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## Apêndice I – Estimativas dos parâmetros LC

### 1. Parâmetros $\hat{\alpha}_x$

| Idade | Feminino   | Masculino  | Idade | Feminino   | Masculino  |
|-------|------------|------------|-------|------------|------------|
| 18    | -7.8962255 | -6.9463061 | 61    | -4.5687767 | -3.9307600 |
| 19    | -7.8714771 | -6.9327629 | 62    | -4.4550881 | -3.8158729 |
| 20    | -7.8610486 | -6.9145999 | 63    | -4.3583455 | -3.7156630 |
| 21    | -7.8293890 | -6.9317733 | 64    | -4.2595673 | -3.6069748 |
| 22    | -7.8166698 | -6.9431814 | 65    | -4.1634200 | -3.5156635 |
| 23    | -7.7877272 | -6.9787263 | 66    | -4.0779624 | -3.4403486 |
| 24    | -7.7704616 | -6.9961998 | 67    | -3.9592727 | -3.3226974 |
| 25    | -7.7260825 | -6.9959035 | 68    | -3.8622824 | -3.2337247 |
| 26    | -7.6670774 | -6.9809528 | 69    | -3.7524161 | -3.1358811 |
| 27    | -7.6345745 | -6.9813418 | 70    | -3.6502615 | -3.0501765 |
| 28    | -7.5663133 | -6.9544853 | 71    | -3.5616115 | -2.9695809 |
| 29    | -7.4956456 | -6.9262513 | 72    | -3.4294836 | -2.8540864 |
| 30    | -7.4314256 | -6.8915336 | 73    | -3.3196750 | -2.7612856 |
| 31    | -7.3722783 | -6.8681201 | 74    | -3.2094914 | -2.6671085 |
| 32    | -7.2707137 | -6.8001778 | 75    | -3.1109537 | -2.5868051 |
| 33    | -7.2112402 | -6.7589597 | 76    | -2.9996329 | -2.4906219 |
| 34    | -7.1109859 | -6.6994788 | 77    | -2.9074705 | -2.4149323 |
| 35    | -7.0246333 | -6.6153700 | 78    | -2.7922875 | -2.3220554 |
| 36    | -6.9466265 | -6.5572686 | 79    | -2.6832662 | -2.2285172 |
| 37    | -6.8581782 | -6.4754351 | 80    | -2.5777659 | -2.1515685 |
| 38    | -6.7508988 | -6.3913006 | 81    | -2.4856417 | -2.0773231 |
| 39    | -6.6584655 | -6.2884326 | 82    | -2.3626645 | -1.9708227 |
| 40    | -6.5605248 | -6.1945286 | 83    | -2.2557640 | -1.8850631 |
| 41    | -6.4719875 | -6.0985012 | 84    | -2.1461135 | -1.7913399 |
| 42    | -6.3490269 | -5.9827271 | 85    | -2.0473416 | -1.7117996 |
| 43    | -6.2574609 | -5.8886482 | 86    | -1.9357154 | -1.6179014 |
| 44    | -6.1614106 | -5.7888874 | 87    | -1.8487121 | -1.5389118 |
| 45    | -6.0624976 | -5.6642897 | 88    | -1.7602178 | -1.4643459 |
| 46    | -5.9626959 | -5.5513121 | 89    | -1.6575217 | -1.3817909 |
| 47    | -5.8523861 | -5.4392165 | 90    | -1.5657488 | -1.3086383 |
| 48    | -5.7604324 | -5.3407754 | 91    | -1.4890631 | -1.2414717 |
| 49    | -5.6622238 | -5.2111012 | 92    | -1.3849589 | -1.1411028 |
| 50    | -5.5666531 | -5.1026149 | 93    | -1.2945757 | -1.0725366 |
| 51    | -5.4990368 | -5.0104145 | 94    | -1.2177570 | -0.9968708 |
| 52    | -5.3893120 | -4.8836947 | 95    | -1.1391300 | -0.9167405 |
| 53    | -5.3052303 | -4.7681753 | 96    | -1.0483323 | -0.8421554 |
| 54    | -5.2147442 | -4.6625115 | 97    | -0.9905827 | -0.7920386 |
| 55    | -5.1395076 | -4.5673490 | 98    | -0.9195703 | -0.7336960 |
| 56    | -5.0388046 | -4.4484849 | 99    | -0.8686597 | -0.6751566 |
| 57    | -4.9476052 | -4.3363879 | 100   | -0.7696601 | -0.6081605 |
| 58    | -4.8475127 | -4.2269333 |       |            |            |
| 59    | -4.7504804 | -4.1245308 |       |            |            |
| 60    | -4.6508366 | -4.0264646 |       |            |            |

2. Parâmetros  $\hat{\beta}_x$ 

| Idade | Feminino  | Masculino | Idade | Feminino  | Masculino |
|-------|-----------|-----------|-------|-----------|-----------|
| 18    | 0.0119592 | 0.0082385 | 61    | 0.0094195 | 0.0170647 |
| 19    | 0.0128205 | 0.0095386 | 62    | 0.0107243 | 0.0181199 |
| 20    | 0.0137352 | 0.0094384 | 63    | 0.0109488 | 0.0180036 |
| 21    | 0.0153589 | 0.0099947 | 64    | 0.0105721 | 0.0178913 |
| 22    | 0.0161060 | 0.0094106 | 65    | 0.0103812 | 0.0171884 |
| 23    | 0.0175490 | 0.0084193 | 66    | 0.0099616 | 0.0157030 |
| 24    | 0.0177844 | 0.0077535 | 67    | 0.0108544 | 0.0161342 |
| 25    | 0.0183646 | 0.0072386 | 68    | 0.0109744 | 0.0157183 |
| 26    | 0.0175747 | 0.0075865 | 69    | 0.0114086 | 0.0155240 |
| 27    | 0.0175328 | 0.0066880 | 70    | 0.0110116 | 0.0145437 |
| 28    | 0.0179202 | 0.0065001 | 71    | 0.0103755 | 0.0132153 |
| 29    | 0.0184020 | 0.0067662 | 72    | 0.0114799 | 0.0142922 |
| 30    | 0.0176487 | 0.0077520 | 73    | 0.0118491 | 0.0138752 |
| 31    | 0.0160453 | 0.0054936 | 74    | 0.0122263 | 0.0133820 |
| 32    | 0.0172868 | 0.0069141 | 75    | 0.0120985 | 0.0128161 |
| 33    | 0.0157825 | 0.0071954 | 76    | 0.0123735 | 0.0128331 |
| 34    | 0.0156637 | 0.0084889 | 77    | 0.0118144 | 0.0119109 |
| 35    | 0.0150325 | 0.0103638 | 78    | 0.0124877 | 0.0121376 |
| 36    | 0.0148673 | 0.0096137 | 79    | 0.0125245 | 0.0119514 |
| 37    | 0.0154643 | 0.0101632 | 80    | 0.0117761 | 0.0108800 |
| 38    | 0.0152700 | 0.0118282 | 81    | 0.0110313 | 0.0102407 |
| 39    | 0.0150527 | 0.0112598 | 82    | 0.0114080 | 0.0110778 |
| 40    | 0.0145826 | 0.0120752 | 83    | 0.0114966 | 0.0107086 |
| 41    | 0.0140548 | 0.0122595 | 84    | 0.0115818 | 0.0114435 |
| 42    | 0.0147230 | 0.0144819 | 85    | 0.0106671 | 0.0099439 |
| 43    | 0.0138780 | 0.0136441 | 86    | 0.0105910 | 0.0104331 |
| 44    | 0.0134223 | 0.0143732 | 87    | 0.0097704 | 0.0101964 |
| 45    | 0.0133948 | 0.0153558 | 88    | 0.0091442 | 0.0095420 |
| 46    | 0.0134331 | 0.0154288 | 89    | 0.0088293 | 0.0094715 |
| 47    | 0.0132912 | 0.0158208 | 90    | 0.0081089 | 0.0085873 |
| 48    | 0.0133358 | 0.0167264 | 91    | 0.0071080 | 0.0080797 |
| 49    | 0.0136153 | 0.0174396 | 92    | 0.0070636 | 0.0078507 |
| 50    | 0.0123730 | 0.0173795 | 93    | 0.0064156 | 0.0072309 |
| 51    | 0.0116711 | 0.0174574 | 94    | 0.0061249 | 0.0072815 |
| 52    | 0.0123505 | 0.0184968 | 95    | 0.0054503 | 0.0069087 |
| 53    | 0.0120906 | 0.0187588 | 96    | 0.0053678 | 0.0072059 |
| 54    | 0.0118674 | 0.0189994 | 97    | 0.0050393 | 0.0053094 |
| 55    | 0.0103846 | 0.0180296 | 98    | 0.0050853 | 0.0066304 |
| 56    | 0.0113518 | 0.0186837 | 99    | 0.0045568 | 0.0073473 |
| 57    | 0.0108243 | 0.0185834 | 100   | 0.0042738 | 0.0052202 |
| 58    | 0.0111663 | 0.0191190 |       |           |           |
| 59    | 0.0105532 | 0.0187398 |       |           |           |
| 60    | 0.0100395 | 0.0176074 |       |           |           |

3. Parâmetros  $\kappa_t$ 

| Primeira estimação $\kappa_t$ |              |              | Reestimação $\kappa_t$ |              |              |
|-------------------------------|--------------|--------------|------------------------|--------------|--------------|
| Ano                           | Feminino     | Masculino    | Ano                    | Feminino     | Masculino    |
| 1950                          | 37.67545453  | 23.76006214  | 1950                   | 30.12565234  | 15.75299142  |
| 1951                          | 38.55327710  | 27.06240947  | 1951                   | 35.15849783  | 21.20292222  |
| 1952                          | 27.34991855  | 19.07130363  | 1952                   | 23.59322747  | 14.41499841  |
| 1953                          | 25.70234794  | 17.79716425  | 1953                   | 23.12240390  | 14.05515795  |
| 1954                          | 22.92217563  | 16.37081354  | 1954                   | 20.70094040  | 13.48857663  |
| 1955                          | 22.19377839  | 17.21475158  | 1955                   | 22.49072902  | 14.78251184  |
| 1956                          | 19.95672274  | 15.16396597  | 1956                   | 21.50818600  | 14.42977904  |
| 1957                          | 18.48870510  | 14.26658663  | 1957                   | 17.63417154  | 13.13360186  |
| 1958                          | 17.27869906  | 13.27377576  | 1958                   | 18.71409291  | 13.49713653  |
| 1959                          | 15.96049249  | 12.44870209  | 1959                   | 17.37411220  | 12.48554134  |
| 1960                          | 12.90951237  | 11.94615484  | 1960                   | 15.26221250  | 11.22813755  |
| 1961                          | 15.91155271  | 13.95266068  | 1961                   | 18.34320613  | 13.41461036  |
| 1962                          | 15.50905245  | 13.33254382  | 1962                   | 17.25888687  | 13.69663630  |
| 1963                          | 15.23767982  | 14.39043539  | 1963                   | 18.34700513  | 14.82858566  |
| 1964                          | 9.82875660   | 9.99056570   | 1964                   | 9.44315061   | 9.32440425   |
| 1965                          | 10.18582889  | 10.58308784  | 1965                   | 10.15344321  | 10.47546745  |
| 1966                          | 10.66724811  | 11.18420879  | 1966                   | 11.38926302  | 11.52588494  |
| 1967                          | 6.77884616   | 6.78345336   | 1967                   | 6.47386128   | 7.98886612   |
| 1968                          | 8.93500303   | 8.39060034   | 1968                   | 11.17591629  | 11.28135252  |
| 1969                          | 8.82671278   | 8.68551676   | 1969                   | 9.62646309   | 11.46575750  |
| 1970                          | 7.18131546   | 7.71524367   | 1970                   | 7.86031499   | 9.79933439   |
| 1971                          | 5.20424875   | 6.06472088   | 1971                   | 5.21629987   | 7.75258004   |
| 1972                          | 6.90045029   | 7.75987888   | 1972                   | 8.02064041   | 10.11975403  |
| 1973                          | 5.71613998   | 7.50444022   | 1973                   | 6.77606016   | 8.58958945   |
| 1974                          | 4.10656803   | 5.84177219   | 1974                   | 5.34709526   | 7.69834453   |
| 1975                          | 3.59277606   | 4.33228414   | 1975                   | 3.83128288   | 6.85153314   |
| 1976                          | 4.25671811   | 5.19608303   | 1976                   | 6.03618421   | 7.71244761   |
| 1977                          | 0.07918251   | 1.41364795   | 1977                   | 0.91886058   | 4.46349970   |
| 1978                          | 1.42437664   | 2.88856041   | 1978                   | 0.80142623   | 4.96748875   |
| 1979                          | -0.09090651  | 2.21925365   | 1979                   | 1.03005954   | 4.63415904   |
| 1980                          | -2.72485825  | -1.03322767  | 1980                   | -2.17126136  | 2.27009358   |
| 1981                          | -4.70016743  | -2.49861220  | 1981                   | -3.60476693  | 0.68606820   |
| 1982                          | -5.59874259  | -4.05519211  | 1982                   | -3.98962522  | 0.15374686   |
| 1983                          | -7.99163519  | -4.99760113  | 1983                   | -5.85063793  | -0.86997356  |
| 1984                          | -10.45812186 | -7.34040193  | 1984                   | -9.18045782  | -3.66903611  |
| 1985                          | -9.55486849  | -6.47623887  | 1985                   | -6.11115747  | -2.02148296  |
| 1986                          | -10.72449467 | -8.08630337  | 1986                   | -8.93552161  | -4.05114237  |
| 1987                          | -12.62610060 | -10.38417585 | 1987                   | -12.53831519 | -7.10944465  |
| 1988                          | -13.20146091 | -10.58671194 | 1988                   | -12.85907121 | -8.04246300  |
| 1989                          | -13.42695993 | -10.86844172 | 1989                   | -12.48892770 | -8.91476440  |
| 1990                          | -16.23211242 | -11.29475520 | 1990                   | -16.42362322 | -10.98219730 |
| 1991                          | -16.73403833 | -12.22035121 | 1991                   | -16.10359807 | -11.89909467 |
| 1992                          | -18.67225159 | -15.01987022 | 1992                   | -19.26776338 | -14.45814233 |
| 1993                          | -17.49200367 | -13.71962465 | 1993                   | -16.27292358 | -13.24966601 |
| 1994                          | -20.64083818 | -17.12508723 | 1994                   | -21.77408869 | -17.63129891 |
| 1995                          | -19.52689356 | -15.45684209 | 1995                   | -19.63479018 | -16.68859372 |
| 1996                          | -20.46833262 | -17.33442252 | 1996                   | -21.77038514 | -19.35722264 |
| 1997                          | -22.07725604 | -19.47207030 | 1997                   | -22.98312311 | -21.53861748 |
| 1998                          | -22.77098798 | -20.19359676 | 1998                   | -23.80085337 | -22.70775476 |
| 1999                          | -23.48557133 | -21.24041131 | 1999                   | -23.99491920 | -24.02453814 |
| 2000                          | -25.37850525 | -24.17309701 | 2000                   | -28.73520750 | -27.88084206 |
| 2001                          | -27.88727137 | -26.25551455 | 2001                   | -30.51032191 | -30.29051442 |
| 2002                          | -28.56735066 | -27.58347843 | 2002                   | -30.51460153 | -31.61416759 |
| 2003                          | -28.30181085 | -29.18861934 | 2003                   | -29.86830891 | -32.85566832 |

## Anexo I – Escala AA

### Escala de projeção AA – Feminina e Masculina

| Idade | Feminina | Masculina | Idade | Feminina | Masculina | Idade | Feminina | Masculina |
|-------|----------|-----------|-------|----------|-----------|-------|----------|-----------|
| 1     | 0,020    | 0,020     | 41    | 0,015    | 0,009     | 81    | 0,007    | 0,009     |
| 2     | 0,020    | 0,020     | 42    | 0,015    | 0,010     | 82    | 0,007    | 0,008     |
| 3     | 0,020    | 0,020     | 43    | 0,015    | 0,011     | 83    | 0,007    | 0,008     |
| 4     | 0,020    | 0,020     | 44    | 0,015    | 0,012     | 84    | 0,007    | 0,007     |
| 5     | 0,020    | 0,020     | 45    | 0,016    | 0,013     | 85    | 0,006    | 0,007     |
| 6     | 0,020    | 0,020     | 46    | 0,017    | 0,014     | 86    | 0,005    | 0,007     |
| 7     | 0,020    | 0,020     | 47    | 0,018    | 0,015     | 87    | 0,004    | 0,006     |
| 8     | 0,020    | 0,020     | 48    | 0,018    | 0,016     | 88    | 0,004    | 0,005     |
| 9     | 0,020    | 0,020     | 49    | 0,018    | 0,017     | 89    | 0,003    | 0,005     |
| 10    | 0,020    | 0,020     | 50    | 0,017    | 0,018     | 90    | 0,003    | 0,004     |
| 11    | 0,020    | 0,020     | 51    | 0,016    | 0,019     | 91    | 0,003    | 0,004     |
| 12    | 0,020    | 0,020     | 52    | 0,014    | 0,020     | 92    | 0,003    | 0,003     |
| 13    | 0,020    | 0,020     | 53    | 0,012    | 0,020     | 93    | 0,002    | 0,003     |
| 14    | 0,018    | 0,019     | 54    | 0,010    | 0,020     | 94    | 0,002    | 0,003     |
| 15    | 0,016    | 0,019     | 55    | 0,008    | 0,019     | 95    | 0,002    | 0,002     |
| 16    | 0,015    | 0,019     | 56    | 0,006    | 0,018     | 96    | 0,002    | 0,002     |
| 17    | 0,014    | 0,019     | 57    | 0,005    | 0,017     | 97    | 0,001    | 0,002     |
| 18    | 0,014    | 0,019     | 58    | 0,005    | 0,016     | 98    | 0,001    | 0,001     |
| 19    | 0,015    | 0,019     | 59    | 0,005    | 0,016     | 99    | 0,001    | 0,001     |
| 20    | 0,016    | 0,019     | 60    | 0,005    | 0,016     | 100   | 0,001    | 0,001     |
| 21    | 0,017    | 0,018     | 61    | 0,005    | 0,015     | 101   | 0,000    | 0,000     |
| 22    | 0,017    | 0,017     | 62    | 0,005    | 0,015     | 102   | 0,000    | 0,000     |
| 23    | 0,016    | 0,015     | 63    | 0,005    | 0,014     | 103   | 0,000    | 0,000     |
| 24    | 0,015    | 0,013     | 64    | 0,005    | 0,014     | 104   | 0,000    | 0,000     |
| 25    | 0,014    | 0,010     | 65    | 0,005    | 0,014     | 105   | 0,000    | 0,000     |
| 26    | 0,012    | 0,006     | 66    | 0,005    | 0,013     | 106   | 0,000    | 0,000     |
| 27    | 0,012    | 0,005     | 67    | 0,005    | 0,013     | 107   | 0,000    | 0,000     |
| 28    | 0,012    | 0,005     | 68    | 0,005    | 0,014     | 108   | 0,000    | 0,000     |
| 29    | 0,012    | 0,005     | 69    | 0,005    | 0,014     | 109   | 0,000    | 0,000     |
| 30    | 0,010    | 0,005     | 70    | 0,005    | 0,015     | 110   | 0,000    | 0,000     |
| 31    | 0,008    | 0,005     | 71    | 0,006    | 0,015     | 111   | 0,000    | 0,000     |
| 32    | 0,008    | 0,005     | 72    | 0,006    | 0,015     | 112   | 0,000    | 0,000     |
| 33    | 0,009    | 0,005     | 73    | 0,007    | 0,015     | 113   | 0,000    | 0,000     |
| 34    | 0,010    | 0,005     | 74    | 0,007    | 0,015     | 114   | 0,000    | 0,000     |
| 35    | 0,011    | 0,005     | 75    | 0,008    | 0,014     | 115   | 0,000    | 0,000     |
| 36    | 0,012    | 0,005     | 76    | 0,008    | 0,014     | 116   | 0,000    | 0,000     |
| 37    | 0,013    | 0,005     | 77    | 0,007    | 0,013     | 117   | 0,000    | 0,000     |
| 38    | 0,014    | 0,006     | 78    | 0,007    | 0,012     | 118   | 0,000    | 0,000     |
| 39    | 0,015    | 0,007     | 79    | 0,007    | 0,011     | 119   | 0,000    | 0,000     |
| 40    | 0,015    | 0,008     | 80    | 0,007    | 0,010     | 120   | 0,000    | 0,000     |