequently were not included. Father's occupation may reflect "pull" or influence in the job market as well as any influence on one's preferences with respect to occupation. FOCC indeed turns out to have significant positive effect, though with a rather small coefficient. The direct effect (controlling for education) of having a father who is a professional rather than a blue-collar worker is a higher OCC standing equivalent to that of a senior year at university. Thus mother's direct influence appears to be focused primarily on educational attainment while father's flows over into occupational choice as well. Number of siblings has the expected negative effect associated with resource shuffling, but is weak and not significant.

The direct measure of number of years of work experience provides a novel opportunity to examine any family background effects on this second general form of human capital. It is this source of human capital investment rather than schooling that generates the concave shape of typical earnings profiles in the human capital model, so any background effects on EXP influence the slope and shape of the earnings profile rather than just its initial height. The measure of work experience used in the present file is the number of years the respondent worked full-time. The estimation results of the experience equation are presented in column (3) of Table 2.

The principal variables determining the amount of work experience of men are clearly age and education. If one simply runs a regression on age and education alone, one obtains

\[
\text{EXP} = 0.90 \text{AGE} - 0.42 \text{ED} - 10.6
\]

\[
(14.1) \quad (22)
\]

The coefficient on age turns out slightly less than unity, allowing some "slippage" to occur due
to illness, unemployment, or labour supply considerations. The coefficient on education is considerably attenuated from minus one as higher levels of education lead to jobs which are more economically secure and have less health risk. Its negative value indicates that experience can serve as a channel possibly to reduce the indirect (and hence total) effects of family background variables via education on earnings. Indeed, OCCI occurs with a negative sign as well, as higher starting occupations require greater preparation.

Family background variables turn out to have very few direct effects on work experience. The father background variables FED and FOCC appear highly nonsignificant. But these may be viewed as essentially proxying family resources, and Heckman (1976) shows that separable human capital investment and consumption decisions lead to the initial wealth stocks having no effect at all on OJIT investment patterns. The one family background variable that did consistently come through as significant was the mother's variable MWORK with a positive impact. This may reflect either the constraint of sons in low-income families having to seek work early to supplement family income, their steadier work patterns so that they spend less time out of work during their careers, or greater information about labour markets learned from the mother. To the extent that MWORK reduces some initial stock of home-produced human capital, a positive MWORK coefficient supports Heckman's theoretical result that a greater initial stock of human capital reduces the OJIT investment profile and thus flattens the resulting earnings profile. The effect however is small. If occupational choice appears to be directly affected more by father's background influence, work experience successively is affected more by mother's influence. The mother thus has an effect on both conventional forms of human capital, and not just on educational attainment. And it is mother's education that primarily affects son's educational attainment, while mother's labour market experience affects son's work experience.

However, because of the general paucity of family background effects in this equation, EXP serves essentially as a conveyance of indirect effects to earnings.

The sample mean of OCCI (43:70) exceeds that of OCCI (40:87) as people advance occupationally over their working life. However, the advance is not very substantial at the thirty-point difference between blue-collar and professional workers. Results for the current-occupation equation are presented in column (4) of Table 2.

The education effect for the occupation equation is positive which suggests a degree of upward job mobility along one's career path from education, holding OCCI constant. Thus education not only opens doors to initial occupations, but also helps to propel one along a career path beyond OCCI (though the latter effect is only about half the size of the former). Initial occupation is positive, but considerably less than one (indeed .31 at the sample means). Higher initial occupation levels do not imply equivalently higher occupational attainments over the long run. Work experience is also estimated to raise occupational status.

Among the family background variables, father's occupation and education and mother's time spent working appear with persistent positive effects. Only the first is statistically significant, and its impact on current occupation is reduced by a quarter from what it was on initial occupation (.65 vs .88) as father's influence wanes over the son's career. This effect is virtually identical to that found by Sewell and Hauser (1960). As in the case of the OCCI equation, father's background influence appears weaker than mother's. These coefficients suggest a relatively low degree of occupational transmission between generations. Indirect channels such as education and perhaps job experience are likely to be more important in such transmission.

The final equation of the model is for (the log of) total earnings. Estimation results for the equation are presented in the last column of Table 2. Education is believed to be a principal determinant of earnings and appears significantly positive. Work experience enters the earnings equation with the traditional concave quadratic effect. Current occupation affects earnings positively as well, while OCCI was not included as it was felt its role was only indirect via current occupation.

Direct family background effects, though some are still significant, are found to be relatively weak. Father's education (in the vintage-adjusted form of FED > AGE) appears persistently positive and significant. Father's occupation also appears persistently positive and has been retained. Neither mother's education nor years in the work force (MWORK) appear at all significant; nor are sibling effects of any significance. This finding of weak direct effects on earnings of many family background variables is consistent with the prevailing literature (Gottlich, 1979).

Parents' backgrounds do not appear to have symmetric direct effects on sons' earnings. Father's education is statistically significant while mother's is not. This differs from the education equation where mother's education had a significantly stronger direct effect than father's. There appears to be a greater attenuation in the direct influence of mother's background variables over the son's career, where father's influence continues to be significant.

To recap the broad findings of this section, we have seen that (i) significant family background effects are present in all the equations of the model; (ii) direct family background effects appear to be concentrated more in the education equation than in any other; (iii) occupation and work experience appear to serve more as channels for conveying indirect effects through to earnings; (iv) resource-sharing sibling effects directly impact only the "early" endogenous variables ED and OCCI and then die out; and (v) mother's and father's background variables exert quite different influences over the son's career with occupation and earnings apparently more influenced directly by father's variables and work experience more influenced by mother's variables.

**INDIRECT AND TOTAL EFFECTS OF FAMILY BACKGROUND**

Of principal concern for analysing long-run transmission of family background influences between generations, though, are the total effects of these background variables which allow the impacts to cascade through the full set of endogenous variables of the model. Such total or reduced-form effects can be estimated in "unrestricted" fashion as in Blinder (1973). But this procedure does not incorporate the structural restrictions incorporated in the earnings-generation model already estimated. In order to incorporate this structural information and obtain total effects consistent with the above model, we chose to examine "restricted" reduced-form effects (Goldberger, 1964). These should be considerably more reliable due to the structural restrictions incorporated in them, and are obtained by simulating the model already estimated.

Three simulations are considered. In Case I, each parent has 8 years of education and FOCC takes a value of 40 (general blue-collar worker). In Case II, each parent has 12 years of schooling and FOCC = 55 (e.g., foreman or school teacher). In Case III, each parent has 16 years of education and FOCC = 70 (professional). The total effects of the different background coefficients are estimated in the equation with FOCC = 40 (general blue-collar worker) and OCCI = 10 in the case of earnings (see Table 3). For comparison, the direct effects are provided in column (1) of Table 3. The marginal effects are provided in column (2) of Table 3. For comparison, the direct effects are provided in column (1) of Table 3. The marginal effects are provided in column (2) of Table 3.
TABLE 3
Simulated Total and Direct Effects of Joint Family Background Differences Between Three Cases of Family Background Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Total Effects Between Background Cases I and II</th>
<th>Total Effects Between Background Cases II and III</th>
<th>Direct Effects Between Case I and II or II and III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>ED</td>
<td>16.8%</td>
<td>16.8%</td>
<td>16.8%</td>
</tr>
<tr>
<td>OCC</td>
<td>11.9</td>
<td>13.7</td>
<td>3.2</td>
</tr>
<tr>
<td>EXP</td>
<td>5.1</td>
<td>-6.5</td>
<td>0.9</td>
</tr>
<tr>
<td>GCC</td>
<td>10.4</td>
<td>12.6</td>
<td>2.5</td>
</tr>
<tr>
<td>YE</td>
<td>15.2</td>
<td>17.0</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Note: The simulations are evaluated at age 40 with other control variables set at their sample means.
Case I: FED = MED = 8; FOCCE = 40
Case II: FED = MED = 12; FOCCE = 55
Case III: FED = MED = 16; FOCCE = 70.

fifth of the total effect. The principal family background variables thus affect earnings predominately indirectly by correlating the existing literature (Gilches, 1979). The strength of the indirect and total effects also appears slightly greater at higher levels of family background. That is, the share of the direct effect decreases slightly with family background. Indeed, the strength of the direct effects themselves generally attenuates as one moves from initial endogenous variables (such as educational attainment where it has its strongest effect) to later ones. The indirect effects, in contrast, build up in importance and have their strongest effects on the later endogenous variables such as earnings.

Table 4 provides a breakdown into direct and indirect effects for individual family background variables' on earnings for the intermediate Case II. One notes the complete absence of direct effects of mother's variables and sibling variables on earnings. Thus, while family background variables in general show decreasing direct effects across the endogenous variables of the model, there appears to be a greater attenuation in the direct influence of mother's and sibling background variables over the son's career. Mother's direct influence is initially higher, then attenuates faster, while father's direct influence declines but continues to remain significant. Mother's direct influence has a more marked effect on earlier and general

TABLE 4
Percentage Decomposition of Total Effects into Direct and Indirect Effects for Principal Family Background Variables on Earnings (for Case II)

<table>
<thead>
<tr>
<th></th>
<th>Total Effect (1)</th>
<th>Direct Effect (2)</th>
<th>Indirect Effect (3)</th>
<th>Education Channel as Percent of Indirect Effect (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FED</td>
<td>100.0%</td>
<td>39.0%</td>
<td>61.0%</td>
<td>83.6%</td>
</tr>
<tr>
<td>FOCCE</td>
<td>100.0%</td>
<td>42.5%</td>
<td>57.5%</td>
<td>69.5%</td>
</tr>
<tr>
<td>MED</td>
<td>100.0%</td>
<td>0%</td>
<td>100.0%</td>
<td>85.7%</td>
</tr>
<tr>
<td>NSHRS</td>
<td>100.0%</td>
<td>0%</td>
<td>100.0%</td>
<td>85.0%</td>
</tr>
</tbody>
</table>

SUMMARY COMMENTS
In the process of estimating the earnings-generation model, several hypotheses in the literature have been tested and largely corroborated. Leibowitz' home-time hypotheses suggesting positive effects of mother's and father's education on son's educational attainment, a positive MHOE effect, and a stronger impact of MED than FED on educational attainment have all been strongly supported. Similar support has also been found for Lodder's sibling-sharing hypotheses of a negative impact of NSHRS and a convex quadratic impact of SIBPOS on educational attainment. First-time analysis of an endogenous work-experience variable also finds evidence that is consistent with Heckman's results of a neutral family wealth effect and a negative initial human capital effect on GRT investment patterns. To the extent that other background determinants of home-produced human capital did not turn out significant as well, the later finding should be considered tentative.

This paper extends conventional earnings-generation models by expanding the set of endogenous variables through which family background effects can operate. As it turns out, the occupation and work experience endogenous variables are not significantly impacted by many family background variables and essentially act as transmission channels to convey background effects, principally operating through education attainment, down the line of earnings. This ends up increasing the importance of indirect and total effects of the family background variables on earnings, and consequently ends up enhancing the indirect importance of the education channel. The addition of an endogenous work experience channel, on the other hand, also serves to shift attention away from focusing just on schooling per se, and to broaden concern to further investigation of the overall human capital acquisition process.

FOOTNOTES
2. Excepting Blinder who also used an extensive set of controls in specifying his earnings equations, but did not estimate any other equations.
3. For those with object to occupation variable, a stripped-down three-equation model for ED, EXP, and log (YE) is provided in Busch and Francis (1944) Appendix B. All of the principal conclusions of this paper hold for both versions of the model.
4. The most obvious absence of information is on respondent's ability. Consequently, the effect of human capital acquisition, whereas father's appears more on long-run occupational development and more occupation-specific human capital investment.

A major channel through which indirect effects can operate is likely education. If one estimates the strength of this channel by calculating (δ log YE/δED) (δED/δM) for some background variable, one finds in the last column of Table 4 that the education channel accounts for 70-85% of the indirect effects of these variables. The indirect effect of these background variables indeed operates predominantly through the channel of educational attainment. The indirect effect via education is thus estimated to be more than half of the joint total effect of background variables (in the last row of Table 3), but to vary between 60% and 85% of their total effects for the individual variables in Table 4. These figures are substantially higher than the estimates by Britain (1977) that only 30-40% of total background effects are indirect via the education channel. Alternatively stated, we find a much stronger indirect role of education on earnings.
education on earnings, for example, will be biased as the former pick up some of the effects of ability as well. But Grilliches and Mason (1972) estimate the bias to be only 10–15 percent. In addition, the data set does not have information on parental income or household wealth. Brittain (1977), however, finds that parental wealth has a relatively minor effect when parents' education and occupation are taken into account.

To empirically test for diagonal of the covariance matrix (given the triangular structure of the model), Hansen-Wu endogeneity tests have been applied based on a set of pure background variables (Buch and Finnie, 1984), and it was found that endogeneity was not significantly present at a 95% level of confidence.

More recent times have also seen greater subsidization of education and a possible weakening of the influence of parents' education on offspring.

When FED is not interacted with AGE, its coefficient is .150 (t = 11.5). This may be compared to Leibowitz' (1974) finding of FED effects in the range .110-.165, and MED effects in the range .124-.141.

When the FED regression is run with MHDMEGAGE replaced by simply MEDAGE, the coefficient on FEDAGE is .00349 (t = 11.2); on MEDAGE, .00357 (11.9); and on MWORK, -.0220 (1.87). Consequently, one again finds a positive effect of MHDME on ED, and the coefficient on MEDAGE is 14% larger than on MEDAGE.

Actual construction of the occupation index is based on the 1971 Census. What has been done on the present file is to translate the provided occupational categories into their corresponding index values. Consequently, an individual's own earnings and education level have not been used in computing this index, so that obvious simultaneity problems do not arise.

Estimation results are also presented in Buch and Finnie (1984) for the equation with earnings level as the dependent variable. A Godfrey-Wu/LM test could not choose between the two versions of the dependent variable.

In the form of the equation with level of earnings as the dependent variable, FOCC appears highly significant.

Note, incidentally, that the total effect of FED alone (1.1% higher earnings for an additional year of FED) exceeds the total effect of MED alone (0.7% higher earnings) — a reversal of the relative importance of their direct effects on education.

The MWORK variable had a negative effect on educational attainment, but a positive effect on work experience. The resulting total effect of FED on earnings turns out to be small and positive.

If one also calculates the indirect components via education for the other two cases, one finds that they rise slightly with family background (e.g., the proportions for MED are 85% for Case I and 87% for Case II). Education thus slightly increases in importance as a transmission channel of economic status at higher levels of family background.

REFERENCES


B.R. Blinder and H.A. McRoberts (1976), "A Revised Socioeconomic Index for Occupations in Canada," Canadian Review of Sociology and Anthropology 17(February).


