SUMMARY AND CONCLUSIONS
CHAPTER - 7

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In the literature on differentiation of the peasantry, two different views can be discerned on the role of land market in determining the economic performance and survival of peasant farms in capitalist agriculture. The dominant view (emphasised by Marxist economists) holds that the land market buying and selling of farm land by peasant families results in their differentiation into two polar classes: big capitalist land owners on one side; and landless agricultural labourers (i.e. rural proletariats) on the other. This view constitutes the central core of what is known as the ‘theory of economic differentiation’ of the peasantry. Another less known but equally significant view (put forward by A.V. Chayanov and other economists of the Russian ‘Production-Organisation’ school) is that differentiation of the peasantry, or its polarisation into two classes (i.e. big capitalist land owners and landless agricultural labourers) is not likely to occur through land market participation by free peasant proprietors operating in a capitalist milieu. This second view on the differentiation of the peasantry forms the inner core of what is commonly called the ‘theory of demographic differentiation.’ These two theories on the differentiation of the peasantry suggest a number of factors (economic, demographic, technological, etc.) which enable a peasant household to expand the size of its owned area via buying in the land market. Economic factors such as big farm size and adoption of new farm technology (and also an
easy access to the capital and credit sources) enable a peasant household to buy land through the market. On the other hand, small initial size of the farm and backward technology is supposed to economically ruin most of the small owners compelling them to sell land. Demographic factors such as bigger family size, bigger family labour pool, etc. enable a peasant household to gain land via land market purchases. On the other hand, peasant families under the pressure of consumption needs and higher consumer-worker ratio are compelled to sell land through the market.

Guided by the main premises of these two theories of peasant differentiation, our focus in this study was on an analysis of the role of land market in bringing changes in the land distribution among peasant households in the geographical domain of Haryana. The present study was carried out mainly with the objective of analysing the trend and growth in land market activity ('number of land sales' and 'area of land sold') and land prices over the post-Independence period, and also to analyse the impact of Green Revolution on land sales (i.e. land market activity) and land prices in rural Haryana. Another objective of this study was to compare land buying and land selling peasant households (both in the univariate and multivariate context) with a view to isolate their distinguishing characteristics. Finally, this study aimed at analysing the impact of the factors which determine the amount of area purchased and area sold by land buying and land selling households. The impact of land market transactions on the concentration of land was also to be analysed in the present study. In order to carry out the objectives of our study,
data were collected through a primary survey of peasant households in Haryana. A multistage stratified random sampling procedure was used to select the sample of land buying and land selling peasant households for our field survey. The region of our study (i.e. Haryana state) was divided into four diverse agro-climatic regions, and number of tehsils selected from each region was in proportion to the area sold in that region. One village was randomly selected from each tehsil. A complete list of the land buying and land selling farm households who had purchased/sold land in the six years prior to our survey in 1994-95 (i.e. 1987-88, 1988-89, 1989-90, 1990-91, 1991-92, and 1992-93), was prepared from the 'Mutation Register' of each selected village. Half (i.e. 50 percent) of the enlisted land buying and land selling farm households were finally selected for primary survey. In this way, 241 farm households (comprising 159 land buying and 82 land selling households) were surveyed by the author in 15 randomly selected villages of Haryana during 1994-95, and data on land sales, land prices, and a large number of household characteristics (economic, demographic, educational, etc.) were collected for the present study. Various statistical techniques were applied to analyse these data. For example, simple linear trend and exponential growth equations (with and without dummies) were used to analyse the trend, growth, and break in the trend, etc. in land sales and land price variables. Simple regression equations (with dummy dependent/explanatory variable) were used, both in the univariate and multivariate form, to isolate the differentiating characteristics of the land buying and land selling households. Simple regressions (univariate and
multivariate) were used to analyse the impact of the factors determining the amount of area purchased and area sold by these land buying and land selling peasant households. The impact of land market transactions on the concentration of land was analysed with the help of Lorenz curves and Gini coefficients. The results of this empirical exercise have been presented in five different chapters. A brief summary of these chapters is given as follows.

In chapter two, an attempt was made to analyse the trend and growth in land market activity ('number of land sales' and 'area of land sold') in the surveyed villages over the 1953-54 to 1992-93 period, and also to analyse the impact of Green Revolution on land sales in these villages of Haryana. The pattern of the emergence and development of land market in the British period was also discussed. Our findings suggest that land market sales were marked by their absence in Haryana region in the pre-British period. A regular land market activity emerged only after this region came under British rule i.e. after 1849. Mortgages of land were more popular than outright sales of land in the early period of emergence of land market in this region. Number of land sales and area sold, however, increased each year during the British period. The trend and growth in land market activity over the post-Independence period were analysed with the help of simple linear trend and exponential growth equations. The results have suggested that the 'number of land sales' and 'area of land sold' in the surveyed villages experienced an upward trend over this period (1953-54 to 1992-93 period), although sharp year to year fluctuations in the land market activity around this upward trend were also evident. For
statistically analysing the impact of Green Revolution on land sales, two hypotheses were tested—one, relating to the immediate impact of Green Revolution, and the second relating to the lagged impact of Green Revolution on land market activity. The statistical results on the comparison of trends estimated by using intercept and slope dummies, between these two periods (i.e. pre-Green Revolution and Green Revolution periods), suggest that the break (upward) in the trend in land market activity occurred in 1974-75 i.e. after a gap of about a decade since the coming of Green Revolution in 1965-66 in Haryana. Subsequently, the trend and growth in land sales were re-estimated (separately for these two periods) with the help of earlier mentioned linear trend and exponential growth equations. Results have suggested that land market activity was marked by the absence of any upward or downward trend in the earlier period of our study i.e. 1953-54 to 1974-75, although considerable year to year fluctuations in land sales around a constant trend were noticed even during this period. In the later period (Green Revolution), however, land sales revealed a significant upward trend over the 1975-76 to 1992-93 period. The ‘number of land sales’ and ‘area of land sold’ grew at the rates of 21.28 percent and 15.62 percent respectively, each year over the 1975-76 to 1992-93 period. The average size of plots sold in the land market of surveyed villages declined at the rate of 4.88 percent per year over the Green Revolution period (1975-76 to 1992-93).

In chapter three, the trend and growth in land prices in the surveyed villages over this forty years period (1953-54 to 1992-93) were analysed by
using simple linear trend and exponential growth equations. The impact of Green Revolution on farm land prices was also analysed statistically. In order to carry out the analysis, three different land price variables were taken: (1) ‘money price of land’ (measured in terms of Rs per acre); (2) ‘real price of land’ (measured in quintals of wheat per acre); (3) ‘real land price index’ (RLPI). The estimates of trend equations have revealed that farm land prices (all three land price variables i.e. money and real) experienced an upward trend over the period 1953-54 to 1992-93, and there were also sharp year to year fluctuations in land prices around this upward trend. The estimates of exponential regression equations also confirmed these conclusions and showed that farm land prices (money and real) grew significantly over this period (1953-54 to 1992-93). For analysing the impact of Green Revolution on land prices, visual inspection of graphs indicated that the break in the trend in land prices occurred in mid-sixties. Therefore, the entire time period was broken at 1965-66 (the year in which new HYV seeds technology was started in Haryana region) and the trends in two periods compared. The results of the tests of difference in trend between the pre-Green Revolution period (1953-54 to 1965-66) and the Green Revolution period (1966-67 to 1992-93) revealed that a significant break in the trend (upward) in farm land prices has occurred in 1965-66. This means farm land prices (money and real) started rising sharply immediately after the coming of Green Revolution in 1965-66. In order to see whether or not a further break in the trend in land prices occurred later on during the seventies, a comparison of growth rates between the two periods i.e.
1966-67 to 1974-75 and 1975-76 to 1992-93 was made, by using intercept and slope dummies. The results from this exercise revealed that no further break in the growth rates in land prices occurred in 1974-75. The growth rates in land price variables were subsequently re-estimated for the two periods (1953-54 to 1965-66; and 1966-67 to 1992-93) separately. The estimates of simple trend and exponential growth equations for the pre-Green Revolution period (1953-54 to 1965-66) revealed that no significant upward or downward trend in real land price variables (i.e. ‘real price of land’ measured in wheat terms, and ‘real land price index’ ) was observed over this period. However, ‘money price of land’ (Rs per acre) was revealed to be growing mildly over this period (pre-Green Revolution). The results of simple trend and exponential growth equations estimated for the Green Revolution period (1966-67 to 1992-93) revealed that farm land prices (money and real) experienced a significant positive trend over this period. The ‘money price of land’ grew at the rate of 14.44 percent per year, the ‘real price of land’ (in wheat equivalents) at the rate of 8.71 percent per year, and the ‘real land price index’ at the rate of 6.80 percent per year, over the Green Revolution period (1966-67 to 1992-93). The current level of farm land prices appears too high. For the paddy-wheat crop sequence lands, the price per acre of land (Rs 94345) in 1992-93 was 44 times of the prevailing land rents per acre (Rs 2131) in the same year. On the cotton-wheat rotation lands, the price per acre of land (Rs 94345) turned out to be 50 times of the land rent (Rs 1861) per acre in 1992-93.
Having analysed the trends in land sales and land prices in the surveyed villages over the post-Independence period in the first two chapters (i.e. chapter two and chapter three), in chapter four we compared land buying and land selling household on the basis of a large number of characteristics (forty-five in all) in the univariate context, taking one characteristic at a time. The purpose of comparing the two groups (land buyer and land seller) was to isolate the characteristics which significantly differentiate and distinguish these two groups from each other. The forty-five characteristics (each represented by an empirical variable) on which comparisons were made, form the following five broad sets: (1) characteristics related to caste, occupational, and tenurial status; (2) characteristics related to economic size; (3) demographic characteristics; (4) characteristics related to educational endowment of adult males in the family; and (5) new technology adoption related characteristics.

Those household characteristics which were amenable to quantification (for example, area owned at birth) were structured as continuous variables in the univariate comparisons, which gave us the estimates of mean and difference in means between the two groups. Those household characteristics which were not amenable to quantification (for example, nature of family structure) were included as dummy variables (dichotomous form) in the regression equations, so the univariate comparisons in this case provided the estimates of the proportion of households having that characteristic and the difference in proportions between the two groups. Many characteristics/variables were found to be significant in distinguishing between the two groups in the univariate
context, the most important of which are: caste status; main occupation status; leasing status (at birth); area owned per male member (at birth); tractor ownership; ownership of electric motor-operated tube-well; number of adult male members (current); number of male members (at birth); total number of family farm workers (current); education of adult male members (current); adoption of new mechanical technology, etc.

In chapter five, we did a multivariate comparison of land buying and land selling households by taking a number of characteristics/variables together in the estimated regression equation. Those variables were included which were revealed as significant distinguishing characteristics in the context of univariate comparisons of the last chapter. A multivariate linear probability regression model was used in which a number of selected characteristics were entered as explanatory variables. This linear probability model was used for discriminant analysis of land buying and selling household groups to isolate the distinguishing characteristics in the multivariate context. The results of this exercise revealed that the households which are more likely to be buyers of land rather than sellers of land are those which: (1) were leasing-in land (at birth); (2) have educated adult males in the family; (3) had purchased tractor quite earlier; (4) owned smaller area of land per male member (at birth); and (5) have a bigger pool of family farm workers. The results also suggested that area owned (at birth) and number of male members (at birth) variables were not significant in differentiating between the land buying and land selling farm households. This linear probability model was also used as a discriminant
function to classify the sample farm households into two groups (land buyer and land seller groups). The results have suggested that this multivariate linear probability model could correctly classify (predict) 65 percent of the surveyed farm households as land buying or land selling households. Within the group of land buying households, 68 percent were classified correctly by this model. In the case of land selling households, only 60 percent could be correctly classified by this model.

The focus in chapter six was on an analysis of: (1) the factors that determine the amount of area purchased and area sold by sample farm households; and (2) the impact of land market transactions on changes in owned area of land buying and land selling households. To begin with, however, we described the pattern of area purchased and area sold by different size classes of land buyers and land sellers respectively. The results revealed that among land buying households, about 67 percent households bought only about 19 percent of the total area purchased, and the remaining 33 percent households bought 81 percent of the total area purchased by all land buyers taken together. Among land selling households, about 70 percent of the households lost through sales about 20 percent of the total area sold, and about 30 percent of the land selling households lost via sales about 80 percent of the total area sold by all land sellers considered together. The statistical results on multivariate and univariate regressions revealed the following factors to be having a significant positive impact (as expected) on the amount of area purchased since birth by land buying households: (1) 'adoption of new
mechanical technology' ; (2) 'total number of family farm workers' (current); (3) 'education' of adult male members; and (4) 'leasing status' (at birth). The fifth variable 'area owned per male member' (at birth) had a significant negative impact on the amount of area purchased by land buying peasant households. However, 'area owned' (at birth) and 'number of male members' (at birth) had no significant impact on the amount of area purchased by land buying households. This multivariate model (including seven explanatory variables mentioned above) could explain only about 29 percent of the total variation in amount of area purchased by the sample land buying households.

The amount of area sold since birth by land selling farm households was (as expected) negatively influenced by 'total number of family farm workers' (current). 'Area owned' (at birth) variable, contrary to our expectation, had a positive impact on the amount of area sold by land selling households. The other explanatory variables in the regression model ('leasing status' at birth, 'education' of family adult male members, 'adoption of new mechanical technology', 'area owned per male member' at birth, and 'number of male numbers' at birth) were found to be non-significant in determining the amount of area sold. The estimated multivariate model could explain only 44 percent of the total variation in amount of area sold among land selling households. The impact of land market transactions (area purchased and area sold) was to transfer land from non-cultivating owners to the actual cultivators in Haryana. This was indicated from the results, according to which the excess of area purchased by land buying households over area sold by land selling households

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amounted to 400.32 acres (i.e. 64.57 percent of total area purchased). The results also revealed that the proportion of total area purchased was relatively higher in the smaller land owned categories compared to the bigger categories of owned land. The comparisons of Lorenz curves of area owned (at birth) and area owned (currently) by land buying and land selling households taken together revealed that land distribution among these households in the sample had improved (there was lesser land concentration currently compared to the land concentration in the past/at birth) as a result of land market transactions done by these peasant households.

The main conclusions of the present study may now be recapitulated. The practice of buying and selling of land through the market did not seem to exist in Haryana region during the pre-British period. A regular land market activity emerged and land sales increased after this region came under British rule, that is, after 1849. Land market activity (‘number of land sales’ and ‘area sold’) in the surveyed villages experienced an upward trend, and grew significantly, each year over the 1953-54 to 1992-93 period, although sharp year to year fluctuations in the land market activity around this upward trend were also evident. The break in the trend in land market activity occurred in the mid-seventies i.e. 1974-75. No significant trend (upward or downward) in the land market activity was found in the pre-Green Revolution period (1953-54 to 1974-75). However, over the Green Revolution period (1975-76 to 1992-93) land market activity experienced a significant upward trend. ‘Number of land sales’ and ‘area of land sold’ grew at the rates of 21.28 percent and 15.62
percent respectively, each year over the 1975-76 to 1992-93 period. The average size of plots sold, however, declined at the rate of 4.88 percent per year over this period (1975-76 to 1992-93). Land prices (money and real) in the surveyed villages revealed an upward trend, and grew significantly each year over the 1953-54 to 1992-93 period, but there were also considerable short run (year to year) fluctuations in land prices around this rising trend. The break (upward) in the trend in land prices occurred soon after the starting of Green Revolution i.e. in 1965-66. No upward or downward trend in real land price variables was evident over the pre-Green Revolution period (1953-54 to 1965-66), although ‘money price of land’ variable showed a mild growth each year over this earlier period. Land prices (both money and real) experienced a significant upward trend over the Green Revolution period (1966-67 to 1992-93). ‘Money price of land’ (Rs per acre) grew at the rate of 14.44 percent per year, ‘real price of land’ (in terms of wheat) at the rate of 8.71 percent per year, and ‘real land price index’ at the rate of 6.80 percent per year, over the Green Revolution period (1966-67 to 1992-93). The current (1992-93) level of land prices seems to be too high vis-a-vis cash land rents for the same year. The following characteristics were found to be significant in distinguishing the land buying and land selling households: (1) ‘leasing status’ (at birth); (2) ‘adoption of new mechanical technology’; (3) ‘total number of family farm workers’ (current); (4) ‘Education’ of family adult males; and (5) ‘area owned per male member’ (at birth). These same five variables/factors (mentioned above) also emerged to be the significant determinants of the amount of area
purchased by land buying households. However, the amount of area sold by land selling households was significantly influenced only by two factors: (1) ‘total number of family farm workers’ (current); and (2) ‘area owned’ (at birth). The excess of area purchased by land buying households over area sold by land selling households (amounting to 400.32 acres, or 64.57 percent of the total area purchased) indicates that farm land was being transferred through land market, from non-cultivating owners to the cultivating owners in Haryana. The proportion of purchased land in total land owned (at birth) was relatively higher in the case of smaller land owned category compared to the bigger category of owned land. As a result of land market transactions, the concentration of land among the sample land buying and land selling households is lower at present (i.e. in 1994-95, the year of survey) compared to the land concentration among them at the time of their birth (in the past).