DISAGGREGATING DEMOGRAPHIC FACTORS OF LABOUR CHANGE IN TRINIDAD AND TOBAGO

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Abstract: Age pattern of labour force participation for women is generally observed to be irregular in many countries; showing withdrawal and re-entry into labour force several times during the course of their active lives. In contrast to Trinidad and Tobago, the age pattern does not seem to present this undulated feature; and besides, the number of working women has tremendously increased, but there is no recent study to indicate the component parts of these changes in comparison to men. This paper attempts to investigate these changes by constructing a series of male and female labour force life tables, which are useful in studying labour force entry on account of population growth and the desire to participate as factors of labour force supply, and deaths and retirements on the other hand, as depletion factors. The findings may provide ways for policy-makers to determine appropriate estimates of work life expectancy for workers who suffer a loss of earnings due to injury or death.

Keywords: *Labour force, Working life expectancy, Total life expectancy, Labour force replenishment, Labour force replacement rate, Labour force replacement ratio, Age pattern of work, Active years and Inactive years.*

INTRODUCTION

An overview of age pattern of work in Trinidad and Tobago

The age pattern of women's participation rates in Trinidad and Tobago is dome shape, rising gradually from low to a maximum point, and thereafter falling consistently to a bare minimum within the retirement age groups, generally depicting the overall age pattern of labour force participation for men. Beaie (2009) noted that the differences between the two are presumably due to low participation rates of women as compared to men. The pattern is contrary for women in many countries, where Cotter et al. (2004) described women's age pattern of participation as double maxima pattern; noting that the likelihood that an average woman will be in the labour force varies substantially over her life; and that many of them exit the labour force when they become mothers; as such, labour force participation rates have traditionally been lower for women in the late 1920s through early 1940s than they were for younger women or older women.

Similarly, United Nations (1968) emphasised that one major problem which generally limits the interpretation of female economically active life tables is the pattern

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of their participation rates. In many countries, women withdraw and re-enter labour force several times during the course of their active lives; thus, making it impossible to apply the assumption, "all persons who enter the labour force at any time in their lives do so prior to the age at which the activity rate reaches its maximum, and no survivors retire into inactive status prior to that age". They are not alone to comment on the way women work. For example, Amara and Braima (2006) said caution needs to be exercised in making direct comparison in working life expectancies between males and females because of the peculiar nature of female employment. Females are more likely to have their working life interrupted for various reasons such as marriage, pregnancy, etc. than males, and Mallela and Wilcox-Gok (2003) using what they called 'fuller models', concluded that marital status and the number of dependent children have significant influence on women's probability of employment.

Noting the findings of the earlier researchers, the 2000 census results for Trinidad and Tobago showed tremendous changes in the size of female labour force exemplified by the age pattern described; but, there is no recent study to show the demographic components of these changes in comparison to the men.

Objectives of the study

This study attempts to analyse the quantitative aspects of the male and female labour force in 2000, by constructing a series of labour force life tables, which are useful in studying the process of growth and structural changes of the labour force. The specific objectives include to:

- compute the length of active life

- calculate the loss of active years by mortality

- estimate basic indices of labour force growth, such as labour force entry and replacement rates, and rates due to losses by deaths and retirements and other related measures and

- conclude and make recommendations.

METHODOLOGY

By definition, the Working Life Expectancy (WLE) refers to the average number of years that a person is likely to spend in the labour force during his/her lifetime. It begins with a hypothetical cohort of 10,000 newborns, who are subject to age-specific mortality risks and rates of labour force accession.

Data requirements

The following data are required in the computation of an abridged working life table:

- population in five year age groups

- deaths in five year age groups or mortality life tables for males and females and

- age specific labour force participation rates.

Assumptions

The construction of the abridged working life tables follows an earlier techniques developed by the United Nations (1968) and Kpedekpo (1969), which were based on the following assumptions:

- that all persons who enter the labour force at any time in their lives do so prior to the age at which the activity rate reaches its maximum, and no

survivors retire into inactive status prior to that age

- that the ages at which individuals retire are independent of the ages at which they enter the labour force and

- that the rate of mortality at each age is the same for economically active and inactive persons.

DETAILED CALCULATIONS AND RESULTS

Measures of the length of active life

Table 1 sets the numerical comparison of male and female economically active and total life expectancies. The expectation of inactive years for each age group was obtained by subtracting active life at that age group for each sex separately from the

Table 1   Measures of length of active and inactive life for males and females, Trinidad and Tobago: 2000

Age	Male			Female		
	Expectation of life			Expectation of life		
	In total years (e_{0x})	In labour force (e_{wx})	In inactive years	In total years (e_{0x})	In labour force (e_{wx})	In inactive years
(1)	(2)	(3)	(4) = (2) – (3)	(5)	(6)	(7) = (5) – (6)
0	68.3	36.6	31.7	73.7	21.9	51.8
1–4	68.9	37.4	31.4	73.8	22.2	51.6
5–9	65.2	37.6	27.6	69.9	22.2	47.7
10–14	60.3	37.7	22.6	65.0	22.3	42.7
15–19	55.5	37.8	17.7	60.1	22.3	37.8
20–24	50.7	36.0	14.7	55.2	21.4	33.8
25–29	46.1	32.0	14.1	50.4	18.6	31.8
30–34	41.7	27.7	14.0	45.6	15.6	30.0
35–39	37.3	23.4	14.0	40.7	12.7	28.0
40–44	33.1	19.1	14.0	35.9	10.0	26.0
45–49	29.0	14.8	14.1	31.2	7.2	24.0
50–54	24.9	10.6	14.3	26.6	4.7	21.9
55–59	21.2	6.7	14.5	22.3	2.7	19.6
60–64	17.9	3.3	14.6	18.3	1.2	17.1
65–69	14.7	1.5	13.2	14.6	0.5	14.1
70–74	12.0	0.8	11.2	11.4	0.3	11.1
75–79	9.7	0.5	9.2	8.6	0.1	8.5
80+	7.8	0.3	7.5	6.5	0.1	6.4

Note: Derived from Appendices 1 and 3

total expectation of life (i.e., male's inactive years = col.2 minus col.3). These estimates were extracted from Appendices 1 and 3 and transcribed in Table 1 for easy reference to compare male and female estimates of length of active life.

The result shown in Table 1 and graphically depicted in Figure 1 reflects a familiar pattern of working life, declining gradually with age. The differences between males and females are more noticeable in early ages and diminish gradually with increasing age, but with males average remaining years of active work life being greater than females throughout across the ages. For example, a newly born baby boy and baby girl would expect to live for 68.3 years and 73.7 years respectively, out of which 36.6 years and 21.9 years would be spent in

the labour force. This reciprocally, implies that, they would spend an average of 31.7 years and 51.8 years, respectively in inactive life. Similarly, an inactive male who has reached the official working age of 15 years old in Trinidad and Tobago, could expect to live for 55.5 years, 37.8 years of which would be spent in the labour force, and for a female reaching the official working age of 15 years old in Trinidad and Tobago, she could expect to live for 60.1 years, 22.3 years of which would be spent in the labour force.

On the whole, the number of years spent by females in inactive life is more than twice that of males (37.8 years against 17.7 years); an undisputable finding depicting the interruption of female's labour force participation due to various factors such as marriage, child-

Fig. 1: Working Life Expectancy by Age and Sex, Trinidad and Tobago: 2000
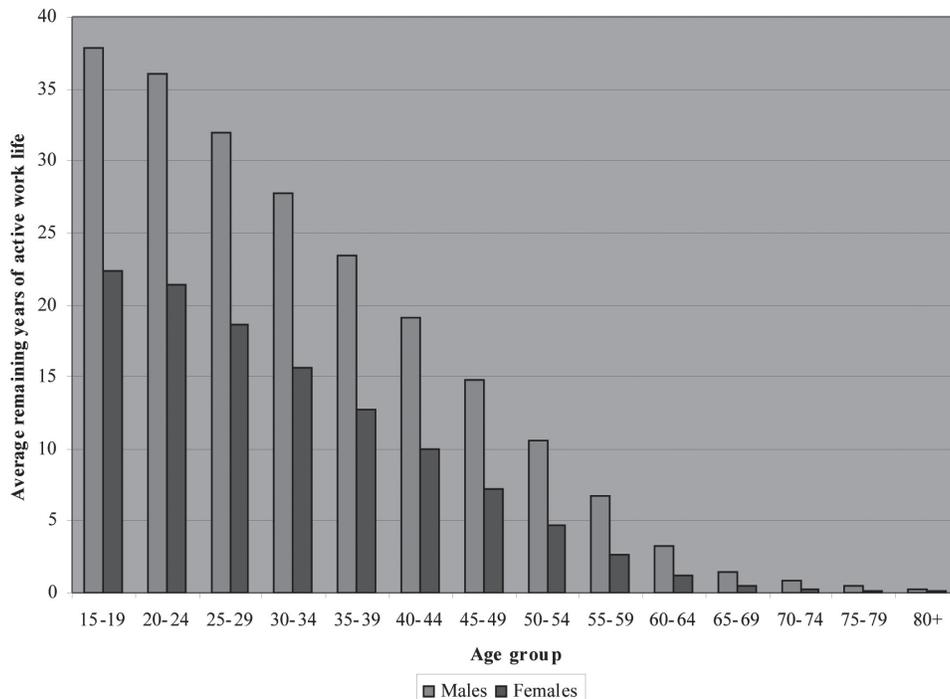
Source: Table 1

bearing and upbringing, etc., in Trinidad and Tobago (Table 1 and Figure 1).

Loss of active years by mortality

The estimate of average remaining years of active life for survivors in the labour force at the beginning of year of age and inactive life as presented in Table 1 is an aggregate, because not all members of the labour force would pass those stages; hence, accordingly, some may die while passing through and others would survive, and exit from the

labour force either by means of voluntary retirement due to exhaustion of age, and forced retirement due to employer's rules and regulation as well as disability to continue working. As such, the second intermediate variable, which is death of active persons, is presented to account for the loss of active years by mortality.

The calculation to first derive the gross years of active life is carried out in Table 2 by applying the age-specific activity rates to the five-year age interval or number of years

Table 2 Calculation of gross years of active life in ages 15 years and over, and 15–79 years for males and females, Trinidad and Tobago: 2000

Age	Male			Female	
	Number of years in age interval	Age specific activity rates	Average number of active years in age interval	Age specific activity rates	Average number of active years in age interval
(1)	(2)	(3)	(4) = (2) × (3)	(4)	(5) = (2) × (4)
15–19	5	38.9	1.95	18.4	0.92
20–24	5	86.2	4.31	58.3	2.92
25–29	5	93.9	4.70	61.0	3.05
30–34	5	94.8	4.74	58.3	2.91
35–39	5	94.9	4.74	56.2	2.81
40–44	5	94.5	4.72	55.8	2.79
45–49	5	92.8	4.64	51.9	2.59
50–54	5	88.3	4.41	43.5	2.17
55–59	5	75.9	3.79	31.8	1.59
60–64	5	42.6	2.13	14.6	0.73
65–69	5	17.3	0.86	5.8	0.29
70–74	5	9.6	0.48	3.4	0.17
75–79	5	6.5	0.33	2.1	0.10
80+	10	3.9	0.39	1.2	0.12
Total, 15–79		–	41.81	–	23.06
Total, 15 & over		–	42.19	–	23.16

Note: Age interval for 80 years and over is arbitrarily set at 10 because no significant number of persons work after 90 years in Trinidad and Tobago

expected in each age group. The interval for the open age, eighty years and over was arbitrarily set at ten years, based on the assumption that no significant number of persons would continue to work in Trinidad and Tobago after age 90.

The gross active years are therefore calculated and reflected in Table 2, giving number of years an individual passing through each age interval would be economically active. For instance, the gross active years for the males, 20–24 years is 4.3 years, 25–29 years is 4.7 years and so on. The gross active years of the entire age range, 15 years upward, is derived as a summation of the gross active years across the age groups; hence, the measure comes to 42.2 years for males and 23.2 years for females. The gross active life then yields to 41.8 years and 23.1 years for males and females respectively, when the age range is limited to those 15–79 years (Table 2).

However, our main interest is not simply the gross years of active life, but to indicate:

• the effects of mortality on the expectation of active life at birth and

• the effects of mortality at the beginning age of entries into the labour force.

The loss by mortality, derived as a difference between total gross years of active life and expectation of active life or 'net years of active life' is reflected in Table 3. And, given that the expectation of active life at birth is 36.6 years and 22.3 years, respectively for males and females, 5.6 years and 0.9 years represent loss of active years due to mortality. This subsequently implies that mortality affects males' active life at birth to greater degree than females (about 15.4% as compared to only 4.0% among the females).

Table 3 Summary measures of mortality influence on labour force, Trinidad and Tobago: 2000

Measures of mortality influence on labour force	Male		Female	
	Active years in all ages 15 and over	Active years in all ages between 15 & 79	Active years in all ages 15 and over	Active years in all ages between 15 & 79
1. Gross years of active life	42.2	41.8	23.2	23.1
2. Expectation of active life at birth	36.6	37.7	22.3	22.3
3. Loss of active years by mortality (1–2)	5.6	4.1	0.9	0.8
4. Expectation of active life at age 15	37.8	37.7	22.3	22.3
5. Loss of active years by mortality after age 15 (1–4)	4.4	4.1	0.9	0.8
6. Percent of active years lost due to mortality at birth (%)	15.4	11.0	4.0	3.6
7. Percent of active years lost due to mortality at age 15 (%)	11.7	11.0	4.0	3.6

Note: Derived from Appendices 1 and 3 and Table 2

Similarly, loss of active years by mortality at the beginning age of entry into the labour force was estimated as 4.4 years for the males, which represents 11.7% of male active life, and 0.9 years for females, which also accounts for 3.6% (Table 3).

In all cases, despite the higher longevity of women in Trinidad and Tobago, the estimates of gross and active life expectancies are higher for men than women (see Tables 2 and 3), a finding which reflects the gender differences in labour force participation in the country.

Indices of labour force growth

One of the principal uses of economically active life tables is to estimate the indices of labour force growth or crude rates of the labour force replenishment, measured by new entrants on the one hand, and its depletion by deaths and retirements on the other. These crude rates were derived by applying the age-specific rates in Appendices 2 and 4 to the figures for the corresponding age groups in the actual labour force and inactive population. For easy reference, some figures of a portion of the economically active life tables are transferred from the two Appendices and inserted in Table 4 and used to derive the rates shown in Table 5. For example, using Table 4 to illustrate, the entry rate for males was calculated by dividing the total estimated number of net annual entries in column 6, by the total active male population in column 3, multiply by 1000 (i.e., $10,887/307,099 \times 1,000$). The same procedure was repeated for retirements and losses by deaths of active persons for males and females separately. The difference between the rate of entries and the sum of the rates of retirements and losses by deaths is known as labour force replacement rate. The replacement rate, also considered to be an index of potential labour force growth, comes to 19.1 per 1,000 of the

male labour force, and 26.1 per 1,000 of the female labour force in 2000 (Table 5).

Another important index is the labour force supply and depletion factors, measured by replacement ratio, generated from Table 4 and summarised in Table 5 also for easy reference. The ratio is referred to as (UN, 1968) "an index of the pressure the labour market represented by demands of entering workers for jobs, in proportion to number of jobs being vacated by retirement and death". The replacement ratio for males is derived by dividing the annual number of entries into the labour force by the sum of retirements and losses by death multiply by 100 (i.e., $\{10,887/(3,383 + 1,648) \times 100\}$). This result implies that of the population factors which influence labour force growth, deaths and retirements account for lesser proportion; and as such, the replacement ratio is significantly high in Trinidad and Tobago. For example, every 100 males and females leaving the labour force by deaths and retirements, they are replaced by approximately 216 and 314 new entrants, and for every 1,000, by 2,164 and 3,135 new entrants and so on respectively (Table 5).

Average age of entry and exit from labour force

The mean age of entry and exit is an important indicator for policy formulation relating to the length of working life. It enables policy makers to set employment rate targets for the new entrants and senior citizens and ensure that the public pension system is able to meet the demands of the retired population.

The calculation is carried out by taking the net entry and retirement by age as reflected in Table 4, columns 6 and 7 for males, and columns 12 and 13 for females respectively to represent gross figures. The result of the

Table 4 Estimates of annual losses from labour force by deaths and retirements, and gains by entries from inactive population, males and females; Trinidad and Tobago: 2000

Age	Male						Female					
	Population			Estimated annual number of			Population			Estimated annual number of		
	Total	Active	Inactive	Loss by death of active persons	Entries into LF	Retirement from LF	Total	Active	Inactive	Loss by death of active persons	Entries into LF	Retirement from LF
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
15–19	61,730	24,015	37,715	27	7,729		61,121	11,250	49,871	6	4,690	
20–24	49,892	42,983	6,909	67	2,744		48,906	28,534	20,372	20	2,085	
25–29	42,819	40,228	2,591	54	318		42,296	25,791	16,505	17		8
30–34	40,106	38,033	2,073	178	96		41,035	23,919	17,116	18		193
35–39	44,818	42,514	2,304	179		29	45,737	25,722	20,015	27		103
40–44	39,759	37,564	2,195	169		108	39,972	22,316	17,656	37		165
45–49	33,347	30,957	2,390	188		235	32,660	16,938	15,722	52		364
50–54	28,049	24,758	3,291	233		521	27,000	11,737	15,263	64		406
55–59	20,385	15,466	4,919	221		955	20,664	6,579	14,085	64		343
60–64	15,889	6,773	9,116	149		935	16,697	2,439	14,258	40		133
65–69	12,637	2,186	10,451	79		435	14,049	821	13,228	23		25
70–74	9,610	922	8,688	51		103	10,826	366	10,460	17		7
75–79	6,837	446	6,391	36		35	7,945	166	7,779	13		4
80+	6,480	254	6,226	17		27	9,260	107	9,153	8		4
Total	412,358	307,099	105,259	1,648	10,887	3,383	418,168	176,685	241,483	406	6,775	1,755

Note: Derived from Appendices 2 and 4

Table 5 Labour force entry and exit rates, replacement rate and ratio, males and females; Trinidad and Tobago: 2000

Index of labour force growth	Annual crude rate	
	Male	Female
1. Gains by entries per 1,000 labour force	35.5	38.3
2. Losses by retirements per 1,000 labour force	11.0	9.9
3. Losses by death per 1,000 labour force	5.4	2.3
4. Replacement rate per 1,000 labour force {(1) – (2 + 3)}	19.1	26.1
5. Replacement ratio per 100	216.4	313.5

Note: Derived from Table 4

Table 6 Average age of entry and exit/retirement from labour force by sex, Trinidad and Tobago: 2000

Measure	Male	Female	Total
1. Average age of entry into labour force (in years)	18.5	18.6	18.6
2. Average age of exit/retirement from labour force (in years)	57.2	50.2	56.7

Note: Derived from Table 4

calculation is reflected in Table 6, and shows that the median age or about 50% of both males and females in Trinidad and Tobago enter labour force by 18.6 years. This finding is in line with the school enrolment pattern in the country, where by this age (Beaie, 2009), only very small percentage of the school age children are still in school. Although 50% of males and females who entered labour force do so by age 18.6 years, but on average, the males are deemed to stay seven years longer than the females (see Table 6), when the result also shows that the male median age of retirement from labour force is 57.2 years and 50.2 years for the females.

CONCLUSIONS AND RECOMMENDATIONS

Work-life expectancy represents the expected length of life spent in the labour force; thus it is an estimate of the average expected number of years every males and females in Trinidad and Tobago will work. The calculation begins with a hypothetical cohort of 10,000 births of employed males and females who survived to each specific age. It provides useful indicators such as labour force replacement rate and replacement ratio, and average expected working years of entry into and exit or withdrawal from labor force.

The measures are very useful to policy-makers, for they are used to determine changes in the labour force, expected total consumption and output by different age groups. Social security system also uses working life table estimates to settle social security claims and benefit payments arising from occupational injury by their contributors.

Taking into consideration that the average remaining years of active life could be disrupted by periods of unemployment

arising from factors such as occupational injuries, redundancies, sickness, etc., one would conclude that working life for females in Trinidad and Tobago is short, despite the longevity of females as compared to the males. Also, the high labour force replacement ratio means that the job market in Trinidad and Tobago would have to create additional jobs of 54% and 68%, respectively, of whatever existing size of males and females exiting from labour force annually in order to curb with the surplus labour supply. However, these results requires further investigations, for instance, using cohort activity rates over a long period technique adopted by Durand (1948) or using multivariate approach to determine factors that influence women's decision to enter labour force in Trinidad and Tobago.

Finally, the low working life for females implies that there is a need to set clear targets to increase the participation rate of women and establish policy to delay their exit from the labour force. Apart from this, research on developing working life tables for Trinidad and Tobago should be prioritized because of its usefulness. In the absence of such scientific means of computing benefits, lawyers or the court system in Trinidad and Tobago may arrive at compensation claims arbitrarily or rely on guess work for workers affected due to injuries or death.

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Appendix 1: Abridged Table of Economically Active Life, Male Population of Trinidad and Tobago: 2000

Age interval (1)	Economic active rate (%) Within age group (2)	Economic active rate (%) Beginning of age group (3)=(l5+l6)/2	Survivors at beginning of age group Pop lx (4)	Survivors LF lwx (5)=(4)*(3)	Stationary population Pop Lx (6)	Stationary population LF Lwx (7)=(6)*(2)	Subsequent year in stationary population Pop Tx (8)	Subsequent year LF Twx (9)	Average remaining life Pop ex (10)=(8)/(4)	Average remaining life LF ewx (11)=(9)/(4)	Inactive years (12)=(10)-(11)	Net increase(+) or decrease(-) (13)	Death of active persons Number (14)	Death Rate per 1000 active (15)=(14)/(7)	Net entries into economically activity Number (16)	Net entries Rate per 1000 active (17)=(16)/{(6)-(7)}	Net retirements into inactive status Number (18)	Net retirements Rate per 1000 active (19)=(18)/(7)
0	0	0	10,000	0	9,781	0	682,527	365,673	68.25	36.57	31.69							
1 - 4	0	0	9,766	0	38,892	0	672,746	365,673	68.89	37.45	31.44							
5 - 9	0	0	9,724	0	48,570	0	633,854	365,673	65.19	37.61	27.58							
10 - 14	0	0	9,704	0	48,461	0	585,283	365,673	60.31	37.68	22.63							
15 - 19	38.9	0	9,680	0	48,293	18,787	536,822	365,673	55.46	37.78	17.68	6,026	21	1.1	6,047	204.9		
20 - 24	86.2	62.5	9,637	6,026	47,968	41,326	488,530	346,886	50.69	35.99	14.70	2,574	64	1.5	2,638	397.2		
25 - 29	93.9	90.1	9,550	8,600	47,429	44,559	440,562	305,560	46.13	32.00	14.14	293	59	1.3	352	122.7		
30 - 34	94.8	93.9	9,421	8,893	46,744	44,328	393,133	261,001	41.73	27.70	14.02	-95	207	4.7	112	46.5		
35 - 39	94.9	94.4	9,276	8,798	45,861	43,503	346,389	216,673	37.34	23.36	13.98	-213	183	4.2			30	0.7
40 - 44	94.5	94.7	9,068	8,585	44,752	42,281	300,528	173,170	33.14	19.10	14.04	-312	190	4.5			122	2.9
45 - 49	92.8	93.7	8,833	8,272	43,402	40,292	255,776	130,889	28.96	14.82	14.14	-550	245	6.1			306	7.6
50 - 54	88.3	90.5	8,528	7,722	41,449	36,585	212,374	90,597	24.90	10.62	14.28	-1,115	344	9.4			771	21.1
55 - 59	75.9	82.1	8,051	6,608	38,611	29,294	170,925	54,012	21.23	6.71	14.52	-2,227	418	14.3			1,809	61.8
60 - 64	42.6	59.2	7,393	4,380	35,059	14,945	132,314	24,718	17.90	3.34	14.55	-2,394	330	22.1			2,064	138.1
65 - 69	17.3	30.0	6,631	1,987	30,463	5,270	97,255	9,773	14.67	1.47	13.19	-1,240	191	36.2			1,049	199.1
70 - 74	9.6	13.4	5,555	747	24,759	2,375	66,792	4,504	12.02	0.81	11.21	-396	131	55.2			265	111.7
75 - 79	6.5	8.1	4,349	350	18,465	1,205	42,033	2,128	9.67	0.49	9.18	-192	97	80.5			95	78.8
80 +	3.9	5.2	3,037	159	23,568	924	23,568	924	7.76	0.30	7.46	-159	62	66.8			97	104.9

Note (1): Pop = Population   LF = Labour force, and Columns 4, 6, 8 and 10 were extracted from Male Life Tables for Trinidad and Tobago.

Note (2): Computations for columns 14, 16 and 18 were done in Appendix 2, and Col.(13) = Successive difference of col.(5).

Appendix 2: Calculation of Component of Change in Numbers of Economically Active Survivors During 5 Years Age Intervals, and Annual Losses by Deaths and Retirements and Gains by Entries from Inactive Population: Males, Trinidad and Tobago: 2000

Age interval (1)	Survivors at age x of 10,000 born alive: Pop l_x (2)	LF l_{wx} (3)	Stationary population in age interval: Pop L_x (4)	LF L_{wx} (5)	Increase(+) or decrease(-) of economically active survivors during age intervals (6)	Mortality rate 1000 $_nM_x$ (7)	First estimate of deaths (8)=(7)*(5)	Adjusted estimate of deaths (9)[a]	Entries or retirement rate (10)	First estimates entries or retirements (11)[b]	Adjusted estimates entries or retirements (12)[c]	Active population (13)	Inactive population (14)	Losses from LF by death: Rate per 1000 of LF (15)	Estimated number (16)=(13)*(15)	Entries into LF: Rate per 1000 of inactive pop (17)	Estimated number (18)=(14)*(17)	Retirements from LF: Rate per 1000 of LF (19)	Estimated number (20)
15 - 19	9,680	0	48,293	18,787	6,026	1.11	21	21	62.53	6,039	6,047	24,015	37,715	1.11	27	204.94	7,729		
20 - 24	9,637	6,026	47,968	41,326	2,574	1.55	64	64	27.52	2,640	2,638	42,983	6,909	1.55	67	397.16	2,744		
25 - 29	9,550	8,600	47,429	44,559	293	1.56	70	59	4.34	412	352	40,228	2,591	1.33	54	122.74	318		
30 - 34	9,421	8,893	46,744	44,328	-95	1.77	78	207	0.46	43	112	38,033	2,073	4.67	178	46.46	96		
35 - 39	9,276	8,798	45,861	43,503	-213	2.27	99	183	-0.18	-16	-30	42,514	2,304	4.22	179			0.69	29
40 - 44	9,068	8,585	44,752	42,281	-312	3.35	142	190	-1.01	-91	-122	37,564	2,195	4.50	169			2.88	108
45 - 49	8,833	8,272	43,402	40,292	-550	5.36	216	245	-3.11	-270	-306	30,957	2,390	6.07	188			7.58	235
50 - 54	8,528	7,722	41,449	36,585	-1,115	8.58	314	344	-8.48	-703	-771	24,758	3,291	9.40	233			21.06	521
55 - 59	8,051	6,608	38,611	29,294	-2,227	13.91	407	418	-22.82	-1,762	-1,809	15,466	4,919	14.28	221			61.75	955
60 - 64	7,393	4,380	35,059	14,945	-2,394	21.95	328	330	-29.29	-2,053	-2,064	6,773	9,116	22.06	149			138.10	935
65 - 69	6,631	1,987	30,463	5,270	-1,240	34.72	183	191	-16.52	-1,006	-1,049	2,186	10,451	36.20	79			199.08	435
70 - 74	5,555	747	24,759	2,375	-396	55.55	132	131	-5.39	-267	-265	922	8,688	55.23	51			111.65	103
75 - 79	4,349	350	18,465	1,205	-192	88.94	107	97	-2.84	-105	-95	446	6,391	80.54	36			78.77	35
80 +	3,037	159	23,568	924	-159	169.54	157	62	-5.22	-246	-97	254	6,226	66.75	17			104.90	27
TOTAL												307,099	105,259		1647		10,888		3,384

Note: a). Col(9) = Col (8)*Col(6)/((Col(11)–Col(8)), b). Col(11)=col.(10)*col.(4)/5, and c). Col(12) = col.(11)*col.(6)/((col.(11) - col(8))

For convenience, columns 2 to 5 were transferred from Appendix 6.1 and Col.(7) extracted from a prepared Male Mortality Life Table for Trinidad and Tobago.

Appendix 3: Abridged Table of Economically Active Life, Female Population of Trinidad and Tobago, 2000

	Economic active rate (%)		Survivors at beginning of age group		Stationary population		Subsequent year in stationary population		Average remaining life time at beginning of age group years of:			Net increase (+) or decrease e (-)	Component of Annual Change in Number of Economically Active Persons During Age Interval					
													Death of active persons		Net entries into economic activity		Net retirements into inactive status	
Age interval	Within age group	Beginning of age group (3)=(l$_5$+l$_6$)/2	Pop l$_x$	LF l$_{wx}$ (5)=(4)*(3)	Pop L$_x$	LF L$_{wx}$ (7)=(6)*(2)	Pop T$_x$	LF T$_{wx}$	Pop e$_x$ (10)=(8)/(4)	LF e$_{wx}$ (11)=(9)/(4)	Inactive years		Number	Rate per 1000 active (15)=(14)/(7)	Number	Rate per 1000 active (17)=(16)/{(6)(7)}	Number	Rate per 1000 active (19)=(18)/(7)
(1)	(2)	(2)	(4)		(6)		(8)	(9)			(12)	(13)	(14)		(16)		(18)	
0	0	0	10,000	0	9,867	0	736,799	218,642	73.7	21.9	51.8							
1 - 4	0	0	9,855	0	39,377	0	726,932	218,642	73.8	22.2	51.6							
5 - 9	0	0	9,837	0	49,151	0	687,555	218,642	69.9	22.2	47.7							
10 - 14	0	0	9,823	0	49,085	0	638,404	218,642	65.0	22.3	42.7							
15 - 19	18.4	0	9,811	0	48,998	9,019	589,319	218,642	60.1	22.3	37.8	3,755	5	0.51	3,760	94.05		
20 - 24	58.3	38.4	9,786	3,755	48,845	28,499	540,321	209,624	55.2	21.4	33.8	2,062	20	0.71	2,083	102.36		
25 - 29	61.0	59.7	9,751	5,818	48,675	29,681	491,476	181,125	50.4	18.6	31.8	-22	20	0.67			3	0.29
30 - 34	58.3	59.6	9,718	5,795	48,502	28,272	442,801	151,445	45.6	15.6	30.0	-251	21	0.76			230	8.07
35 - 39	56.2	57.3	9,681	5,544	48,291	27,158	394,299	123,173	40.7	12.7	28.0	-147	28	1.03			119	4.00
40 - 44	55.8	56.0	9,632	5,397	47,977	26,785	346,008	96,015	35.9	10.0	26.0	-254	45	1.66			209	7.40
45 - 49	51.9	53.8	9,552	5,143	47,430	24,598	298,031	69,230	31.2	7.2	24.0	-660	75	3.06			584	21.52
50 - 54	43.5	47.7	9,406	4,484	46,458	20,196	250,601	44,632	26.6	4.7	21.9	-1,037	109	5.41			927	34.63
55 - 59	31.8	37.7	9,154	3,447	44,765	14,252	204,143	24,436	22.3	2.7	19.6	-1,423	139	9.72			1,284	52.21
60 - 64	14.6	23.2	8,716	2,024	41,995	6,134	159,378	10,184	18.3	1.2	17.1	-1,203	101	16.41			1,102	54.56
65 - 69	5.8	10.2	8,033	821	37,760	2,207	117,382	4,049	14.6	0.5	14.1	-498	62	28.02			436	30.63
70 - 74	3.4	4.6	7,006	323	31,603	1,068	79,623	1,843	11.4	0.3	11.1	-171	50	46.48			121	19.76
75 - 79	2.1	2.7	5,568	152	23,512	491	48,020	774	8.6	0.1	8.5	-91	38	76.41			53	24.07
80 +	1.2	1.6	3,798	62	24,508	283	24,508	283	6.5	0.1	6.4	-62	22	77.39			40	37.17

Note (1): Pop = Population LF = Labour force, and Columns 4, 6, 8 and 10 were extracted from Female Life Tables for Trinidad and Tobago.

Note (2): Computations for colums 14, 16 and 18 were done in Appendix 4, and Col.(13) = Successive difference of col.(5).

Appendix 4: Calculation of Component of Change in Numbers of Economically Active Survivors During 5 Years Age Intervals, and Annual Losses by Deaths and Retirements and Gains by Entries from Inactive Population: Females, Trinidad and Tobago: 2000

Age interval	Survivors at age x of 10,000 born alive Pop l_x	LF l_{wx}	Stationary population in age interval Pop L_x	LF L_{wx}	Increase (+) or decrease (-) of economically active survivors during age intervals	Death of economically active persons during age interval — Mortality rate 1000 $_nM_x$	First estimate of deaths (8)=(7)*(5)	Adjusted estimate deaths (9)[a]	Net entries into economic activity (+) & net retirement (-) during age intervals — Entries or retirement rate	First estimates entries or retirements (11)[b]	Adjusted estimates entries or retirements (12)[c]	Active populations (13)	Inactive population (14)	Losses from LF by death — Rate per 1000 of LF (15)	Estimated number (16)=(13)*(15)	Entries into LF — Rate per 1000 inactive pop (17)	Estimated number (18)=(14)*(17)	Retirements from LF — Rate per 1000 LF (19)	Estimated number (20)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
15 - 19	9,811	0	48,998	9,019	3,755	0.51	5	5	38.38	3,761	3,760	11,250	49,871	0.51	6	94.05	4,690		
20 - 24	9,786	3,755	48,845	28,499	2,062	0.71	20	20	21.29	2,079	2,083	28,534	20,372	0.71	20	102.36	2,085		
25 - 29	9,751	5,818	48,675	29,681	-22	0.68	20	20	-0.03	-3	-3	25,791	16,505	0.67	17			0.29	8
30 - 34	9,718	5,795	48,502	28,272	-251	0.76	21	21	-2.37	-230	-230	23,919	17,116	0.76	18			8.07	193
35 - 39	9,681	5,544	48,291	27,158	-147	1.03	28	28	-1.23	-119	-119	25,722	20,015	1.03	27			4.00	103
40 - 44	9,632	5,397	47,977	26,785	-254	1.67	45	45	-2.19	-210	-209	22,316	17,656	1.66	37			7.40	165
45 - 49	9,552	5,143	47,430	24,598	-660	3.07	76	75	-6.18	-586	-584	16,938	15,722	3.06	52			21.52	364
50 - 54	9,406	4,484	46,458	20,196	-1,037	5.43	110	109	-10.01	-930	-927	11,737	15,263	5.41	64			34.63	406
55 - 59	9,154	3,447	44,765	14,252	-1,423	9.78	139	139	-14.43	-1,292	-1,284	6,579	14,085	9.72	64			52.21	343
60 - 64	8,716	2,024	41,995	6,134	-1,203	16.26	100	101	-13.00	-1,092	-1,102	2,439	14,258	16.41	40			54.56	133
65 - 69	8,033	821	37,760	2,207	-498	27.21	60	62	-5.61	-424	-436	821	13,228	28.02	23			30.63	25
70 - 74	7,006	323	31,603	1,068	-171	45.51	49	50	-1.88	-119	-121	366	10,460	46.48	17			19.76	7
75 - 79	5,568	152	23,512	491	-91	75.26	37	38	-1.11	-52	-53	166	7,779	76.41	13			24.07	4
80 +	3,798	62	24,508	283	-62	154.98	44	22	-1.62	-80	-40	107	9,153	77.39	8			37.17	4
TOTAL												176,685	241,483		405		6,776		1,756

Note: a). Col(9) = Col (8)*(Col(6)/{(Col(11)-Col(8)}. b). Col.(11)=col.(10)*(col.(4)/5, and c). Col.(12) = col.(11)*col.(6)/l(col.(11) - col(8)}

For convenience, columns 2 to 5 were transferred from Appendix 6.3 LF and Col.(7) extracted from a prepared Female Mortality Life Table for Trinidad and Tobago.