Testing the Effect of different acceptable Accounting alternatives on Lending Decisions of Commercial Bankers

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INTRODUCTION

Accounting has been defined as a measurement and communication process to provide relevant information about an entity to enable users of information to make informed decisions leading to optimal allocation of scarce resources and to accomplish their objectives.

In recent years there has been substantial dissatisfaction with the current accounting product on the part of a variety of people.

One of the major criticisms is that acceptable accounting principles applicable to any transaction or group of transactions are so numerous that comparison between companies is distorted by the lack of common measuring devices.

Accounting literature abounds with the pros and cons of narrowing the areas of accounting alternatives. On one hand, there are some who maintain that *uniformity* is necessary for financial statements comparability. Others insist that *flexibility* must be maintained because no two entities are indentical and different procedures and methods are necessary to depict results of different entities.[1] Also it has been argued that by disclosing all pertinent information about accounting policies, the users of the financial statements will be able to adjust their decisions based on the information disclosed.

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(1) See, for example, "Uniformity in Financial Accounting", *Law and Contemporary Problems*, Autumn 1965; Eldon S. Hendriksen, "Toward Greater Comparability Through Uniformity of Accounting Principles", *New York CPA*, Vol. XXX, (February 1967), pp. 105-115, for a comprehensive presentation of these ideas.

RESEARCH METHOD

The sample:

The sample for this research consisted on the member banks in the Sixth District of the Federal Reserve System. Table No. 1 shows the total banks surveyed classified by state and bank size.

Total capital was used as a criteria for distinguishing large banks from small banks. Large banks were drawn from the Dun and Bradstreet's Million Dollar Directory of 1976.

Table 1. Member Banks in the sixth District of the Federal Reserve System as of 3/11/1976

State	Small Banks	Large Banks	Total
Alabama	79	36	115
Florida	171	157	328
Georgia	45	28	73
Louisiana	23	22	45
Mississippi	19	10	29
Tennessee	49	24	73
Total	386	277	663

Procedure:

Two sets of comparative financial statements were prepared for two consecutive years. Financial ratios published by the RMA[2] were used as a basis for constructing the financial statements.

The data for both sets of financial statements were identical execpt for the accounting principles used. That is, one set used the first-infirst-out (FIFO) method for inventory valuation and the straight line depreciation

(2) The Robert Morris Associates Annual Statement Studies, (RMA, 1976), pp. 7-10, 123-233.

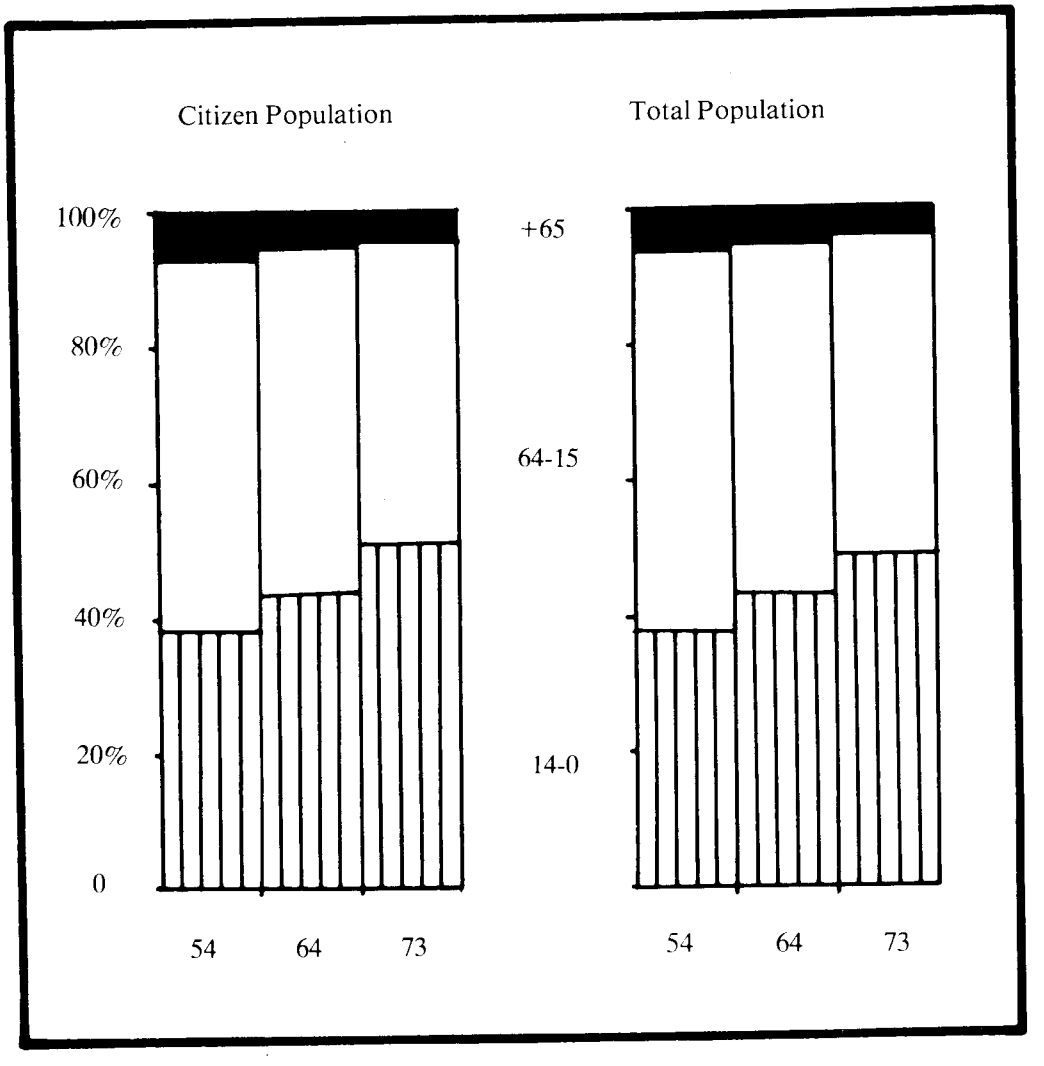

Fig. 3 — Population structure by Board age groups for citizen and total population of Libya during 1954 - 1973.

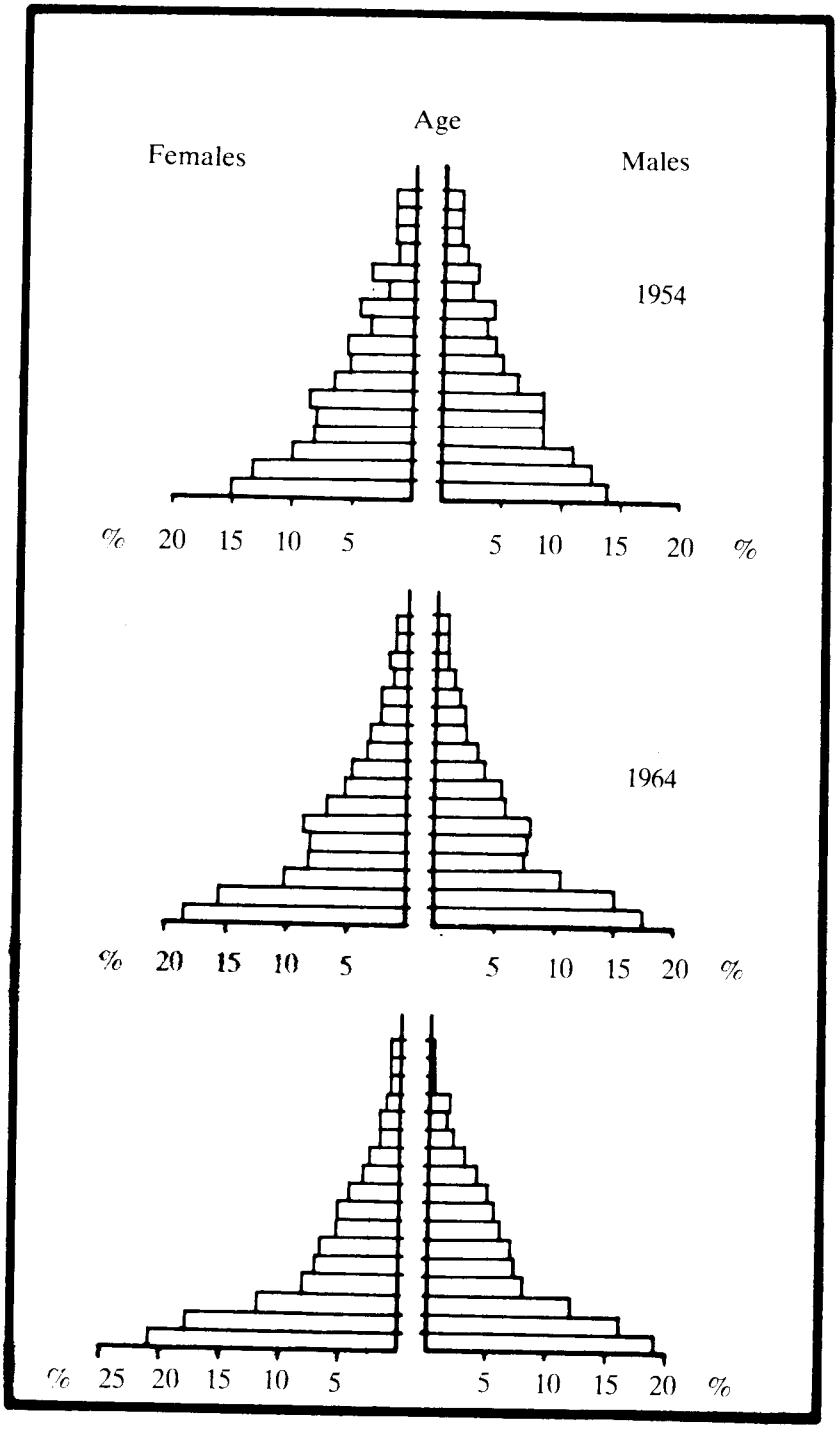

Fig. 2 — Age pyramids for the total population of Libya According to 1954, 1964 and 1973 population censuses.

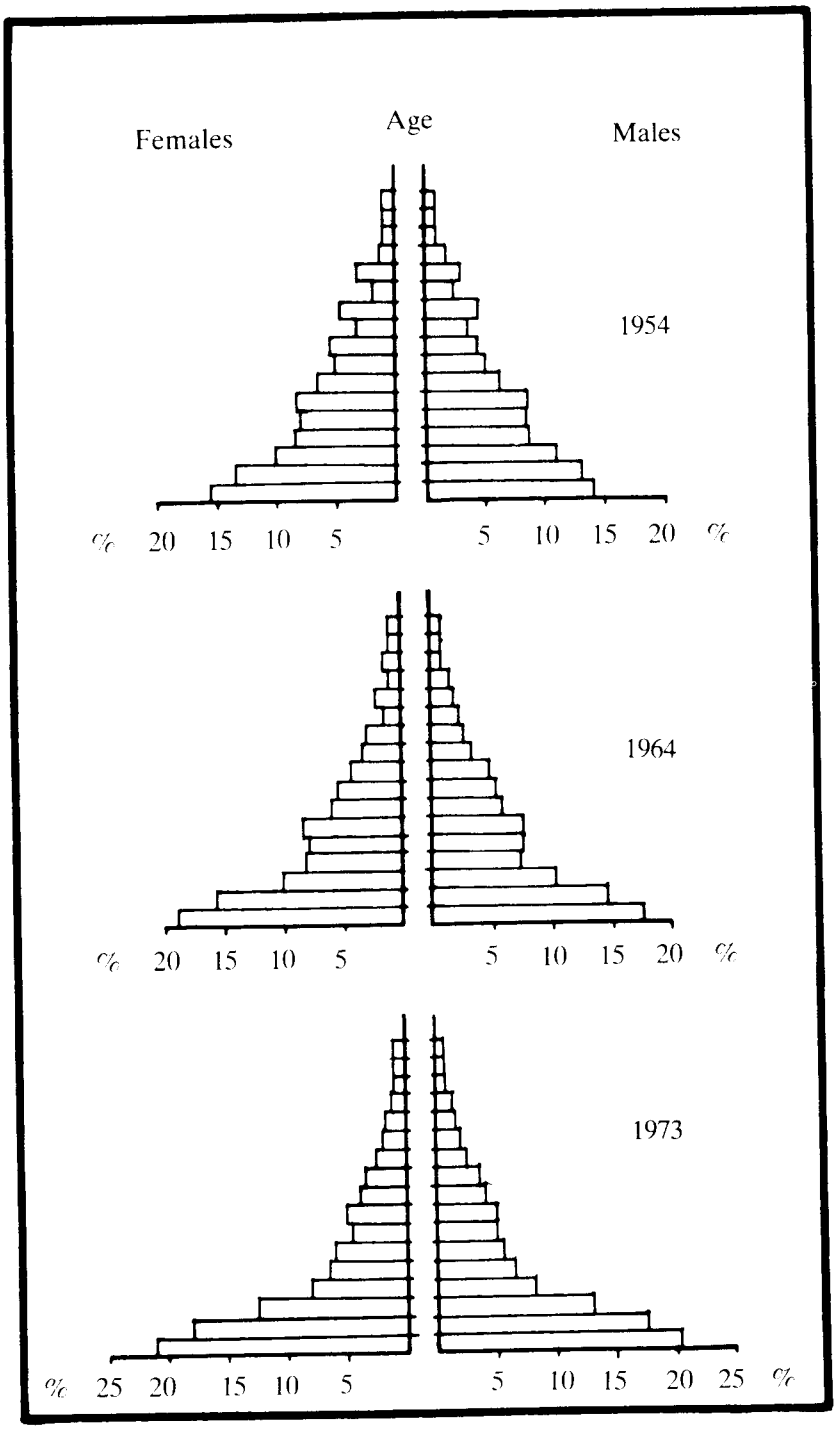

Fig. 1 — Age pyramids for the Libyan citizens According to 1954, 1964 and 1973 population censuses.

Table 5 — Percentage of change in Age-Sex Structure, Median Age, and Dependency Ratio during 1954-1973 for the Citizen Population and Total Population of Libya

	Age Structure %			Median Age in Years	Dependency Ratio
	0-14	15-64	65+		
CITIZEN POPULATION					
Males	+12.793	-10.967	-1.826	-7.140	44.0
	(33.52)	(-19.69)	(-29.69)	(-32.80)	(55.28)
Females	13.070	-11.074	-1.998	-7.430	45.8
	(33.62)	(-20.13)	(-32.70)	(-34.30)	(55.99)
TOTAL	12.930	-11.021	-1.910	-7.280	44.9
	(33.58)	(-19.91)	(31.15)	(-33.52)	(55.71)
TOTAL POPULATION					
Males	9.345	-7.131	-2.214	-5.260	25.8
	(24.82)	(-12.68)	(-36.27)	(-23.74)	(33.16)
Females	12.326	-10.159	-2.166	-7.260	40.4
	(32.08)	(-18.31)	(-35.65)	(-33.075)	(50.37)
TOTAL	10.260	-8.547	-2.191	-6.270	32.4
	(26.98)	(15.29)	(-35.97)	(-28.46)	(41.06)

Table 3 — Crude Birth Rates, Crude Death Rates and Rates of Natural Increase during 1965-1974.

Year	CBR %	CDR %	RNI %
1965	28.0	4.4	23.6
1966	34.2	5.6	28.6
1967	37.5	6.2	31.3
1968	35.3	4.9	30.3
1969	42.1	7.2	34.9
1970	14.3	7.6	33.7
1971	46.5	8.1	38.4
1972	46.6	9.1	37.5
1973	45.7	8.8	36.6
1974	47.1	8.0	39.1

Source: Statistical Group, 1973; Prepared by Census and Statistics Department, Ministry of Planning and Scientific Research, Tripoli, S.P.L.A.J.

Table 4 — Age-sex Structure by Broad Age Groups, Median Age and Dependency Ratio for Graphically smoothed Populations of the citizen Population of Libya during 1954-1973.

Age Group	Age Structure %			Median Age in Years	Dependency Ratio
Census Year	0-14	15-16	65+		
1954 Census					
Males	39.6	57.6	2.8	20.7	73.5
Females	40.3	58.1	1.6	20.6	72.0
TOTAL	39.9	57.9	2.2	20.7	72.8
1964 Census					
Males	44.2	51.2.	4.6	18.0	95.3
Females	45.4	51.7	2.9	17.3	93.4
TOTAL	44.8	51.4	3.8	17.6	94.4
1973 Census					
Males	50.8	44.9	4.3	14.7	122.8
Females	51.7	44.2	4.1	14.3	126.0
TOTAL	51.2	44.3	4.2	14.5	124.4

Table 2 — Age-sex Structure by Broad Age Groups, Median Age and Dependency Ratio in the census years during 1954-1973 for the citizen Population and Total Population of Libya.

Age Group	Age Structure %			Median Age in Years	Dependency Ratio
Census Year	0-14	15-16	65+		
		CITIZEN POPULATION			
1954 Census					
Males	38.162	55.687	6.151	21.77	79.6
Females	38.876	55.014	6.111	21.66	81.8
TOTAL	38.505	55.363	6.132	21.72	80.6
1964 Census					
Males	43.184	51.450.	5.366	19.50	94.4
Females	44.494	50.707	4.794	18.44	97.2
TOTAL	43.811	51.096	5.093	18.98	95.7
1973 Census					
Males	50.955	44.720	4.325	14.63	123.6
Females	51.946	43.940	4.113	14.23	127.6
TOTAL	51.435	44.342	4.222	14.44	125.5
		TOTAL POPULATION			
1954 Census					
Males	37.654	56.241	6.105	22.11	77.8
Females	38.427	55.497	6.076	21.95	80.2
TOTAL	38.026	55.884	6.091	22.03	78.9
1964 Census					
Males	43.372	51.254	5.373	19.34	95.1
Females	44.110	51.114	4.776	18.69	95.6
TOTAL	43.726	51.187	5.087	19.02	95.4
1973 Census					
Males	46.999	49.110	3.891	16.86	103.6
Females	50.753	45.338	3.910	14.69	120.6
TOTAL	48.764	47.337	3.900	15.76	111.3

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1. Sauvy, Alfred: "General Theory of Population", Mathuen & Co. Ltd, 1969, p. 303.
2. Lois, Henry: "Population Analysis and Models", English Edition, Edward Arnold (Publishers) Ltd, 1976.
3. Pressat, Ronald: "Demographic Analysis", Aldine Atherton, Inc., 1972, p. 280.

Table 1* — *Proportional Distributions by age groups and sex in census years 1954-1973 for the citizen Population and total Population in Libya.*

Age Group	1954			1964			1973		
	M	F	T	M	F	T	M	F	T
				CITIZEN POPULATION					
0-	14.2	15.4	14.8	17.7	18.9	18.3	20.4	21.1	20.8
5-	12.9	13.5	13.2	14.8	15.6	15.2	17.5	18.2	17.9
10-	11.1	9.9	10.5	10.7	10.0	10.4	13.0	12.6	12.8
15-	8.8	8.4	8.6	7.6	8.0	7.8	8.4	8.1	8.3
20-	8.6	8.0	8.3	7.8	7.8	7.8	6.7	6.6	6.6
25-	8.4	8.4	8.4	7.8	8.5	8.1	5.7	6.1	5.9
30-	6.4	6.7	6.5	6.2	6.4	6.3	4.8	4.7	4.8
35-	5.0	5.0	5.0	5.6	5.3	5.5	4.8	5.1	5.0
40-	4.4	5.3	4.9	5.4	4.4	4.9	4.2	3.9	4.1
45-	3.7	3.3	3.5	3.6	3.3	3.5	3.7	3.5	3.6
50-	4.5	4.6	4.5	2.7	2.8	2.8	2.7	2.5	2.6
55-	2.6	1.8	2.2	2.5	1.8	2.2	2.0	1.8	1.9
60-	3.3	3.4	3.4	2.1	2.3	2.2	1.7	1.7	1.7
65-	1.8	1.3	1.6	1.7	1.3	1.6			
70-				1.4	1.5	1.5	4.3	4.1	4.2
	4.4	4.8	4.6						
75+				2.2	1.9	2.1			
				TOTAL POPULATION					
0-	14.1	15.2	14.6	17.8	18.7	18.2	18.9	20.7	19.8
5-	12.7	13.3	13.0	14.9	15.5	15.2	16.2	17.8	16.9
10-	10.9	9.9	10.4	10.7	10.0	10.4	11.9	12.3	12.1
15-	8.7	8.4	8.6	7.6	8.0	7.8	8.1	8.3	8.2
20-	8.6	8.1	8.3	7.9	7.9	7.9	7.2	7.2	7.2
25-	8.5	8.5	8.5	7.9	8.5	8.2	6.9	6.6	6.8
30-	6.6	6.8	6.7	6.3	6.5	6.4	5.9	5.0	5.5
35-	5.1	5.0	5.0	5.8	5.4	5.6	5.6	5.1	5.4
40-	4.6	5.4	5.0	4.4	4.5	4.5	5.0	3.9	4.5
45-	3.8	3.4	3.6	3.8	3.4	3.6	4.0	3.4	3.7
50-	4.5	4.6	4.5	2.8	2.8	2.8	2.8	2.4	2.6
55-	2.6	1.9	2.3	2.6	1.9	2.3	1.9	1.7	1.8
60-	3.3	3.5	3.4	2.1	2.3	2.2	1.6	1.7	1.6
65-	1.8	1.4	1.6	1.8	1.4	1.6			
70-				1.4	1.5	1.4	3.9	3.9	3.9
	4.3	4.7	4.5						
75+				2.2	1.9	2.1			

* *Based on the published census tables prepared by the Department of Census and Statistics, Ministry of Planning & Research, Tripoli, Libya.*

As has been mentioned earlier, immigration to Libya is mostly constitued of young males who seek employment at higher wages than those obtained at their areas of origin.

Examination of the entries of table 5 indicates that only slight differences in the percentage of change in the proportional age distribution of the citizen population exist between males and females during 1954-1973.

The differences between the two sexes are greater if the total population of Libya is considered instead.

There has been a higher percentage of increase among female children and a higher percentage of decrease among females at working ages. Consequently the percentage of decrease in the median age was higher among females than among males. There is not so much differences in the percentage of change in the median age of females between the two populations (the native and the total populations). The median age of males is much affected by immigration. The percentage of decrease between 1954 and 1973 for the total population has been lower than that for the citizen population owing to the flow of male immigrants of working ages. Accordingly, the percentage of increase in the dependency ratio is higher for females than for males. Has not been immigration to Libya in the past recent decades the burden of the inactive male population would have been much greater.

The effect of immigration on this dependency is less pronounced for females.

CONCLUSION

Age-sex population distributions for Libya at census years between 1954 and 1973 have been examined. The purpose was to trace any observed patterns in ageing during that period and relate them to patterns observed everywhere. The data used for analysis were presumed deficient but no attempt was made to correct them.

There has been a continuous increase in the proportion of children under fifteen years of age with a simultaneous decrease in the proportion of people at higher ages. This was reflected in the decreasing trend of the average age of population producing a younger population than ever. It indicated a heavier burden of dependency on the shoulders of the productive elements of population, a result which has serious economic and social implications.

The question whether this movement towards rejuvenation by the Libyan population was the outcome of a change in mortality or in fertility was raised and analysed.

Libyan mortality as evidenced by the crude death rate during the period of observation did not go far beyond its initial low level in 1954. Fertility represented by the crude birth rate on the other hand did not show any decreasing trend. It sustained its very high level throughout the whole period with rather increasing pattern. It thus appears that fertility is a more influential factor in determining the magnitude and direction of ageing in Libya.

A concurrently third factor that proved effective in shaping the phenomenon of ageing was immigration.

Being mostly males of working ages, immigrants to Libya who increased in numbers after the discovery of wealthy oil have contributed so much to the change in the age structure of the Libyan population. They had the effect of deflating the proportion of children and of aged persons and inflating the proportion of people at middle age group. The result was a higher average age of population and a lesser burden of dependency on the side of the productive segment of the population.

This is rather a remarkable conclusion since immigration is widely acknowledged of pushing the receiving populations to the other direction of ageing, i.e., towards rejuvenation.

Finally, attention must be drawn to the effect of possible improvement in the quality of data in latest censuses, especially that due to improvement in age reporting. The changes in population age structure were so great as to be accounted for solely by this factor. Acknowledgeing the existence of such a factor by no means implies the invalidity of the assessement made concerning patterns of ageing in Libya during 1954-1973.

table 3.

Altough the death rate appears to be very much under estimated it shows that mortality while starting already at a low level did not assume a noticeable decreasing trend over time. The increasing values of the death rates at latest years rather indicate that the degree of under estimation of that rate has been reduced.

On the other hand, despite the fact that the birth rate is estimated at very low levels [7] in earlier years, it portrays an increasing trend in fertility during the period of observation. Altough there is a large possibility of improvement in age reporting and registration of births in Libya over time, there is no definite sign that continuously high fertility in Libya has come into halt.

It follows that the effect of tolerating high levels of fertility with stabilized mortality at fairly low levels is the corner stone in dragging the Libyan population towards rejuvenation.

To clear up the confusion that may arise as whether or not the observed decreasing trends in ageing are the product of improvement in the quality of age data, graphically smoothed age-sex distributions for the three censuses considered were alternatively examined. Corresponding proportional distributions and other ageing measures were calculated. The results are shown in the table 4.

Comparison between the two sets of figures, one for smoothed age distributions (table 2) and the other for non-smoothed distributions (table 5), shows similar trends in ageing. This implies that the movement of the citizen Libyan population towards rejuvenation is genuine and is not due solely to improvement in the quality of age data. However, the deviations between the two sets of results are larger at 1954 and 1964 censueses than those at 1973 census.

(7) The under-enumeration of deaths appears to be greater than the under-enumeration of births. Usually birth statistics are more accurate than death. Statistics for registration of births has more social and legislative incentives than do registration of deaths.

EFFECT OF IMMIGRATION TO LIBYA

After the discovery of oil in 1959 and the emergence of economic prosperity of the country, Libya has been the destination of large flow of the immigrants from elsewhere, especially the neighbouring Arab countries.

Those immigrants are mostly of skilled young people who are looking for higher wages and better opportunities. The effect of this influx of immigrants to Libya is reflected upon the population age structure at the latest two censuses.

The addition of non-Libyan elements of middle ages to the native elements has the effect of deflating the proportions of children and of aged persons at working ages in the total population.

We can easily recognize the extent of this phenomenon by considering the percentage of change in the age structure and other related measures during 1954-1973 to the initial figures of 1954 for the native population and for the total population (including immigrants). Considering both sexes together, the increase in the proportion of children during 1954-1973 is about one third and one forth the figures of 1954 for the citizen population and for the total population respectively, see table (5). On the other hand, the percentage of decrease in the proportion of the people at intermediate ages is lower for the total population than for the citizen population. Also, the percentage of decrease in the proportion of aged persons is higher for the total population than for the citizen population. However, the difference between the two populations is not as large as in the case of other age groups.

As consequence, the percentage of decrease in the median age and that of increase in the dependency ratio are lower if the Libyan and non-Libyan populations were combined. This elucidates the role played by immigration to Libya upon the process of ageing during 1954-1973.

Without these flows of immigrants the average age of population would be smaller and the dependency burden of the non-productive elements afforded by the productive elements would be greater.

The effect of sex differential in migration on ageing can be easily assessed when analysing the percentage of change in ageing measures for each sex separately (table 5).

bya, as it is the case in most of the developing countries, suffer from many of the deficiences usally inherent in such data as far as accuracy and completeness are concerned.

However, since we are mostly interested in viewing general trends in ageing patterns and since these deficiences are likely not to produce seriously distorting effects on the phenomenon investigated there will be no attempt to specify these deficiences or to remedy them or this will be far beyond the purpose of the present study.[5] Nevertheless, a comment on the possible extent of some of the deficiencies upon the problem investigated will be given as the need arises.

THE FINDINGS

Inspection of Libyan age data between 1954 and 1973 reveals some interesting points. In presenting these points, we shall confine the analysis to population structure by broad age groups and other ageing measures that give an overall picture of the phenomenon of ageing.

There has been a considerable increase in the proportion of people at young ages since 1954. This was accompanied by a decrease, though of a lesser extent, in the proportion of people at older ages. To quote some of the figures, the proportion of children under fifteen years of age in the native population of Libya has risen from 38.5 percent in 1954 to 51.4 percent in 1973, see table (2). On the other hand, the proportion of people in the age groups 15-64 and 65 + for the same population have dropped from 55.4 and 6.1 percent in 1954 to 44.3 and 4.2 percent in 1973.

Such changes in the structure of the Libyan population were reflected in the shape of the age pyramids representing the census years considered.

Those pyramids of 1964 and 1973 are of wider bases and slimmer tops than the pyramid of 1954, figure (1).

Accordingly, the median age has markedly fallen from 21.7 years in 1954 to 14.4 years in 1973 and the dependency ratio has increased from 80 dependents per 100 productive elements in 1954 to 126 dependents per 100 productive elements in 1973.[6] The implication of this is that the productive elements of the Libyan population are bearing higher burden of dependency than before. These changes altogether signify that the direction of the process of ageing in Libya between 1954 and 1973. They clearly indicates that the Libyan population is becoming a younger population than it used to be.

The greatest amount of change in the age structure of the citizen population of Libya occurred between 1954 and 1964. This is due partly to the possible improvement in age reporting since 1964. It is assumed that, being of better quality, the latest censuses of 1964 and 1973 are characterized by lower rates of under enumeration of young children than is the earlier census of 1954.

Similar patterns of chance are observed for each of the two sexes with minor deviations from the general pattern. It appears that there are no significant differences between males and females in that respect.

DECLINING MORTALITY OR DECLINING FERTILITY

We now turn to investigate the causes responsible for such observed trends of ageing in Libya during 1954-1973. As we know, the main factors affecting the process of ageing are mortality, fertility and migration.

Mortality and fertility can be studied through vital registration records.

Vital registration in Libya has come into existence only recently, specifically in the sixties. The officially published figures on birth and death rates and rates of natural increase for the years 1965-1974 are shown in

(5) An account of the defects of census and vital registration statistics in Libya may be found in a number of reports made by final year students of Demography in the Department of Statistics, Faculty of Economics and Commerce Garyounis University under the supervision of Dr. K. Vankatacharya. See for example, Study of Sex Age Distribution of Libya, Census Data 1954-1964, "by I.S. Haperrah, June 1976 and Study of Sex-Age Distribution by single years of 1973 census of Libya, by S.A. Ali, May, 1978.

(6) The dependency ratio is a ratio of the number of non-productive elements of population (children under 15 + people 65 years of age and over) and the productive elements (people in working ages 15-64).

the history of past events and offers useful indications concerning the causes and effects of ageing phenomenon experienced by that particular population.

MECHANISM OF AGEING: A PREVIEW

The recording of the phenomenon of population ageing dates back to the end of eighteenth century and the beginning of the nineteenth century. It started in France and spread out slowly to other industrialized countries, especially Western European countries.[2]

Remarkable changes in the age distribution of these populations were observed. There was a definite increase in the proportion of old people (60 or 65 + years of age) and a definite decrease in the proportion of children (under fifteen years of age) or of young people (under twenty years of age).

It was believed first (some still believe now) that declining mortality caused by progress in economic and health technology experienced by the industrialized countries was responsible for demographic ageing. It was argued that the decline in mortality has led to a prolongation of man's life and has given a better chance to newborn children to reach advanced ages. As a result the proportion of aged people has increased.

In fact, a diminishing mortality not only affects people at old ages but also affects people at other ages (young and middle aged) with nearly the same degree. The gains achieved by each of the different age classes of people may compensate each other with the result that the proportion of each class to the total population remains unchanged.

The confusion occurred because a decline in mortality was accompanied in many countries, by a decline in fertility either simultaneously or after a very short period of declining mortality. Therefore, the effects of both factors on population ageing were mixed while declining fertility in effect contributed with larger share than did declining mortality.[3]

A third factor that affects the process of ageing is migration. Migrants are people removed from one country and added to another. Migratory movements are capable of producing considerable effects on the age composition of both the receiving and sending areas. In general, migration is selective in the sense that migrants are usually people of young ages who seek better oppurtunities elsewhere. The transfer of such people from their country of origin to some other destination has the effect of decreasing the proportion of young people in the place of origin and increasing it in the place of destination. The implication of this is an ageing of population in the former place and a rejuvenation in the latter.

MECHANISM OF AGEING: THE CASE OF LIBYA

We now proceed to study the phenomenon of ageing in Libya to see whether or not the observed patterns of change follow the general (theoretical) patterns.

A natural entry to such a study is through age statistics obtained from official population censuses of Libya in recent decades, namely, 1954, 1964 and 1973 censuses.[4]

For each of the three censuses, detailed proportional age distribution (by five age groups) as well as distributions by broad age groups will be considered. Other indices of ageing, namely, the median age and the dependency ratio will be calculated for each sex and for the total population. Age pyramids for the three censuses will be pictured. To asses the effects of migration, age-sex compositions of the native population and also those ot the population of Libya for the three censuses will be examined.

Before proceeding to the analysis of these data a word of caution regarding their accuracy is in order. Census age statistics in Li-

(2) Lois, Henry, Population, Analysis and Models. English Edition, Edward Arnold (Publishers) Ltd, 1976.

(3) In France, decline in mortality and in fertility occurred simultaneously so that the increase in Population size in the nineteenth century was less pronounced than in other countries and therefore, ageing occured earlier, see Ronald Pressat, Demographic Analysis, (Aldine Atherton, Inc. 1972,) p. 280.

(4) There have been censuses taken prior to 1954 but not on a regular basis. All censuses undertaken after independence in 1951 de jure basis censuses.