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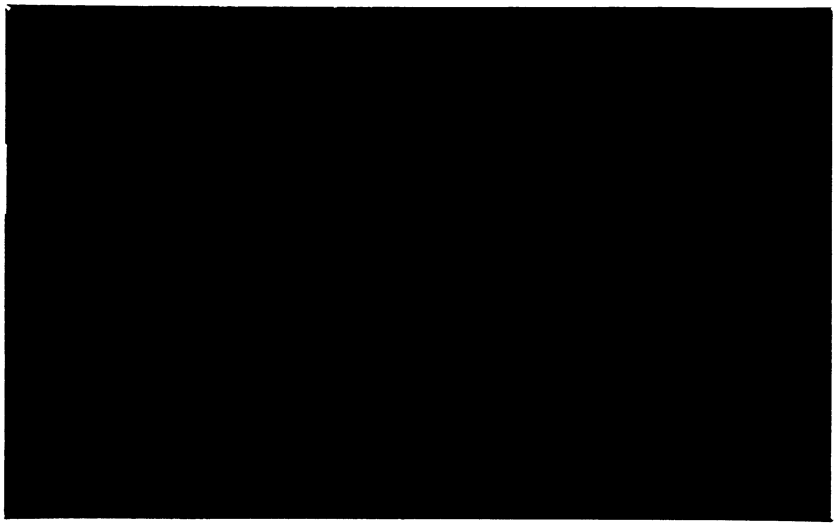

THE RELEVANCE OF THE EXTENT OF FARM WORK TO THE ANALYSIS OF OFF-FARM LABOR SUPPLY OF FARMERS

by

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ABSTRACT

Farm labor supply of farm operators is important for the analysis of their off-farm labor supply. We use a unique data set which includes such information to demonstrate its importance. Other studies had to use implicit assumptions in order to proxy the marginal product of farm labor with observable farm attributes. We find that these assumptions are too strong. We do it by estimating the off-farm participation equation over different subsamples defined according to the level of farm work. We correct for selection by estimating an endogenous switching regression model of the off-farm participation decision, in which the selection criterion is farm participation. Selection is found to be significant for farm workers only. The qualitative conclusions are unaffected by controlling for selection.

THE RELEVANCE OF THE EXTENT OF FARM WORK TO THE ANALYSIS OF OFF-FARM LABOR SUPPLY OF FARMERS

Estimation of off-farm labor supply functions of farmers may be seriously biased by ignoring the extent to which farmers work on the farm, and especially whether they work on the farm or not.[1] Farm and off-farm work are jointly determined, and should be jointly estimated. However, most surveys of farmers' economic behavior do not include farm labor supply information, presumably because of the objective difficulty of obtaining credible answers to questions of this type.

Economists often use farm attributes as proxies for farm work, when estimating off-farm participation equations or labor supply functions of farmers. This procedure utilizes the concept of conditional variable profit function described by Lopez. Following this line, among others, are the studies of Sumner, Robinson et al., Huffman & Lange, Gebauer, Lass et al. and Tokle & Huffman. This approach is based on two implicit assumptions: (1) All "farmers" really work on their farm; (2) Farm attributes are good proxies for the marginal product of labor on the farm.

This paper suggests an alternative approach, based on the assumption that off-farm work decisions of farmers depend on their farm work decisions. One model based on this approach is the endogenous switching regression model (Maddala, p. 223), in which different behavioral equations are estimated for different subsets of the population, as well as a selection equation. This model is applied here in estimating off-farm participation equations, conditioned on farm participation. A two-stage estimation strategy described in Kimhi (1991b) is used.

The data come from the 1981 Census of Agriculture in Israel, in which farmers were asked about the extent of their farm work. Specifically, a farmer had to say whether he works full time on the farm, up to 2/3 of his time, up to 1/3 of his time, or not at all, on an annual basis. Similar information was provided about off-farm work.

We use the Kuhn-Tucker necessary conditions for the farmer's optimization problem to discuss the implicit assumptions used in the literature and their implications. We present the alternative model and suggest empirical tests of the assumptions. We apply the tests to the case in which different off-farm participation equations exist for farm participants and non-participants. Next we correct for selection and estimate the endogenous switching regression model. The final conclusion is that the extent of farm work, and especially participation, are valuable in modelling off-farm participation. However, we cannot reach a clear conclusion about the role of farm attributes as proxies for the marginal product of farm labor.

Relaxing the Assumptions Regarding Farm Work

Many studies of farmers' time allocation deal with farm operators only (e.g. Sumner, Simpson & Kapitani), and assume that they all work on farm by definition. This assumption is challenged by findings from the Israeli data set: about one out of ten farm operators is not working on his farm (Table 1). This may be due to reporting errors. However, it seems likely that the error is in the identity of the farm operator and not in the particular answer regarding farm work. This is because the farm household often includes two or more persons who are capable of answering the questionnaire. The identity of a single farm operator is not always clear, and the respondents lack an incentive to follow the formal definition. There is no reason to believe that this kind of error is specific to this data set.

The assumption is even more objectionable in studies of farm women's off-farm work (Godwin & Marlowe), or joint work decisions of farm operators and spouses (Huffman & Lange, Tokle & Huffman, Gould & Saupe, Lass et al.). This is because specialization within the family often causes some household members not to work on farm. The effect of the assumption on empirical results is an empirical question itself, which we intend to examine here.

The model that is used in this paper (as well as in most other studies) assumes utility maximization over consumption and leisure subject to time and budget constraints (Kimhi 1991a). Farmers can spend time in farm and/or off-farm work. Formally, the optimization problem is:

$$\max_{Th,C,Tf,Tm} \; U(Th\,,\,C)$$

$$\text{s.t.} \quad 1.\;\; C \le \pi(Tf) + W\cdot Tm + I$$

$$2.\;\; Th + Tf + Tm \le T$$

$$3.\;\; Tf \ge 0$$

$$4.\;\; Tm \ge 0$$

where *Th*, *Tf* and *Tm* are time spent on home activities, farm work and off-farm work, respectively, *C* is consumption, *I* is non-earned income, *W* is the off-farm wage and π is Lopez's conditional variable profit function.

Two of the Kuhn-Tucker necessary conditions for this maximization problem (Waldman) are:

(1) $$\pi_1 + \delta/U_2 = U_1/U_2$$

(2) $$W + \phi/U_2 = U_1/U_2$$

where δ and ϕ are positive if and only if farm work and off farm work, respectively, are zero, and subscripts denote partial derivatives. (2) implies that off-farm participation occurs if:

(3) $$W > U_1(I+\pi(Tf^*),T-Tf^*)/U_2(I+\pi(Tf^*),T-Tf^*)$$

assuming all sufficient conditions are met, where Tf^* denotes optimal farm labor supply given no off-farm work.

This leads to the following participation index function:

$$(4) \qquad Y^{*} = W - RHS$$

$$Y = \begin{cases} 1 & \text{if } Y^{*} > 0 \\ 0 & \text{otherwise} \end{cases}$$

where *RHS* is the right hand side of (3). It is clear that when specifying Y^{*} as a function of observable variables, this function will depend on Tf^{*}. In practice Tf^{*} is not observed and researchers use farm attributes as proxies. This is fine as long as farm attributes are not endogenous, and as long as all farmers would have worked on their farms, had they been prevented from working off-farm. We want to concentrate on the second condition. Our data set reveals that about a half of the farm operators who don't work on the farm, don't work off-farm either. This means that for at least a half of the farm operators, $Tf^{*}=0$ and farm attributes should not be included in the off-farm participation equation.[2] This figure may even be larger for farm spouses.

We assume that the set of farmers who don't work on the farm is identical to the set of farmers for which $Tf^{*}=0$ (which is better than assuming that the latter is null). Under this assumption, we can test our conclusion by estimating the off-farm participation equation (4) separately for those who work on the farm and those who don't, and test the hypothesis that the two sets of parameters are equal. In particular, the model predicts that the coefficients of farm attributes will be zero in the non-participants equation, and this can also be tested. These tests will be performed in the following sections.

A second assumption that we want to challenge relates to the validity of farm attributes as proxies for the marginal product of labor on the farm. Since researchers assume that $Tf^*>0$ for all farmers, they can use (1) to write the participation equation (4) as $Y^*=W-\pi_1(Tf^*)$. They further use a set of farm attributes to proxy for $\pi_1(\cdot)$. These proxies are not valid if farm labor supply is not sufficiently flexible and free of short run constraints in the time unit used for modelling off-farm labor supply decisions. Farm production activities stretch over relatively long periods of time, from the decision to engage in a certain activity to the realization of proceeds. During that period, farm labor supply is to some extent a fixed obligation, that has to be fulfilled even when short run considerations favor allocation of time to other activities such as off-farm work.[3] In the extreme case in which farm work is exogenous to the off-farm labor supply decision, we have to include it in the set of explanatory variables (Oliveira). Otherwise, there is an omitted variable problem.

Actual farm labor supply is some combination of fixed time obligations and a variable component. Neither component can be isolated in the data. The fixed component solves the omitted variable problem when including farm work as an explanatory variable, but the variable component is probably correlated with the stochastic component of the off-farm equation. The choice between including farm work as an explanatory variable or not is indeed between two second-best solutions.

In the Israeli data set, farmers reported farm work as a four-level ordered qualitative variable. Hence, it is conceivable that it mostly reflects the fixed component, and not as much the stochastic element of the variable component of farm labor supply. Therefore, using this measure in the estimation of farmers' off-farm participation could improve the quality of the results. We test this conclusion in two ways. First, we divide the data set into subsamples according to the extent of farm work, estimate the off-farm participation equation in each subsample and test the hypothesis that all the sets of parameters are equal. Second, we estimate the model over the whole sample, including dummy variables for the extent of farm work as explanatory variables, and check the significance of these dummies and the effect of their inclusion on other parameters.

Data and Empirical Results

We use a data set from the 1981 Census of Agriculture in Israel. Originally, it included 28526 individual observations from semi-cooperative villages (Kimhi 1991a). We eliminated those who explicitly defined themselves as "non-farming families" (6281), "private" (as opposed to "family") farms (2808), partnerships (341), landless families, and incomplete observations. The final data set includes 16818 cases. Descriptive statistics of this data set appear in table 1.

Figure 1 illustrates the relation between farm and off-farm labor supply in the raw data. Regarding participation, we observe 50% off-farm participation among those who don't report any farm work, while only 37% of farm workers work off the farm. The variation by the extent of farm work is more dramatic. While more than 70% of those who work part-time on the farm participate in off-farm employment, only 6% of full-time farm workers do so.[4]

We now turn to the econometric model. Let Y^* of equation (4) be specified as a linear function of personal, family and farm variables, plus an i.i.d. standard normal stochastic component. In this case, we can estimate the parameters of Y^* by probit. We do it separately in the different subsamples defined according to the extent of farm work. The results are summarized in Table 2.

Comparing the results for the farm workers and non-workers subsamples (columns 5 & 6), we can reject the hypothesis that the coefficients are identical in very low significance levels. In particular, the coefficients of farm attributes are extremely different. For example, while the coefficients of land and capital stock are negative and strongly significant in the workers' equation, they are positive and non-significant in the equation of non-workers.[5]

Moreover, excluding farm attributes as a group doesn't have any considerable effect on the other coefficients in the nonworkers subsample (column 7), and we cannot reject the joint hypothesis that the coefficients of farm attributes equal zero (likelihood ratio statistic of 22.4 versus a critical value of 25.0 at the 5%

significance level). On the other hand, excluding them from the model using the whole sample does have an effect, especially on family variables and regional dummies (the formal exclusion hypothesis is rejected at very low significance levels).

The results are clearly in support of the idea that reservation wages of farm workers and non-workers have different functional forms. The difference is especially notable in the coefficients of farm attributes.

Next, we examine the differences in the results when the sample is divided according to levels of farm work. First, Figure 1 shows that the probability of working off-farm is decreasing with the extent of farm work, and also that the extent of off-farm work is decreasing in the extent of farm work. This is not surprising, since it is a direct implication of the binding time constraint.

Second, we estimate (4) separately in each subsample defined according to the extent of farm work (Table 2), and test the hypothesis of equal coefficients across subsamples. We compare the three subsamples associated with positive levels of farm work (columns 8-10) to the one combining all three (column 5), and the four subsamples (including non-workers) to the whole sample. In both cases, we reject the hypothesis of equal coefficients in all reasonable significance levels.

Looking at single coefficients across subsamples, we observe several noticeable trends. For example, the effect of age on off-farm participation is always negative, but is decreasing in absolute value as the extent of farm work increases. The schooling coefficients exhibit a similar pattern, with a sign reversal. The effect of beef cattle is significantly negative for non-workers, smaller in absolute value for part-time farm workers, and positive for full-time farm workers. The coefficients of milk cows exhibit a similar pattern, with a sign reversal.

Finally, we add dummy variables representing the extent of farm work to the model (columns 3-4). We find that off-farm participation probability is higher among those who work part-time on the farm than among those who don't work on farm (See note 4), and that this probability is much lower among full-time farmers than among the other two groups. This is consistent with figure 1. Most farm attributes become smaller in absolute value and less significant, but the hypothesis that they should be excluded is rejected at the 1% level. However, the coefficients of the farm work dummies do not change after the exclusion of farm attributes, and the same is true for the other explanatory variables.

Controlling for Selection

In the previous section, we performed probit estimation on different subsets of the data without worrying about selection biases. In this section, we correct the selection bias caused by the possible endogeneity of the farm participation decision, and check the validity of our conclusions. We estimate an endogenous switching regression model (Maddala, p. 223), adjusted to the fact that all dependent variables are discrete. We use a two-stage procedure in order to save computation time (Kimhi 1991b).

Formally, we can write the model that emerges from equation (4) as:

$$(5)\qquad Ym^* = \begin{cases} X_1 \cdot \beta_1 + u_1 & \text{if } Yf^* > 0 \\ X_2 \cdot \beta_2 + u_2 & \text{otherwise} \end{cases}$$

where Ym^* is off-farm labor supply, Yf^* is farm labor supply, and:

$$(6)\qquad Yf^* = X_f \cdot \beta_f + u_f.$$

In (5) and (6), X_i are row vectors of explanatory variables, β_i are conformable column vectors of associated parameters, and u_i are standard normal, possibly correlated (but independent across individuals), random variables. We continue by examining the subsample in which $Yf^* > 0$. Similar results for the other subsample can be easily derived.

Estimating (5) using this subsample, as we did in the previous section, results in inconsistent estimators if the conditional expectation of u_1 is non-zero. Using the derivations of Johnson & Kotz (p. 112), we write:

$$(7)\qquad Ym^* = X_1 \cdot \beta_1 + \rho_1 \cdot E_1 + \varepsilon_1.$$

Where $E_1 \equiv E(u_1/Yf^*>0) = \phi(-X_f \cdot \beta_f)/[1- \Phi(-X_f \cdot \beta_f)]$ and ρ_1 is the correlation coefficient between u_1 and u_f. One can show that:

(8) $E(\varepsilon_1 | Yf^* > 0) = 0$

(9) $V_1 = Var(\varepsilon_1 | Yf^* > 0) = 1 + \rho_1^2 \cdot E_1 \cdot (E_1 - X_f \cdot \beta_f)$.

The two-stage estimation strategy uses (6) and (7). First we estimate (6) by probit to get consistent estimates of β_f and therefore of E_1. We use these estimates in (7) and (9), and divide (7) by the square root of (9). Second, we estimate (7) by probit to get consistent estimators of $\rho_1/V_1^{1/2}$ and $\beta_1/V_1^{1/2}$, from which β_1 and ρ_1 can be identified. Finally, we calculate the correct standard errors of the estimators by the method suggested by Murphy & Topel. In Table 3 we compare the results of this estimation method to the previous results (those not corrected for selectivity). This enables us to test the hypothesis that selection bias is not important in this problem.

The comparison yields very different conclusions regarding the two subsamples. While for farm workers the correlation coefficient is close to -1 and highly significant, it is not significant in the farm nonworkers subsample, meaning that selection bias is not a problem in the latter subsample.[6] In the workers subsample, several coefficients (e.g., those of age, in Israel, schooling, family variables) change significantly after controlling for selection. However, not a single coefficient changes sign, even though the t-statistics are remarkably smaller in absolute value. Overall, the qualitative conclusions regarding the farm participation problem are not affected by selectivity issues.[7]

Summary and Conclusions

This paper is challenging two assumptions that are implicit in many analyses of farmers' off-farm work decisions: that all farmers really work on their farm, and that farm attributes are proper proxies for the marginal product of labor on the farm. These assumptions result from the absence of information regarding farm labor supply. We are able to relax them by using a data set that includes such information.

Separating those who work on farm from those who don't, we find that the coefficients of the two groups' off-farm participation equations are significantly different, and that farm attributes are not significant in the equation of non-workers. This supports the idea that the distinction between farm workers and non-workers is important, even when the latter group is relatively small, and that failure to perform this distinction is likely to result in inconsistent parameter estimates.[8] These conclusions are unchanged after controlling for the selection bias caused by estimating the model on subsets of data.

Estimating the off-farm participation model in separate subsamples defined by the extent of farm work, we find that the parameters are significantly different across subsamples, but the coefficients of farm attributes as a group remain significant. When we included the extent of farm work as an explanatory variable in the whole sample, these coefficients became smaller in absolute value but remained significant. The exclusion of farm attributes did not change the other parameters, though. We conclude that the extent of farm work is important to the explanation of off-farm labor supply, but farm attributes still have an explanatory power of their own.

Overall, this paper has demonstrated the relevance of direct information regarding farm work to the analysis of off-farm labor supply. We found that the distinction between those who work on the farm and those who don't is extremely important, especially regarding the treatment of farm attributes. Controlling for the level of farm work is also important, but the results have been somewhat inconclusive regarding its advantage over using farm attributes as proxies.

Subsequent work shall address two issues that are beyond the scope of this paper. First, off-farm labor supply, rather than participation only, can be modeled by ordered response techniques. Second, farm and off-farm labor supply should be jointly modeled and estimated, in order to identify the structural relations.

Notes

1. One may say that someone who doesn't work on the farm is not a farmer. We use here a broader definition: a (potential) farmer is a person who owns a farm and lives there.

2. Farm attributes appear in the reservation wage of these individuals only as a result of the joint family budget constraint when other family members work on farm. Even in this case, their coefficients will be different.

3. It is recognized that off-farm work also involves long-run commitments, but most studies ignore this as well. In the Israeli case, it is likely that farm work is more constrained over time than in other developed economies, because of the institutional restrictions on resource transactions (Kimhi 1991a).

4. The fact that those who work part-time on the farm have a higher tendency to work off-farm than those who don't work on the farm at all might be an indication of a two-stage decision process: first, the farmer decides whether we works at all or not, and then he decides on the optimal time allocation between farming and off-farm work. This possibility is not addressed here.

5. Total land and to some extent milk cows are exogenous even over the long run due to institutional constraints (Kimhi 1991a).

6. This raises again the doubt whether those who are not working at all should indeed be included in the analysis.

7. We also tried to correct for selectivity in the subsamples defined over the extent of farm work, by estimating an ordered probit model for farm labor supply and correcting for selectivity in a similar way. We ran into problems when the estimated correlation coefficient exceeded one in absolute value. This problem will be dealt with in subsequent research.

8. The parameters of the farm workers' equation were significantly different from those of the whole sample.

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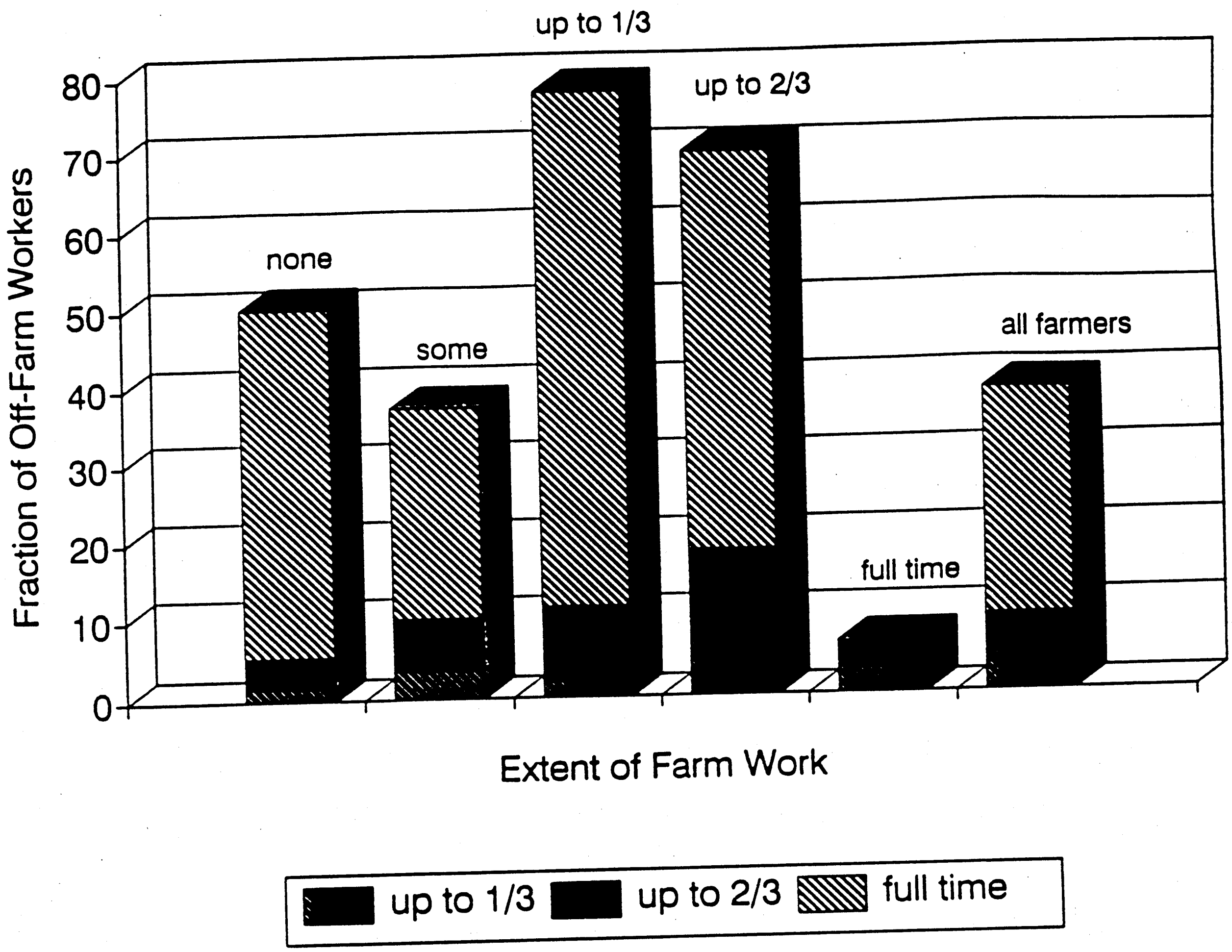

Figure 1: Fractions of Off-Farm Workers by Extent of Farm Work

Table 1

Descriptive Statistics

a. Quantitative

Variable	Mean	S.D.	Range	Units
Age	47.3	13.4	16-80	years
Schooling	8.7	4.5	0-20	years
Years in Israel[a]	32.0	8.9	1-80	years
Years on Farm	18.7	10.9	0-61	years
Family Members 0-14[b]	1.6	1.6	0-11	heads
Family Members 15-21	.89	1.3	0-8	heads
Family Members 22-65	1.5	1.1	0-9	heads
Family Members 66+	.12	.37	0-2	heads
Total Land[c]	30.2	38.2	1-3030	dunams[d]
Land in Use	26.4	24.1	0-795	dunams
Non-Irrigated Land	1.9	12.3	0-765	dunams
Beef Cattle	5.5	23.1	0-598	heads
Milk Cows	2.0	8.3	0-160	heads
Sheep	1.8	18.8	0-700	heads
Total Capital[e]	65.9	69.1	0-2187	$1000[f]
Old Capital[g]	11.1	26.7	0-1049	$1000

b. Qualitative

Variable	Number	Percent	Variable	Number	Percent
Working on Farm			Working Off-Farm		
None	1744	10.4	None	10297	61.2
Up to 1/3	4040	24.0	Up to 1/3	549	3.3
Up to 2/3	2797	16.6	Up to 2/3	1053	6.3
Full Time	8237	49.0	Full Time	4919	29.2
Total	16818	100	Total	16818	100

[a] For native Israelis, equal to age.
[b] Number of family members in each age group, excluding operator.
[c] Original land allotment.
[d] 1 dunam = 0.23 acre.
[e] Normative value of total capital stock.
[f] In 1981 prices. Factor of exchange: 12.39.
[g] Normative value of capital assets at least ten years old.

Table 2

Probit Off-Farm Participation Results

	Subsample -- according to extent of farm work									
			All Sample		Work Farm	Don't Work		Up To 1/3	Up To 2/3	Full Time
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intercept	.704 (5.0)	-.671 (7.0)	.716 (4.0)	.922 (6.9)	.789 (5.4)	1.937 (2.9)	2.171 (4.8)	1.324 (3.2)	.382 (.97)	-1.06 (3.7)
Age	-.026 (17.)	-.022 (17.)	-.047 (25.)	-.046 (28.)	-.021 (13.)	-.073 (15.)	-.075 (16.)	-.058 (16.)	-.047 (12.)	-.008 (2.4)
In Israel	.014 (8.0)	.011 (6.8)	.014 (6.3)	.016 (7.9)	.013 (6.8)	.013 (1.8)	.012 (1.9)	.006 (1.3)	.010 (2.0)	.003 (.85)
Schooling	.058 (18.)	.051 (16.)	.061 (16.)	.063 (16.)	.054 (16.)	.081 (8.4)	.084 (8.9)	.074 (9.9)	.044 (5.3)	.033 (4.3)
Family Under 14	.035 (4.5)	.013 (1.7)	.012 (1.3)	.010 (1.1)	.043 (5.2)	-.037 (1.4)	-.035 (1.3)	.024 (1.2)	.024 (1.1)	.012 (.69)
Family Under 21	.123 (13.)	.104 (11.)	.135 (11.)	.138 (12.)	.120 (12.)	.056 (1.9)	.043 (1.5)	.130 (5.5)	.131 (5.2)	.085 (3.8)
Family Under 65	.096 (8.4)	.047 (4.3)	.069 (5.0)	.067 (5.0)	.068 (5.3)	.139 (4.5)	.131 (4.4)	.106 (4.1)	.034 (1.1)	-.019 (.68)
Family Over 65	-.065 (2.1)	-.057 (1.9)	-.094 (2.5)	-.085 (2.3)	-.079 (2.4)	.087 (.83)	.100 (.98)	-.027 (.35)	-.141 (1.1)	-.085 (.68)
Tenure	-3E-4 (.17)		5E-4 (.23)		-.003 (1.4)	-.010 (1.6)		.001 (.25)	-.008 (1.6)	-.001 (.26)
Total Land	-.268 (5.3)		-.126 (2.0)		-.302 (5.6)	.071 (.38)		-.256 (2.0)	-.011 (.09)	-.258 (1.9)
Land in Use	.009 (0.3)		.048 (1.0)		.035 (.87)	-.116 (.88)		.148 (1.7)	.034 (.37)	.159 (1.4)
Land-Non Irrigated	.043 (2.9)		.026 (1.4)		.046 (3.0)	-.028 (.51)		-.008 (.20)	.007 (.16)	.068 (2.6)
Beef Cattle	-.064 (2.9)		-.023 (.85)		-.056 (2.4)	-.203 (2.6)		-.124 (1.8)	-.109 (1.5)	.038 (1.2)
Milk Cows	-.096 (3.3)		-.052 (1.5)		-.108 (3.5)	.180 (1.7)		.046 (.46)	-.051 (.54)	-.116 (2.6)
Sheep	-.080 (4.2)		.002 (.09)		-.099 (4.8)	.066 (.95)		-.118 (1.5)	.052 (.86)	-.005 (.14)
Capital Stock	-.238 (17.)		.031 (1.8)		-.258 (17.)	.016 (.32)		.077 (2.2)	.152 (4.0)	-.059 (2.0)
Old Capital	.005 (1.1)		.010 (1.7)		.005 (1.1)	.007 (.43)		.005 (.46)	-.004 (.29)	.016 (1.7)

(Continued on next page)

Table 2 *(Continued)*

	Subsample -- according to extent of farm work									
			All Sample		Work Farm	Don't Work		Up To 1/3	Up To 2/3	Full Time
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Up to 1/3 On the Farm			.545 (13.)	.551 (13.)						
Up to 2/3 On the Farm			.169 (3.8)	.177 (4.0)						
Full Time On the Farm			-2.15 (47.)	-2.17 (48.)						
Number of Cases		16818			15074	1744		4040	2797	8237
Log-likl.	-9749	-10447	-5703	-5762	-8404	-776	-787	-1429	-1322	-1892

Notes: t-statistics in parenthesis.
All models also included dummies for ethnic origin (3), and geographical region (9).
Models with farm attributes also included dummies for village establishment year (6).

Table 3

Probit Results Corrected for Selectivity

	work on farm		don't work on farm	
	corrected	uncorrected	corrected	uncorrected
Intercept	.659 (3.2)	.789 (5.4)	2.55 (.49)	1.94 (2.9)
Age	-.012 (4.7)	-.021 (13.)	-.076 (6.4)	-.073 (15.)
In Israel	.009 (3.3)	.013 (6.8)	.013 (1.7)	.013 (1.8)
Schooling	.040 (8.3)	.054 (16.)	.082 (6.2)	.081 (8.4)
Family Under 14	.044 (4.3)	.043 (5.2)	-.045 (.65)	-.037 (1.4)
Family Under 21	.091 (6.6)	.120 (12.)	.057 (1.9)	.056 (1.9)
Family Under 65	.136 (8.3)	.068 (5.3)	.097 (.24)	.139 (4.5)
Family Over 65	-.032 (.74)	-.079 (2.4)	.068 (.31)	.087 (.83)
Tenure	-.003 (1.1)	-.003 (1.4)	-.010 (1.6)	-.010 (1.6)
Total Land	-.268 (3.6)	-.302 (5.6)	.069 (.36)	.071 (.38)
Land in Use	.012 (.22)	.035 (.87)	-.096 (.39)	-.116 (.88)
Land-Non Irrigated	.050 (2.4)	.046 (3.0)	-.035 (.49)	-.028 (.51)
Beef Cattle	-.062 (1.7)	-.056 (2.4)	-.192 (1.2)	-.203 (2.6)
Milk Cows	-.125 (2.6)	-.108 (3.5)	.197 (1.2)	.180 (1.7)
Sheep	-.093 (3.1)	-.099 (4.8)	.069 (.86)	.066 (.95)
Capital Stock	-.245 (13.)	-.258 (17.)	.027 (.25)	.016 (.32)
Old Capital	4E-4 (.06)	.005 (1.1)	.009 (.41)	.007 (.43)
ρ_i	-.937 (11.)		.245 (.11)	

Notes: See notes to table 2.