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Land Market Transactions and Expansion/Contraction of Owned Area of Cultivating Peasant Families in the Punjab

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In a commercialised agrarian community economic competition among peasant families occurs mainly in the land market. Persistent superiority/inferiority in economic performance of a peasant family ultimately gets reflected in a change in its owned land and peasant households move on the economic ladder mainly via purchase/sale of land. This continuous redistribution of farm land amongst peasant families via the land market is supposed to be the main mechanism through which the amorphous peasant mass gradually gets differentiated into classes over time. This paper presents the results of an empirical exercise carried out to isolate some key factors that influence the expansion and contraction of owned land of peasant families via land market transaction. The impact of these land market transaction on the distribution of farm land amongst cultivating peasant households is also analysed. For convenience of usage peasant farms are called here *growing* and *decaying* respectively if their owned land base has expanded and contracted as a result of purchase and sale of land since 'birth'. Those that did not transact any land in the market since 'birth' are labelled as *static farms*. The entry point of a peasant family farm in economic competition is reckoned from the year of its 'birth' as an independent socio-economic unit and 'birth' is defined from the time point when the present head of the household took charge of family farm affairs.

GROWTH AND DECAY OF FARMS: SOME CAUSAL FACTORS

The processes of growth and decay of peasant farms are very complex because of the fusion of 'family' and 'farm' in a single composite socio-economic entity and it is not easy to discern why some peasant families are able to accumulate wealth and buy land, while many others fall in chronic debts and sell land. In this context, Marxist scholars give primacy to the initial size of a farm in determining its fate in economic competition.¹ It is argued that peasant families that enter economic competition with a sizeable land area of their own are able to take advantage of advanced technology, better terms in credit and marketing arrangements and many other economies of scale and are thus able to generate bigger production surpluses, accumulate wealth and buy more land. Their moneylending/trade operations and political clout are also supposed to help these big owners in the accumulation of wealth and acquisition of land. On the other hand, use of inferior technology, disadvantages in credit and marketing arrangements and the sheer inefficiency and vulnerability of a small sized family enterprise, combined with the excessive pressure of consumption needs are supposed to ruin most of the small owners, resulting ultimately in the sale of their lands.

Schumpeter has, however, cautioned against assuming any such 'automatism of accumulation' in big family enterprises and has suggested that there may rather be a tendency towards 'automatic decline' (see Schumpeter, 1951, pp. 148-176). In his view 'initial big

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size' in itself does not guarantee the expansion of a family enterprise, notwithstanding the usual advantages accruing from the already elevated economic position of such a unit. Bigger production surpluses do not get translated into successful investment automatically, but must be deliberately and wisely invested, and must not be squandered in consumption. Schumpeter has rather emphasised the primary role of subjective factors in the success/failure of family enterprises in economic competition. It is the differences in disposition to save, quality of management and leadership of enterprise, capacity to do prolonged hard work and renounce other pleasures of life, ability to adopt new techniques quickly and the sheer hard-headedness and drive to expand the enterprise at any cost, that distinguish the successful families from the not so successful. He even discounts the role of 'chance' in success/failure of family enterprises by the argument that what matters is not 'chance' in itself, but rather how a family adapts to or exploits its consequences.

Chayanov and other neo-populists have emphasised the primary role of demographic factors like family size in the expansion and contraction of peasant farms over time (see Chayanov, 1966 and Shanin, 1972). According to this view, farm size adapts to family size in the long run; bigger families gaining land and smaller ones losing it through periodic communal repartitioning of land in pre-capitalist agrarian communities. The mechanism through which family size influences the size of owned land of a family in a land regime in which private property rights in land are firmly established, however, was never explicitly stated by neo-populists. Causal influences from family size to farm size can be many and may even work at cross-purposes. One that can be thought is that big family size and large number of adult males in it may not only create the motivation for acquiring more land to provide 'inheritance', 'work' and 'sustenance' to members, but also help in its achievement by enhancing a family's accumulation ability. Bigger families enjoy considerable advantage in saving due to reasons of family public goods, scale economies and complementarity in consumption and also from specialisation and division of labour in household duties.² A negative effect of big family size on accumulation ability is, however, also plausible; consumption pressure generated by bigger families is supposed to ruin many a small owners resulting ultimately in the sale of their lands.

In addition to these factors suggested by well-known theories, some others like education of family labour force, financial burden resulting from addiction of family males to wine/opium and other wasteful habits, and 'financial balance' inherited from the parent unit at the time of 'birth' are also likely to significantly influence the chances of survivability and growth of peasant farms. Education may enhance the chances of growth in many ways like early adoption of new technology and of rational production and accounting practices, and also by rousing the ambition of family males for expansion of their farm. Addiction to wine/opium of family males increases the financial burden on a family tremendously and also weakens the work capacity and 'will' to retain land of such addicted members, thus adversely affecting the family economy from many sides.³ 'Financial balance' inherited from the parent unit is also likely to play an important role in the economic fate of a family in its subsequent career; those starting with debt inherited from the parent units being more prone to decay via land sales, and those that start with an inheritance of cash savings from the parent units being in a better position to accumulate more and buy land.

The role of these above-mentioned factors may be very important, but what ultimately matters in the growth and decay of peasant farms is the ability of a peasant family to meet its consumption requirements from the current flow of income from farm and non-farm sources. Persistent failure to do so results in chronic indebtedness and ultimately to forced sale of land. Success in meeting the consumption requirements of family members provides

financial stability; and ability to generate incomes (from farm and non-farm sources) even larger than the consumption requirements helps in the accumulation of savings and wealth that may ultimately be used to purchase more land. This suggests that per capita income of the family is likely to be one of the most important determinants of expansion/contraction of its owned area through land market transactions.

DATA AND METHODOLOGY

The data used in this study were collected by the author during 1979-80 from 90 peasant farms selected from 14 villages of Sangrur district of the Punjab, through stratified random sampling procedure. Samples of 30 growing farms and 30 decaying farms were drawn from the list of buyers and sellers of land recorded in the Mutation Registers of the 14 villages for the year 1978-79, and the sample of 30 static farms was drawn from the list of all cultivating households maintained in the Housetax Register of each village. From these 90 peasant households details of their family histories, farm economies and sale/purchase of land since 'birth' were collected during 1979-80.

Methodologically, the question of growth and decay of peasant farms can be viewed from many different angles. One approach can be to consider not only the growth and decay processes separately from each other, but also the triggering of these processes separately from the subsequent quantum of land gained or lost through land market transactions. Another, more direct and simpler approach can be to view growth and decay as two poles of the same single process of change in the owned area of peasant families through land market transactions. In this paper we have adopted this direct approach and have tried to capture the growth and decay of farms by defining a single variable, namely, absolute change in the owned area (in acres) through land market transactions since the birth of a household as an independent unit. This variable is then used as the dependent variable in the regressions.

Specification of Explanatory Variables

Keeping in view the availability of information in our data set and the importance of different factors in the growth and decay of peasant farms, the following explanatory variables were defined:

1. *Area owned at birth*: The area of land owned (in acres) by the household at the time of its 'birth' as an independent unit. It represents the 'initial farm size' factor emphasised by Marxist scholars and is expected to have a positive influence on change in the owned area via land market transactions.

2. *Number of adult males*: The number of adult male members in the family. It represents the neo-populist family size factor and is expected to influence the change in the owned area via the land market positively.

3. *Education*: The percentage of adult male members in the family with eight or more years of schooling. It is expected to take a positive sign in the regression model.

4. *New technology adoption*: The number of years elapsed since the adoption of Mexican high-yielding variety (HYV) wheats up to the year of the survey, *i.e.*, 1979-80. It takes higher values for early adopters and lower values for late adopters and is expected to influence the change in the owned area positively.

5. *Financial position at birth*: The amount of mortgaged in/mortgaged out land inherited from the parent unit at the time of 'birth' of the household. It is in acres and takes positive sign if the household inherited 'mortgaged in' land, negative sign if it inherited 'mortgaged out' land and zero value if did not inherit either of the two. It is expected to have a positive

influence on change in the owned area via land market transactions.

6. *Per capita income*: It is defined in rupees per year and is computed by dividing the total family income (from farm and non-farm sources), with the number of standardised consumers in the family.⁴ It is expected to have a positive sign in the regression model.

7. *Moneylending*: The actual amount of lending per family could not be used for want of reliable information on that; and we settled for the second best and defined this variable as a dummy taking values of '1' and '0' respectively for households practising and not practising moneylending.

8. *Addiction*: In defining this variable the average expenditure incurred on wine/opium, etc., could not be used on account of absence of reliable information on that. So this variable was also defined as a dummy taking values of '1' and '0' respectively for families having and not having some male members chronically addicted to wine/opium. It is expected to have a negative influence on change in the owned area via the land market.

EMPIRICAL RESULTS

The results of tests on the differences in means/proportions of explanatory variables among growing, decaying and static farms are presented in Table I and univariate and multivariate regression results on determinants of change in the owned area through land market transactions are given in Table II. Since moneylending and addiction variables have been defined as dummies for want of reliable information on the amount lent and the average expenditure on wine/opium, regressions were estimated alternatively by including as well as excluding these variables. Significant influence of area owned at birth, the number of adult males, financial position at birth, per capita income, moneylending and addiction on change in the owned area through land market transactions is clearly revealed by the results presented in Tables I and II. The influence of new technology adoption on change in the owned area through land market transactions is indicated by the difference in means test and univariate regression coefficient of this variable, but is not very clearly confirmed in the multivariate context; its coefficient has the expected positive sign in both the multivariate regressions, but is significant at 10 per cent level in only one of the equations. Taking an overall view of empirical results given in both the tables and the unquestioned importance of new technology adoption in production efficiency and farm incomes, it may not be out of order to conclude that new technology adoption is also an important determinant of change in the owned area through land market transactions. The difference in means test result (Table I) mildly alluded to the positive influence of education on change in the owned area via the land market, but it failed to come out in the univariate/multivariate regression results given in Table II; even the sign of its coefficient became negative in one of the regression equations. One possibility is that education has no direct influence on change in the owned area through the land market, but its influence operates mainly via inducing early adoption of new technology and generating higher per capita income from farm and non-farm sources (see correlation matrix given in Table III). Another possibility is that the influence of education on change in the owned area via the land market operates more complexly and our linear specification fails to reveal that.⁵

Except for area owned at birth variable, the direction of influence of all the other variables found statistically significant in the regressions, is in line with their hypothesised effects. The observed negative coefficient of area owned at birth is contrary to our expectation and directly conflicts with the widely held view (particularly among Marxist scholars) that the peasant families which start with a larger owned area fare better in economic competition

TABLE I. GROWING, DECAYING AND STATIC FARMS:
UNIVARIATE COMPARISON OF DETERMINANTS

Variable	Mean/Proportion for			Mean/Proportion differences			F- value/ Chi-squared
	Growing (G)	Decaying (D)	Static (S)	(G-S)	(D-S)	(G-D)	
1	2	3	4	5	6	7	8
1. Area owned at birth (acres)	13.67	14.86	15.05	-1.38 (0.51)	-0.19 (0.07)	-1.19 (0.44)	0.15
2. Number of adult male members	3.43	2.47	3.03	0.40 (1.04)	-0.56 (1.47)	0.96 ^b (2.51)	3.18 ^b
3. Proportion with some male members having ≥ 8 years schooling	57%	27%	40%	0.17 (1.34)	-0.13 (1.10)	0.30 ^b (2.25)	5.60 ^b
4. Years elapsed since the adoption of Mexican wheats (counted from the year of survey, 1979-80)	12.63	10.80	11.20	1.43 ^a (2.91)	-0.40 (0.81)	1.83 ^a (3.72)	7.66 ^a
5a. Proportion inheriting wealth in the form of 'mortgaged in' land from the parent unit	17%	0%	3%	0.14 ^c (1.98)	-0.03 (0.42)	0.17 ^b (2.40)	9.59 ^c
5b. Proportion inheriting debt in the form of 'mortgaged out' land from the parent unit	3%	43%	7%	-0.04 (0.40)	0.36 ^a (3.56)	-0.40 ^a (3.96)	20.20 ^a
5c. Acres of mortgaged in / mortgaged out land inherited from the parent unit	0.33	-1.60	-0.17	0.50 (1.13)	-1.43 ^a (3.22)	1.93 ^a (4.35)	10.19 ^a
6. Per capita income from all sources (Rs.)	4,121	1,358	2,799	1322 ^a (2.70)	-1441 ^a (2.95)	2763 ^a (5.65)	15.97 ^a
7. Proportion practicing money-lending	23%	0%	0%	0.23 ^b (2.58)	0.00	0.23 ^b (2.58)	15.15 ^b
8. Proportion with some male members addicted to wine/opium	3%	33%	3%	0.00	0.30 ^a (3.00)	-0.30 ^a (3.00)	15.58 ^b
9. Age of household (number of years elapsed since birth as an independent unit up to the year of survey, <i>i.e.</i> , 1979-80)	18.43	16.37	14.83	3.60 (1.30)	1.54 (0.59)	2.06 (0.63)	0.85

Notes:-

1. Figures in parentheses are t-values for means and z-values for proportions.

2. a, b, c, indicate respectively significant at 1 per cent, 5 per cent and 10 per cent levels for a two-tailed test.

and those that enter the economic race with a smaller owned area are more likely to fail and get ruined financially. In view of this contradiction, it is necessary to check the validity of this negative coefficient with data sets originating in other time-space settings in the Punjab. In the specific case of our sample a number of factors seem to be responsible for this outcome. One is the significant high positive correlation between area owned at birth and per male member area owned at birth (see Table III), which indicates that the pressure to acquire more land was higher on families with smaller area owned at birth and lower on those starting

with larger owned area at birth. In a peasant cultural environment, the pressure to acquire more and retain the already owned land is likely to be inversely related with per male member area owned. Significant positive correlation of area owned at birth with addiction variable (see Table III) also indicates that families starting with larger owned area at birth are more prone to acquire expensive consumption habits and even have some male members chronically addicted to wine/opium. It may also be noted from the correlation matrix given in Table III and multiple regression results reported in note 6 that addiction variable is not

TABLE II. CHANGE IN OWNED AREA THROUGH LAND MARKET:
REGRESSION RESULTS ON DETERMINANTS

(N = 90. Dependent variable : Change (in acres) in area owned at birth through land market transactions)

Explanatory variable	Univariate regression coefficient	Multivariate regression results			
		A		B	
		Regression coefficient	Beta coefficient	Regression coefficient	Beta coefficient
1	2	3	4	5	6
1. Area owned at birth	-0.013 (0.29)	-0.072 ^b (2.09)	-0.171	-0.108 ^a (2.99)	-0.257
2. Number adult males	0.724 ^b (2.48)	0.474 ^b (2.39)	0.167	0.611 ^a (2.78)	0.215
3. Education	0.020 (1.20)	0.001 (0.11)	0.009	-0.009 (0.63)	-0.056
4. New technology adoption	0.526 ^b (2.38)	0.187 (1.14)	0.087	0.285 ^c (1.67)	0.132
5. Financial position at birth	0.761 ^a (3.03)	0.429 ^b (2.42)	0.173	0.552 ^a (2.83)	0.223
6. Per capita income	0.001 ^a (6.56)	0.009 ^a (4.53)	0.423	0.001 ^a (7.33)	0.618
7. Moneylending	9.910 ^a (7.21)	5.818 ^a (4.53)	0.358		
8. Addiction	-3.751 ^a (2.87)	-1.554 ^c (1.67)	-0.121		
Intercept		-4.137		-5.699	
R-SQR		0.620		0.511	
R-BAR-SQR		0.582		0.476	
F-value		16.51		14.47	

Notes:- A includes all explanatory variables. B excludes moneylending and addiction variables.

1. Figures in parentheses are t-values

2. a, b and c indicate respectively significant at 1 per cent, 5 per cent and 10 per cent levels for a two-tailed test.

significantly correlated with per capita income and even the sign of their relation is negative.⁶ Given these results, it is difficult to accept the usually made statement that higher incomes resulting from Green Revolution are causing addiction in the rural Punjab. At least in our sample that does not seem to hold. The legal constraints created by the existing ceiling laws may have also contributed in generating this tendency of inverse relation between the size of area owned at birth and change in it through land market transactions. Households already owning considerable land have little incentive to purchase more and may have even disposed

off some land through the market for fear of losing it through the operation of ceiling laws.⁷ All these explanations of the observed inverse relation of area owned at birth with change in it through land market transactions are at best only preliminary hypotheses and need more detailed examination. Even the existence of this inverse relation needs to be confirmed with data sets originating in other time-space settings, before being accepted as a valid generalisation.

TABLE III. CORRELATION MATRIX

Variable	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀
1	2	3	4	5	6	7	8	9	10	11
1. Area owned at birth (X ₁)	1.000	0.066	0.319 ^a	0.232 ^b	-0.082	0.351 ^a	0.022	0.304 ^a	-0.031	0.661 ^a
2. Number adult males (X ₂)		1.000	0.040	0.118	0.030	0.059	0.135	-0.085	0.255 ^b	-0.237 ^b
3. Education (X ₃)			1.000	0.381 ^a	0.141	0.282 ^a	0.002	0.099	0.127	0.154
4. New technology adoption (X ₄)				1.000	0.114	0.231 ^b	0.147	-0.041	0.246 ^b	-0.023
5. Financial position at birth (X ₅)					1.000	0.080	0.129	-0.198 ^c	0.308 ^a	-0.191 ^c
6. Per Capita income (X ₆)						1.000	0.434 ^a	-0.065	0.573 ^a	0.109
7. Moneylending (X ₇)							1.000	-0.114	0.609 ^a	-0.092
8. Addiction (X ₈)								1.000	-0.293 ^a	0.242 ^b
9. Change in owned area via market (X ₉)									1.000	-0.224 ^b
10. Per male member area owned at birth (X ₁₀)										1.000

Note:- a, b and c indicate significant at 1 per cent, 5 per cent and 10 per cent levels respectively for a two-tailed test.

Impact on Land Distribution

We next investigated the impact of these land market transactions of the sample of growing and decaying farms on the distribution of land among rural land owning households. Only the change in the area owned by growing and decaying farm households was compared for this purpose, as the area owned by static farm households has not changed at all due to their non-involvement in land market transactions. The relevant information is summarised in Table IV. It reveals a net transfer of land from the non-cultivating owners to the cultivating owners via land market transactions; the excess of 67.6 acres in the total land purchased by growing farms group over that sold by decaying farms group indicates the approximate quantum of this net transfer of land from the non-cultivating owners to the cultivating owners.⁸ Further, a perusal of columns (6) and (7) of Table IV suggests that though all the three size-groups of cultivating owners (small, medium and large) made net gains of land via market transactions, the biggest gain was made by the small owner cultivators' group; the area owned at birth by households of this group increased by as much as 20.18 per cent as a result of their land market transactions. A conclusion that may be safely drawn from these data is that land market transactions of the sample farms have not resulted in greater inequality in the distribution of land among cultivating owner households; rather a mild

centripetal tendency is revealed by the small increase in the share of owned land of the small owner cultivators' group, and a slight decrease in the share of large owner cultivators' group. It may be recalled that the significant negative coefficient of area owned at birth variable in the regression results discussed earlier, also alluded to a centripetal tendency of this type.

TABLE IV. MARKET TRANSFERS OF LAND AND CHANGE IN THE DISTRIBUTION OF LAND AMONG CULTIVATING HOUSEHOLDS

Size-groups (acres) by land owned at birth	Number of growing and decaying farms	Area owned at birth	Area purchased since birth	Area sold since birth	Net gain /loss of land via land market		Area owned at present
					In acres (col.4 - col.5)	As per cent of area owned at birth $\left(\frac{\text{col.6}}{\text{col.3}} \times 100\right)$	
1	2	3	4	5	6	7	8
Small (0 - 9.99)	27 (45)	148.2 (17.33)	60.1 (38.48)	30.2 (34.09)	29.9 (44.45)	20.18	178.1 (19.30)
Medium (10.00 - 19.99)	18 (30)	272.5 (31.87)	47.6 (30.47)	27.2 (30.70)	20.4 (30.18)	7.5	292.9 (31.75)
Large (20.00 and above)	15 (25)	434.3 (50.80)	48.5 (31.05)	31.2 (35.21)	17.3 (25.59)	4.0	451.6 (48.95)
All/Total	60	855.00	156.2	88.6	67.6	7.91	922.6

Note:- Figures in parentheses indicate percentages to the total.

CONCLUSIONS

The main conclusions of our analysis of land market transactions of a sample of farms from Sangrur district of the Punjab may now be recapitulated:

1. The change in the owned area of peasant families through land market transactions is positively influenced by per capita income, number of adult males in the family, financial position at birth, moneylending and early adoption of new technology; and is negatively influenced by addition of family males to wine/opium and larger size of owned area at birth.

2. Land market transactions seem to be resulting in a net transfer of land from non-cultivating owners to cultivating owners and also produce a mild centripetal tendency in the distribution of land amongst this latter group of owner cultivators.

NOTES

1. For a classic statement of this standard Marxist thesis, see Lenin (1971).
2. For examples and discussion, see Lazear and Michael (1980).
3. For one of the earliest recorded evidence on the role of addition in land sales in the Punjab, see Punjab Board of Economic Enquiry (1925).

4. Net farm income was defined as follows:

Gross value of crops and milk produced - (Value of all material inputs used + cost of purchased primary factors + imputed interest on credit financed for the purchase of modern inputs + imputed depreciation on fixed capital). The conversion formula used for estimating the number of standardised consumers was taken from the Government of Punjab (1978).

5. Some further probing that we did to analyse the role of education in the growth and decay of peasant farms confirmed this complexity and suggested that education significantly increases the chances of a family buying land, but does not influence significantly its chances of selling land.

6. To further check the influence of per capita income and area owned at birth variables on addition, the following regression equation was estimated:

$$\begin{aligned} \text{addiction} &= 0.234 - 0.00003 \text{ per capita income} \\ &\quad (1.61) \\ &+ 0.01143^* \text{ area owned at birth} - 0.01916 \\ &\quad (3.11) \quad (0.86) \\ &\text{number of adult males} + 0.00121 \text{ education} \\ &\quad (0.85) \\ &- 0.01496 \text{ new technology adoption} \\ &\quad (0.81) \end{aligned}$$

7. More detailed analysis of the role of ceiling laws could not be done, because we had not collected information on the reasons given by the peasant families themselves for not purchasing/selling land.

8. It may be noted that our sample was restricted strictly to cultivating-owner households. The difference in the area purchased by growing farms and that sold by the decaying farms is due to the area gained by the cultivating-owner group from the excluded group of non-cultivating owners.

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