The Life Cycle of Ownership in Norway, 1664-1930

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Economic opportunity is manifested in many different ways in modern statistics dealing with unemployment rates as well as income and wealth levels. Distributions show how much the poor have, relative to those in middle and upper groups. The degrees of disparities in opportunity in previous centuries are much more difficult to determine. Statistical data often are limited to land ownership and land use and therefore may exist only for simple measures. For example, one may determine only the proportions of persons who were landowners, farm occupiers, and farm labourers.

An interesting perspective in opportunities in land use and ownership may be obtained if persons can be classified by age. Land occupancy and ownership rates for the young, middle, and older ages can vary from year to year, and may demonstrate longrun trends or cycles. Of perhaps strategic importance to such a study may be the economic opportunity of the young, whose improvement is a desirable goal. Have prospects related to the young and to other age groups changed or remained constant in various countries over the years? One should search for statistical information relating to age which can yield an historical perspective on this important issue.

How have the young fared relative to the middle aged and to the old, and have all three groups done better in one period than in another? Have the patterns of economic well-being of each group changed from generation to generation and, indeed, from century to century? For many countries, it remains impossible to determine accurate answers to these questions because of inadequate statistical data. A person who attempts to solve the riddle probably should examine first the data for a Scandinavian country and, more particularly, the remarkable age and land tenure records for Norway dating from as early as 1664. In this paper I review some of the patterns related to age as recorded in selected Norwegian censuses from 1664 to 1930. Obviously, one must exercise great caution when attempting to ascertain whether or not the position of the young has changed materially relative to that of their elders.

Definition of Life Cycle

Generally, the term life cycle describes the changes in condition either for an individual, or for a cohort of individuals of a specific birth year as the in-

dividual or group becomes older. The life-cycle experience can be approximated by studying different age groups in a given year, and it is in this context that I will present data. Consider the figures in Table 1 as a basis for an initial discussion.

Table 1
ECONOMIC INDEXES FOR SELECTED AGE GROUPS; RURAL MALES IN NORWAY IN 1930 AND 1664

Age	1930					1664
	Average income	Average wealth	Proportion receiving income from wealth	Proportion occupying land (gardbrukere)		Proportion occupying land (oppsidere)
				All	Agriculture	All
21-25	kr 950	kr 318	.02	.01	.02	.18
41-60	2,360	8,280	.14	.28	.63	.75
71 and up	1,340	7,500	.22	.16	.58	.72

Source: Statistiske Centralbyrå, *Folketellingen i Norge, 1930, Syvende hefte, Inntekt og formue efter skatteligningen 1930-31,* Norges Offisielle Statistikk IX. 47. pages 9*, 30*, 66*, 67*, 6, 93-95. Agriculture includes forestry but excludes fishing, trades. etc.
The 1664 data are derived from drawing a sample of every 100th page from the 38 volumes, *Mantall 1664-66,* Riksarkivet, Oslo. A more detailed statement of sample results is presented in later tables. Sample results appear to be consistent with published age distributions and (always separately) published occupational counts. I obtained a total number of 488 oppsidere in my sample. A total of 57,000 gardbrukarar in 1665 is reported in STÅLE DYRVIK, ÅNDERS BJARNE FOSSEN, TORE GRONLIE, EDGAR HOVLAND, HELGE NORDVIK, and STEIN TVEITE, *Norsk Økonomisk Historie 1500-1970,* Band 1, 1500-1850 (Universitetsforlaget, Bergen 1979), pp. 185-186. See also ANDREAS HOLMSEN and HALVARD BJORKVIK, "Kven åtte jorda i den gamle leiglendingstida?" *Heimen,* Bd IX, 1952-54, eight articles beginning pp. 82, 86, 145, 218, 297, 442, 539, 566; T.H. ASCHEHOUG, "Om Norges folkemaengde i Aarene 1664 til 1666", Norsk Tidsskrift for Videnskab og Litteratur (Christiania, 1848) pp. 304-405 [Very little data of any type are presented dealing with ages)p. 330). A count of 46,522 gaardbrugere males and 1,966 females among 155,307 males is given (pp. 390-1)]; a further statement of the counts are given in T.H. ASCHEHOUG. *Statistiske* count over folkemaengde (Kristiania 1890), p. 38. A detailed age count is presented in LARS LARSSEN, *Mandtallet i Norge 1664-1666* (Christiania, 1875), particularly p. 42. Many other statements of totals *in the 1660s have been given in cluding Anne-Hilde* (Oslo, 1980) pp. 237-9; HALVARD BJORKVIK or ANDREAS HOLMSEN, "Kven atte jorda i den gamle Leiglendingstida?" (Tapir, 1978) pp. 102-4; ANDREAS HOMSEN, *Gård, skatt og matrikkel* (Universitetsforlaget, Oslo) pp. 242-3.

Data for the relatively recent year of 1930 show that the average income of the young was about 40% of the income of those who were middle aged, while the income of the older group was 57% of the standard enjoyed by the middle-aged group. Age-specific wealth averages emphasize even more dramatically the disparities between the young and middle groups, if not between the middle and the old. Wealth rather than income must be accepted as a standard for comparisons in the past, particularly in the rural sector, since

comprehensive statistics usually are not available for income in earlier centuries. Furthermore, wealth only in land may have to suffice as the standard for the past. An even weaker proxy, the ability to occupy land as a tenant rather than to own it, perforce must serve as my standard for 1664.

Another complicating factor arises in using an average or percentage for a specific age group, thus neglecting the dispersion or inequality within the age group. In modern times we can determine the distributions of either income or wealth among persons, say, who are 21 to 25 years of age; for the distant past we would be fortunate to ascertain just the average income or wealth for the group. For a specific age group in 1664 I am unable to calculate the proportion possessing land and/or whether they were resident sons of possessors of land; I also know their classifications as: servants (drenger, tjenestefolk), cotters (husmenn, strandsittere), or in a few cases, soldiers or mineworkers (knechter). A glimpse at the age pattern for 1664, presented in the last column of Table 1, proves that the life cycle did indeed exist in the distant past. Before either interpreting results for that time or discussing differences in patterns in the various generations and centuries, we should consider possible hypotheses concerning the manner in which patterns or configurations might have changed.

Hypotheses

Even today, a period of adversity is sometimes seen as a time when the young must move back into the homes of their parents and when perhaps even the grandparents must come to live with the major wage earner whose age is 35-55. In this case, the hypothesis surely must be that the individual's age or life cycle of well-being displays greater amplitude in times of adversity than in prosperity. In 1980 no doubt, average income or wealth, classified by age, must show less variation than was true in 1930 which, in turn, must display less age amplitude than it did in 1891.

Our only speculations about the life cycles from past centuries must be based largely on landownership and agricultural activity. Land availability should dictate the extent of the amplitude in the life cycle. Plentiful land would mean that a young individual could very quickly begin farming himself as a renter or possibly as an owner. On the other hand, a young man either must remain on his father's land or become a labourer or cotter if land is scarce. A further proxy of his ability to earn an income or to have access to land was whether he had married; this was a strong element in Malthusian analysis. Malthus had visited Norway in the hope of observing economic conditions and the extent of the "redundant" population unable to obtain land.

"Norway is, I believe, almost the only country in Europe where a traveler will hear any apprehensions expressed of a redundant population, and where the danger to the happiness of the lower classes of people, from this

cause, is, in some degree seen and understood." There, Malthus observed queuing among socioeconomic classes: unmarried servants, living in farmers' households, who waited for the possibility of becoming husmenn, with or without pieces of land to use, even if they could not become owners, renters, and leaseholders. The opportunity to occupy a cottage at least meant that one could establish a family.[1]

A second hypothesis must be that the life cycle would have shown less amplitude in 1664 than in either 1801 or 1891. There had to be more fertile land available, per person, at the earlier date. The data of Table 1 give us a hint that this was true.

The two hypotheses suggest but one result: a very long cycle in relative opportunity for the young, with a decrease in prospects from 1664 to 1801 or 1891, and an increase from 1891 to 1930, and even more from 1930 to the present.

An alternative hypothesis is one asserting a constancy in the life cycle. The young never could expect to begin at the level of their fathers. The old obviously lose their vigour no matter in what century they live. A generalization made from Norwegian data for the 1700s is as follows: "The average occupier marries at age 28, has his first heir at 32, and dies at age 60. At that point, the heir in turn, has reached the age of 28. He marries, takes over the farm, and the story goes on exactly as for his father."[2]

The 1664 Sample

A royal letter dated 20 September, 1663, requested that there should be gathered and administered a correct and legal registration throughout the land, listing all males 12 and over, wherever they could be found, stating their ages, names, and the farm names on which they lived. Not to be included were towns, cities, and Finmark.[3] The census has been examined by several, if not many, individuals in establishing counts of occupational groups and, separately, establishing age distributions. A partial list of such published materials is given in the sources to Table 1. To my knowledge, nowhere is

[1] T.R. Malthus, *An Essay on the Principle of Population*, 2nd. ed. (London: T. Bensley, 1803), pp. 187, 194.

[2] Stale Dyrvik, *Den lange fredstiden, 1720-1784*, ed. Knut Mykland, vol. 8, *Norges Historie* (Oslo: 1978), p. 79.

[3] Lars Larssen, *Mandtallet i Norge, 1664-1666, benyttet til Fremstilling af aldersforholdene,'* tillaegshefte til Videnskabs-Selskabets Forhandlinger for 1874 (Christiania: trygt Hos A. W. Brogger, 1875), pp. 1-51. The population of Norway in 1590 has been estimated at 359,000, and at 440,000 in 1665; see Henrick Palström, "The Census of Population in Norway, Aug. 15th, 1759," *Nordic Statistical Journal*, Vol. 1 (Stockholm, 1929), p. 371; Central Bureau of Statistics of Norway, *Statistical Survey, 1948*, Norges Offisielle Statistikk, X, 178, pp. 30-31.

there a better source leading to an investigation of the life cycle of land occupancy.

In an attempt to establish the life cycle for land tenure, I have drawn a sample from the 38 volumes for 1664, housed in the Riksarkiv, Oslo. The sample consists of 1,181 males, and shows that 54% of those 16 and older were occupiers (oppsidere). The standard error for this estimate is 1.6%. I did not record the values of the farms, in itself a gigantic task. A more comprehensive study of the matter is being conducted by Hans Hosar and myself, with the help of Harald Winge and the Norsk Lokalhistorisk Institutt. This extensive investigation deals with the farm values listed in the 1647 roll.

My sample is consistent with complete enumerations of the age distribution as well as the complete enumerations of occupational counts in 1664. Lars Larssen has compiled the distribution of the population, divided into eight age classes: 15-19, 20-24, 25-29, 30-34, 45-54, ..., 75 and up. When I adjust class frequencies for these 8 classes to my total sample size of 953, I find a very close relationship between his data and mine. A chi-square goodness of fit test demonstrates excellent consistency, Prob ($\chi^2_{df=7} > 7.30$) = .50. Anne-Hilde Nagel determined that there were 57,000 brukere and 17,000 husmenn and strandsittere in the 1660s. When these totals are adjusted to my sample sizes for those 16 and older, I find an excellent fit between her result and mine, with Prob ($\chi^2_{df=1} > .042$) = .85. My sample shows 76.7% brukere, which compares favorably with her proportion, 77.0%.[4] These results demonstrate that my 1664 sample adequately reflects the pattern of the complete data set for that year.

Reaching Backward

I move backward in time since, generally speaking, detailed information is more readily available the closer we are to the present. Understanding present-day statistics helps one to better understand the inadequacies in data from the past.

The 1891 census of *rural* areas reports 471,000 men, distinguishing seven different groups (public officials, mining, trade, etc.); it seems appropriate to focus only on part of the rural sector, dealing with the 251,458 males in agriculture, forestry, and fishing, and to highlight ownership and land use.

Table 2 gives the details for this sector. Column 23 of the table illustrates a classic life-cycle pattern. Few indeed owned land as young men, but the proportion rose rapidly as men reached the age of 30 or 35. The proportion then began to taper, reaching its peak between ages 50 and 55. Landownership at 65 diminished as farms were turned over to children. The downturn

[4] Larssen, *Mandtallet*, p. 42; Anne-Hilde Nagel, "Oversikter, arstall, tabeller," *Norges Historie*, bind 15 (Oslo: 1980), p. 238.

Table 2
LAND OWNERSHIP AND USE IN NORWAY
IN 1891 AND 1664

Age	1891 rural areas				1664 rural areas		
	Number of men in agriculture, forestry and fishing	Proportion owners (selveier)	Proportion owners and sons or relatives of owners	Proportion owners and renters	Number (sample size)	Proportion occupiers (oppsidere)	Proportion occupiers and sons of occupiers
(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
16-20	45,351	.004	. 37	.005	149	. 06	. 49
21-25	30,931	. 05	. 32	. 05	83	. 24	. 55
26-30	27,039	. 19	. 35	. 21	91	. 46	. 68
31-35	26,670	. 37	. 44	. 41	49	. 73	. 82
36-40	26,822	. 46	. 50	. 50	130	. 73	. 75
41-45	24,694	. 51	. 53	. 55	64	. 77	. 77
46-50	23,926	. 54	. 55	. 58	103	. 72	. 73
51-55	21,233	. 55	. 56	. 60	49	. 86	. 86
56-65	41,101	. 52	. 53	. 58	123	. 71	. 71
66-75	23,914	. 44	. 45	. 50	39	. 64	. 64
76-85	4,740	. 39	. 41	. 46	28	. 75	. 75.
85 and up	388	. 37	. 38	. 47			
16 and up	251,458	.361	.432	.402	908	.535	.683

Source: Statistiske Centralbureau, *Folketaellingen i Kongeriget Norge, 1891*, Norges Officielle Statistik, Tredie Raekke No. 259, pp. 96, 102, 130, 135, 142. See also Table 1.

for that age group does not mean a lessening in total asset position since the value of cash assets and pension support from children was significant. In Table 1 we saw that the proportion of people with wealth, in general, actually was strongly maintained into old age, at least for the 1930 pattern.

The configuration in column 23 undoubtedly was influenced by inheritance patterns as land was transferred by fathers at death to their children. An ultimate explanation might very well hinge on a table of age-specific death rates or mortality rates, not only for fathers, but possibly for grandfathers. A young man of age 23 faced only a small probability that his father would die within the year, unless he was born late in his father's life. As he grew older, the son obviously faced an increasing probability of receiving an inheritance. A study coupling death rates with ages of sons and fathers in the United States in 1870 shows that the probability of inheritance reached 50% at about age 45.[5]

The inheritance ramifications tell us something about changes in the pattern of the life cycle in the past. If death rates for older groups were extreme-

[5] Lee Soltow, "Male Inheritance Expectations in the United States in 1870," *Review of Economics and Statistics*, 64:2 (May 1982), 256.

ly high, then the young would come into possession of all of the available land; there would be so very few old people. The fact that a person might receive his inheritance earlier in life is but another reason for believing that the amplitude of the life cycle would have been less in earlier centuries.

Some words of caution must be presented prior to a detailed examination of the data for 1664 (technically, 1664-1666, since the data were gathered over a three-year period) and before comparing them to the proportions developed for 1891. The basic information for these precious data rests with my sample of 932 ages for males 16 and over. The set is difficult to manage since there is bunching at the specific values 20, 30,..., 90. These, in fact, do account for one-third of all cases. To form a frequency table with class intervals of 5 is somewhat treacherous because of this problem. One can argue that rounding for age also might result in less precise information; these individuals would be less likely to possess land. This does not prove to be the case although the situation is somewhat complicated because, in fact, there was less rounding or bunching among the young.

In spite of the irregularities, what can be said about the data of column 27? There clearly was *less* amplitude than in the figures for 1891, in column 25; the proportion in 1664, as a ratio of the proportion in 1891, decreases with age. Some might argue that the difference between proportions in the two columns is generally 20-30 points; still, the difference for ages 31-35 is the largest. The data generally support the hypothesis stated earlier. *After* seeing the figures, one's reaction might be that the comparison is not very revealing. Why shouldn't the 1664 column have less amplitude? Why didn't it demonstrate even less amplitude? Shouldn't a 21-year-old almost immediately have ventured forth in farming his own land? Surely there was more available land per capita over three centuries ago. The number of occupiers was less than a fifth of those considered in column 25 for 1891.

The life cycle embedded in the figures of Table 2 obviously is a function of many variables which are not just an expression of youthful desire for independence and new family formation. The possibility and probability of finding a bride influenced the desire to own land, and that had an impact on the life-cycle statistics. The relative absence of people — the low population density — in 1664 could actually mitigate against leaving one's parental family. (Low densities can serve to highlight the problems caused by proximity.) An individual might not wish to leave his immediate environment if he is at all gregarious.

Other possibilities enter the picture in 1664. Increasing returns to scale, or more technically, increasing marginal productivity from labour might arise in the case of one or two labourers. The use of a barn for animals, or a house in which to live, or the use of a horse or wagon all might dictate greater production as a result of having children and relatives remain together for an extended period of time. It is perhaps remarkable that such a high proportion of the young possessed land in 1664.

Sons and Relatives

Family ties, economic or social, have been measured to a certain extent in the various Norwegian censuses. Column 24 for 1891 indicates the very sizable number of boys aged 16-20 and young men of 21 working on the farms of their fathers or of another relative; the column does not show much amplitude if we cluster individuals. Column 28 for 1664 indicates an anomaly in the general configuration. The young were in a better position than were the older in the sense that they were attached to family land. From the standpoint of the family, their chances of occupying land actually decreased as they became older.

What happened to those in 1664 who were in their 30s or older who were not occupiers (oppsidere)? Generally, they were servants or cotters, groups for which we have counts in 1664. Age classifications provide a perspective of change for these classifications among rural males in 1664.

Age	Proportion servants	Proportion husmenn
16-20	.43	.04
21-25	.29	.07
26-30	.14	.14
31-35	.04	.14
36-40	.04	.20
41 and up	.04	.22

In a rough way, nonoccupiers were servants until age 30, or husmenn after 35 (excluding sons of occupiers, soldiers, and miners).

Well-being in 1865

An intriguing classification was made in the 1865 census that distinguished between individuals who were well-off and those who were not (bemidlede and ubemidlede). No exact definition was employed in distinguishing between the two from the standpoint of income or wealth. The lower class generally tended to include daylabourers, factory workers, and cotters as well as servants, craftsmen without city citizenship (uden borgerskab), journeymen, helpers, sailors (sons of bemidlede excepted), fishermen, occupiers, and renters without meaningful farms. Authorities admitted that it was difficult in many cases to decide in which category to place an individual. Instructors in primary schools served as enumerators in rural districts.

It is intriguing to note that the number of persons considered to be well-off rises with age and continues to do so among the very old, particularly in

rural areas, as is shown in Table 3. This very easily may reflect the fact that mortality was inversely related to wealth for any particular age group. The fact that rural persons were more likely to be well-to-do may stem from classifications based on ownership of real property, to the neglect, in part, of personal property. Classifications of the rich and somewhat rich in Sweden show little distinction between the rural and urban sectors in the middle of the XIXth century.[6]

Table 3
PROPORTION OF MALES CONSIDERED AS WELL-OFF (PW) IN NORWAY IN 1865, CLASSIFIED BY AGE AND URBANITY

Age	PW Rural	PW Urban
20-24	. 34	. 21
25-29	. 32	. 24
30-34	. 35	. 27
35-39	. 37	. 27
40-44	. 40	. 27
45-49	. 42	. 28
50-54	. 46	. 30
55-59	. 45	. 27
60-64	. 45	. 26
65-69	. 44	. 24
70-74	. 47	. 26
75-79	. 48	. 25
80-84	. 50	
85-89	. 52	. 30
90-94	. 56	
95-99	. 48	
20 and up	.390	.227

Source: *Folketaellingen i Norge, 1866*, Norges Officielle Statistikk C. No. 1, pp. VI, 98, 99, 289.

Occupational Comparisons, 1801 and 1664

Anyone wishing to understand changes in the life-cycle configuration in the XVIIIth century must be content with comparisons for the long period between 1664 and 1801. Figures for these two years are given in Table 4 and in Chart 1. The pattern appears to have changed very little during this long interval of time. The increases in the number of officials, craftsmen, and min-

[6] Lee Soltow, "The Rich and the Destitute in Sweden, 1805-55: A Test of Tocqueville's Inequality Hypotheses." *Economic History Review*, forthcoming.

Table 4
THE PROPORTION OF ADULT MALES POSSESSING LAND OR LIVING WITH PARENTS OCCUPYING LAND (PL) IN 1801 AND 1664 IN NORWAY, CLASSIFIED BY AGE

Age	Rural males	
	PL 1801	PL 1664
1-10	.54	
11-20	.48	
21-30	.37	.62
31-40	.41	.77
41-50	.45	.74
51-60	.43	.77
61-70	.37	.67
71-80	.24	.75
81-90	.15	
91 and up	.14	
All ages	.47	.72

Source: Departementet for det Indre, *Tabeller Vedkommende Folketaellingerne i Aarene 1801 og 1825* C. No. 1 (Christiania, 1874) Table 2, pp. 5-7.
The census of 1664 was for rural males 12 and older. The sample size in 1664 was 759 for the above six classes, for those 21 and older.

ers concomitant with economic development could explain the fact that age-specific proportions were lower in the latter year.

The comparisons demonstrated in both Table 4 and Chart 1 must be limited to six age classes because of the nature of the published data for 1801. The first five classes show, in a rough fashion, that about *30% more males occupied land* in the earlier year, no matter what their ages were. Only above age 70 does the disparity become larger. I have fitted parabolas to the six points, weighting each by its number of cases in my 1664 sample. Each parabola reaches its maximum in the 40s (age 48 in 1664, and 43 in 1801) and one might claim that the two have essentially the same shape. If such were the case, there would be no interaction effect. At every age, about 30% more men were attached to the land in the earlier year. To test this hypothesis, I applied a chi-square test considering the frequencies in 1664, to serve as my observed sample results, and considering my expected frequencies to be those obtained by applying the 1801 age-specific proportion PL + .30 to the class frequencies in 1664. The test shows Prob ($\chi^2_{df=6-1,\ \Delta=.30} > .86$) = .40, a result which says that the sample data are not inconsistent with the 30-point differential and the additive effect. Stated otherwise, the 1664 sample demonstrates that there was a downward shift in the pattern of land attachment in the 137 years, or four generations, after 1664. I also applied the chi-square

procedure using other differentials. Technically, the best fit was obtained with a differential of .33 rather than .30 (and with a chi-square probability of .55).

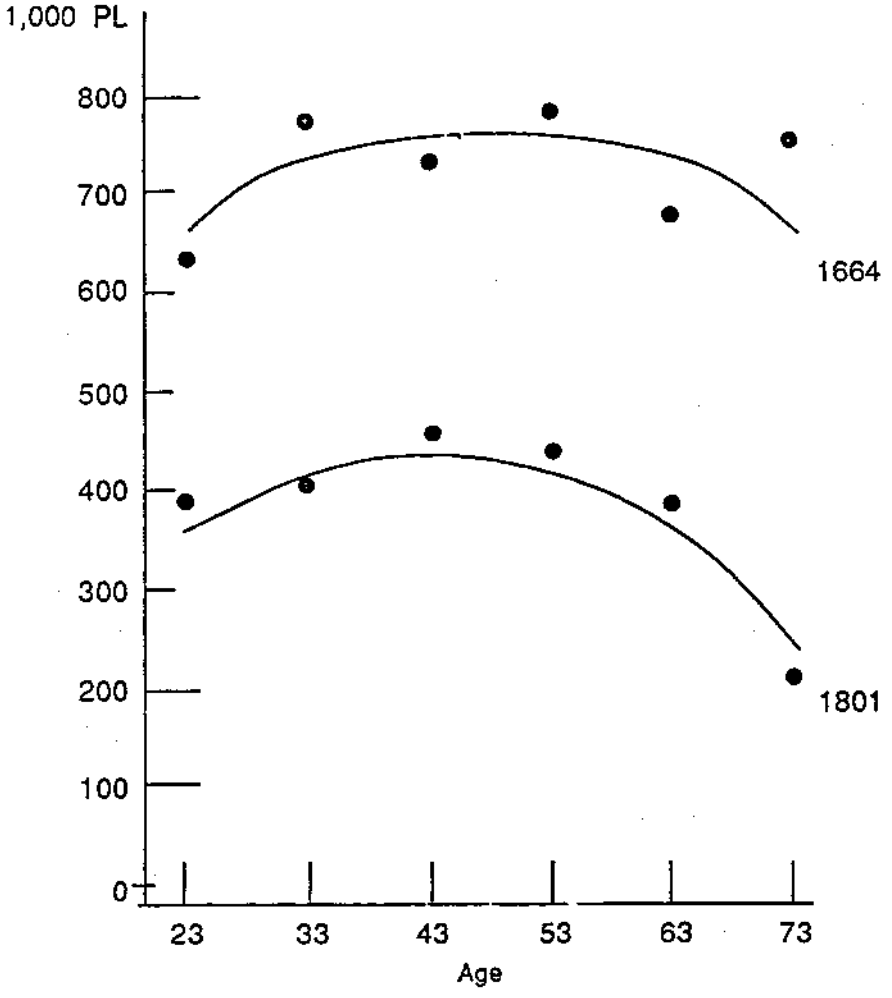
The additive model demonstrated by Chart 1 does not mean that age, as an explanatory variable, was not important. The *relative amplitude* in the occupancy proportions was much greater in 1801 than in 1664. The Gini coefficient was 45% larger in 1801 than it was earlier (weighting each of the 6 points by its class frequency in 1664). The coefficient of variation was 3 times as large in the latter year. Economic conditions had forced a larger degree of inequality over the four generations. One may argue that this movement can be explained in part by economic development as person left the land to become officials, tradesmen, and craftsmen. From the standpoint of land availability, there remains strong evidence of some degree of increase in inequality.

Chart 1 is inadequate in the sense that it tells nothing about the value of the occupants' income or their wealth values. The lesser proportion may have produced more overall product per capita in 1801. Yet the chart does show a downward shift in well-being of people, in general. If more land had been available, the downward shift either might not have occurred or might have been less radical. The configurations shown in the chart also suggest the following questions: In some fashion, did the shift continue downward after 1801? Would the parabola today lie above that in 1664 in the sense that there is less relative inequality between age groups? These questions must remain unanswered in this paper. We measure economic well-being in more sophisticated ways than was customary in previous centuries. The data for 1865 (Table 3) for the rural sector in some ways demonstrate a pattern similar to the pattern in the 1801 data. The data for 1891 (column 24 of Table 2) tangentially do demonstrate the same pattern, again only for the rural sector and, this time, only for a portion of that rural sector. To discuss age-specific income averages in the XXth century is well beyond the scope of this paper. It is commonly thought that the young of Norway did do very well relative to persons of middle age.

Timing in the Life Cycle

The peak age of achievement in 1664 is difficult to place without resorting to curve-fitting. In Chart 1, the parabola illustrated by the six points measuring the proportion possessing land (PL) is $PL = 256 + 21.5\ age - .217\ age^2$, $R^2 = .63$; $N = 750$. The first derivative of this form shows the peak year to have been 49.7, or essentially 50 years. The rationale for finding such a peak in modern times has been provided by Franco Modigliani. An individual works for about 40 years, accumulating enough savings to last him the 20 years remaining in his lifetime. One would expect him then to augment his assets until retirement, if at all possible, so that his income in retirement

Chart 1
THE PROPORTION OF ADULT MALES POSSESSING LAND OR LIVING WITH PARENTS OCCUPYING LAND (PL) IN 1801 AND 1664 IN NORWAY, CLASSIFIED IN SIX AGE CLASSES



Source: See Table 4.

would be at a level close to that during his working life.[7] My chart certainly does not measure either wealth or income, only the proportion of people possessing wealth in real estate. It is, rather, a measure of the end of the period of striving to accumulate assets or perhaps of the end of the period of opportunity. It is unlikely that the modal or median individual wishes to retire at age 50; yet, we can not be certain.

Perhaps we can place a better focus on the configuration and the peak by asking, "Would the age of peak activity have been earlier or later 300 years ago than today?" Assume that the person understood, and surely he did, the life cycle of activity and retirement, as well as his life expectation. Would the peak year have been earlier then? If an individual's life expectancy had been 10 or 20 years less, then he would have ceased striving, on the average, at an earlier date.[8] Even the probability of inheriting land would have been higher at an earlier age.

We can test this hypothesis with our historical data, barring problems of measurement error. The test of the material of Chart 1 seems counter to the hypothesis. The peak of the parabola in 1801 was 45 years. An even better test is the comparison of rural areas in 1664 and 1891, given in Table 2. The comparison of the data in columns 23, 24 and 25 with those in 27 and 28 shows the peak proportion in 1891 to be in the age group 51-55; while it is difficult to place the peak in 1664, it was somewhere between 31 and 55. If we apply the level of 50 years, used previously, we can then argue that the peak had shifted very little in the 227 years. Our final conclusion must be that, over the years, the peak year of acquisition has changed very little, although the peak was less marked at the earlier time. The factors of life expectancy and economic opportunity explain very little or conceivably even counterbalanced each other as they influenced timing in an individual's life.

Conclusion

Indexes of well-being for the young, those of middle age, and the old have been presented for Norway in the years 1930, 1891, 1865, 1801, and 1664. The statistics of income, wealth land ownership, and land occupancy or proprietorship generally show a parabolic pattern, with well-being rising from those of age 20 to a peak at about age 50, followed by at least some

[7] Paul Samuelson, *Economics*, 9th ed. (New York: McGraw Hill, n.d.), p. 759; Franco Modigliani, "The Life Cycle Hypothesis of Saving, the Demand for Wealth and the Supply of Capital," *Social Research*, 33 (Summer 1966), 160-217; and Lee Soltow, "Retirement and Productivity" *Review of Economics and Statistics*, (Feb 1961).

[8] For death rates and life expectancy in previous centuries, see Central Bureau of Statistics of Norway, *Statistical Survey 1948*, p. 50; Central Burau of Statistics of Sweden, *Historisk statistik for Sverige, 1720-1967*, part. 1: Population, p. 111; and Statistical Bureau of Iceland, *Population Census of 1703* (Reykjavik: 1960), pp. 42-3.

downturn among those who were older. The overriding conclusion, in a sense, does substantiate the alternative hypothesis that the life cycle has always existed; but it does not mean that it has remained at a constant parabolic level with the same amplitude. This we can say even though the data are difficult to interpret.[9]

Comparisons are hazardous since data for one year usually do not measure the same activity as data for another year. The best comparison is that between 1664 and 1801; here, parabolas of landholding are parallel with those in 1664, with about 30 more adults per 100 possessing land than among the same age group in 1801. Technically, this configuration means that there was a greater relative amplitude in 1801. I have also attempted to compare the data for 1664 with those for 1891 and 1930, but with only limited success. Perhaps the years 1891 and 1664 again show parallel parabolas. Surely the young in 1930 were less well established than were the young in 1664.

Did the years of adversity display greater amplitude in the age configuration than was demonstrated in better times? Perhaps. Both 1891 and 1801 were considered to be years of lower cyclical activity or, at least, years when activity was not robust. They both appear to have greater relative amplitude in the life cycle than that exhibited in 1664. The data for 1930 admittedly are little better; the indexes for the young indicate a position of dependency rather than of independent economic status.[10] The interesting figures for the relatively good year of 1865 indicate little amplitude in well-being among age groups.

The only clear-cut conclusion that can be drawn is that in 1664 the young and old fared relatively well compared to those of middle age in possessing land. All of this may be only a substantiation of the second hypothesis. There was definitely more land available per person in this early year, and the young were relatively independent.

[9] The Norwegian experience in previous centuries obviously was one where the economy was overwhelmingly rural. In sharp contrast would be the development in the relatively urban society of Holland. If statistics were available for the life cycle there, they might demonstrate an improvement, or at least constancy, in the relative economic position of the young in the XVIIth century. See Lee Soltow, "Income and Wealth Inequality in Amsterdam, 1585-1805," *Economisch- en Sociaal-Historisch Jaarboek*, forthcoming (vol. 52, 1989).

[10] A study of the period after 1930 is difficult to make since the young increasingly delayed entering the labour force as they extended their education. Yet, the young generally improved their status relative to the old. Significantly, inequality of income within each age group tended to decrease. Illustrating these points are income data for men of ages 55, 60, and 64 in 1960 (ages 23, 28, and 32 in 1928), for the years 1928-1960 in one Norwegian city, given in *Lee Soltow, Toward Income Inequality in Norway* (Madison: University of Wisconsin Press, 1965), p. 95.