

## ***Appendix 2-1*** ***Equations***

### **2.1 U.S. Employment (USEMP)**

#### **UNEMPLOYMENT RATES, PRELIMINARY**

[Full estimation details for these equations are available upon request.]

#### **MALE**

$$\begin{aligned} \text{RM1617\_P} &= \text{RM1617\_P}(-1) + [ -31.52172*D(\text{RTP}) - 24.81520*D(\text{RTP}(-1)) - 14.72058*D(\text{RTP}(-2)) \\ &\quad - 31.33966*D(\text{RTP}(-3)) ] \\ \text{RM1819\_P} &= \text{RM1819\_P}(-1) + [ -56.74492*D(\text{RTP}) - 24.87344*D(\text{RTP}(-1)) - 35.84160*D(\text{RTP}(-2)) \\ &\quad - 0.70217*D(\text{RTP}(-3)) ] \\ \text{RM2024\_P} &= \text{RM2024\_P}(-1) + [ -52.29093*D(\text{RTP}) - 19.73984*D(\text{RTP}(-1)) - 15.03600*D(\text{RTP}(-2)) \\ &\quad - 13.47522*D(\text{RTP}(-3)) ] \\ \text{RM2529\_P} &= \text{RM2529\_P}(-1) + [ -39.13841*D(\text{RTP}) - 24.46060*D(\text{RTP}(-1)) - 17.51574*D(\text{RTP}(-2)) \\ &\quad - 0.81036*D(\text{RTP}(-3)) ] \\ \text{RM3034\_P} &= \text{RM3034\_P}(-1) + [ -23.76350*D(\text{RTP}) - 22.76416*D(\text{RTP}(-1)) - 8.88851*D(\text{RTP}(-2)) \\ &\quad - 11.24022*D(\text{RTP}(-3)) ] \\ \text{RM3539\_P} &= \text{RM3539\_P}(-1) + [ -28.26931*D(\text{RTP}) - 9.02630*D(\text{RTP}(-1)) - 14.93420*D(\text{RTP}(-2)) \\ &\quad - 9.03795*D(\text{RTP}(-3)) ] \\ \text{RM4044\_P} &= \text{RM4044\_P}(-1) + [ -18.16004*D(\text{RTP}) - 23.06573*D(\text{RTP}(-1)) - 9.94244*D(\text{RTP}(-2)) \\ &\quad - 4.34840*D(\text{RTP}(-3)) ] \\ \text{RM4549\_P} &= \text{RM4549\_P}(-1) + [ -22.41979*D(\text{RTP}) - 16.69081*D(\text{RTP}(-1)) - 11.82097*D(\text{RTP}(-2)) \\ &\quad - 1.04890*D(\text{RTP}(-3)) ] \\ \text{RM5054\_P} &= \text{RM5054\_P}(-1) + [ -23.03219*D(\text{RTP}) - 11.75062*D(\text{RTP}(-1)) - 8.80293*D(\text{RTP}(-2)) \\ &\quad - 10.36992*D(\text{RTP}(-3)) ] \\ \text{RM5559\_P} &= \text{RM5559\_P}(-1) + [ -25.47548*D(\text{RTP}) - 14.31543*D(\text{RTP}(-1)) - 6.15894*D(\text{RTP}(-2)) \\ &\quad - 1.00513*D(\text{RTP}(-3)) ] \\ \text{RM6064\_P} &= \text{RM6064\_P}(-1) + [ -2.10594*D(\text{RTP}) - 17.27891*D(\text{RTP}(-1)) - 4.87379*D(\text{RTP}(-2)) \\ &\quad - 15.36088*D(\text{RTP}(-3)) ] \\ \text{RM6569\_P} &= \text{RM6569\_P}(-1) + [ -13.51567*D(\text{RTP}) - 2.41017*D(\text{RTP}(-1)) - 17.92290*D(\text{RTP}(-2)) \\ &\quad + 1.48482*D(\text{RTP}(-3)) ] \\ \text{RM7074\_P} &= \text{RM7074\_P}(-1) + [ -9.76394*D(\text{RTP}) - 7.44785*D(\text{RTP}(-1)) - 15.23719*D(\text{RTP}(-2)) \\ &\quad + 7.17596*D(\text{RTP}(-3)) ] \\ \text{RM75O\_P} &= \text{RM75O\_P}(-1) + [ 2.47935*D(\text{RTP}) - 27.63188*D(\text{RTP}(-1)) + 8.35078*D(\text{RTP}(-2)) \\ &\quad - 3.11058*D(\text{RTP}(-3)) ] \end{aligned}$$

#### **FEMALE**

$$\begin{aligned} \text{RF1617\_P} &= \text{RF1617\_P}(-1) + [ -13.33857*D(\text{RTP}) - 1.17140*D(\text{RTP}(-1)) - 69.40326*D(\text{RTP}(-2)) \\ &\quad + 9.53209*D(\text{RTP}(-3)) ] \\ \text{RF1819\_P} &= \text{RF1819\_P}(-1) + [ -42.47852*D(\text{RTP}) - 11.03359*D(\text{RTP}(-1)) - 0.89011*D(\text{RTP}(-2)) \\ &\quad - 33.04213*D(\text{RTP}(-3)) ] \\ \text{RF2024\_P} &= \text{RF2024\_P}(-1) + [ -23.03635*D(\text{RTP}) - 17.33653*D(\text{RTP}(-1)) - 10.59182*D(\text{RTP}(-2)) \\ &\quad - 7.73281*D(\text{RTP}(-3)) ] \\ \text{RF2529\_P} &= \text{RF2529\_P}(-1) + [ -15.61692*D(\text{RTP}) - 12.87215*D(\text{RTP}(-1)) - 15.16923*D(\text{RTP}(-2)) \\ &\quad - 3.55380*D(\text{RTP}(-3)) ] \\ \text{RF3034\_P} &= \text{RF3034\_P}(-1) + [ -14.71130*D(\text{RTP}) - 6.25917*D(\text{RTP}(-1)) - 18.72755*D(\text{RTP}(-2)) \\ &\quad - 2.42329*D(\text{RTP}(-3)) ] \\ \text{RF3539\_P} &= \text{RF3539\_P}(-1) + [ -19.78502*D(\text{RTP}) - 7.31538*D(\text{RTP}(-1)) - 8.69549*D(\text{RTP}(-2)) \\ &\quad - 5.45418*D(\text{RTP}(-3)) ] \end{aligned}$$

$RF4044\_P = RF4044\_P(-1) + [-8.62310*D(RTP) - 10.87758*D(RTP(-1)) - 6.86064*D(RTP(-2))$   
 $- 4.08914*D(RTP(-3))]$   
 $RF4549\_P = RF4549\_P(-1) + [-9.41764*D(RTP) - 14.45854*D(RTP(-1)) - 0.04687*D(RTP(-2))$   
 $- 4.15977*D(RTP(-3))]$   
 $RF5054\_P = RF5054\_P(-1) + [-11.37880*D(RTP) - 4.16526*D(RTP(-1)) - 12.32611*D(RTP(-2))$   
 $- 5.79074*D(RTP(-3))]$   
 $RF5559\_P = RF5559\_P(-1) + [-9.11833*D(RTP) - 2.89447*D(RTP(-1)) - 17.40333*D(RTP(-2))$   
 $+ 0.37368*D(RTP(-3))]$   
 $RF6064\_P = RF6064\_P(-1) + [-21.93195*D(RTP) + 2.80763*D(RTP(-1)) - 11.61244*D(RTP(-2))$   
 $- 1.60187*D(RTP(-3))]$   
 $RF6569\_P = RF6569\_P(-1) + [6.59281*D(RTP) + 5.16431*D(RTP(-1)) - 35.27026*D(RTP(-2))$   
 $+ 8.58449*D(RTP(-3))]$   
 $RF7074\_P = RF7074\_P(-1) + [-4.25967*D(RTP) + 10.26851*D(RTP(-1)) - 19.18862*D(RTP(-2))$   
 $+ 6.93390*D(RTP(-3))]$   
 $RF750\_P = RF750\_P(-1) + [-40.60841*D(RTP) + 42.55417*D(RTP(-1)) - 29.60376*D(RTP(-2))$   
 $- 14.09088*D(RTP(-3))]$

#### UNEMPLOYMENT RATES, AGE-SEX ADJUSTED, PRELIMINARY

$RUM\_ASA\_P = (RM1617\_P * LM1617\_BY + RM1819\_P * LM1819\_BY + RM2024\_P * LM2024\_BY$   
 $+ RM2529\_P * LM2529\_BY + RM3034\_P * LM3034\_BY + RM3539\_P * LM3539\_BY$   
 $+ RM4044\_P * LM4044\_BY + RM4549\_P * LM4549\_BY + RM5054\_P * LM5054\_BY$   
 $+ RM5559\_P * LM5559\_BY + RM6064\_P * LM6064\_BY + RM6569\_P * LM6569\_BY$   
 $+ RM7074\_P * LM7074\_BY + RM750\_P * LM750\_BY) / LCM\_BY$   
  
 $RUF\_ASA\_P = (RF1617\_P * LF1617\_BY + RF1819\_P * LF1819\_BY + RF2024\_P * LF2024\_BY$   
 $+ RF2529\_P * LF2529\_BY + RF3034\_P * LF3034\_BY + RF3539\_P * LF3539\_BY$   
 $+ RF4044\_P * LF4044\_BY + RF4549\_P * LF4549\_BY + RF5054\_P * LF5054\_BY$   
 $+ RF5559\_P * LF5559\_BY + RF6064\_P * LF6064\_BY + RF6569\_P * LF6569\_BY$   
 $+ RF7074\_P * LF7074\_BY + RF750\_P * LF750\_BY) / LCF\_BY$

$RU\_ASA\_P = (RUM\_ASA\_P * LCM\_BY + RUF\_ASA\_P * LCF\_BY) / LC\_BY$

#### UNEMPLOYMENT RATES

##### MALE

$RM1617= RM1617\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM1819= RM1819\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM2024= RM2024\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM2529= RM2529\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM3034= RM3034\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM3539= RM3539\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM4044= RM4044\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM4549= RM4549\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM5054= RM5054\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM5559= RM5559\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM6064= RM6064\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM6569= RM6569\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM7074= RM7074\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RM750 = RM750\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$

##### FEMALE

$RF1617= RF1617\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RF1819= RF1819\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$   
 $RF2024= RF2024\_P * (1 + RU\_ASA\_ADJ / RU\_ASA\_P)$

RF2529= RF2529\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF3034= RF3034\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF3539= RF3539\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF4044= RF4044\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF4549= RF4549\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF5054= RF5054\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF5559= RF5559\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF6064= RF6064\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF6569= RF6569\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF7074= RF7074\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)  
 RF75O = RF75O\_P \* (1 + RU\_ASA\_ADJ / RU\_ASA\_P)

#### **UNEMPLOYMENT RATES, AGE-SEX ADJUSTED**

$$\begin{aligned}
 \text{RUM\_ASA} = & (\text{RM1617} * \text{LM1617\_BY} + \text{RM1819} * \text{LM1819\_BY} + \text{RM2024} * \text{LM2024\_BY} + \text{RM2529} * \text{LM2529\_BY} \\
 & + \text{RM3034} * \text{LM3034\_BY} + \text{RM3539} * \text{LM3539\_BY} + \text{RM4044} * \text{LM4044\_BY} + \text{RM4549} * \text{LM4549\_BY} \\
 & + \text{RM5054} * \text{LM5054\_BY} + \text{RM5559} * \text{LM5559\_BY} + \text{RM6064} * \text{LM6064\_BY} + \text{RM6569} * \text{LM6569\_BY} \\
 & + \text{RM7074} * \text{LM7074\_BY} + \text{RM75O} * \text{LM75O\_BY}) / \text{LCM\_BY}
 \end{aligned}$$

$$\begin{aligned}
 \text{RUF\_ASA} = & (\text{RF1617} * \text{LF1617\_BY} + \text{RF1819} * \text{LF1819\_BY} + \text{RF2024} * \text{LF2024\_BY} + \text{RF2529} * \text{LF2529\_BY} \\
 & + \text{RF3034} * \text{LF3034\_BY} + \text{RF3539} * \text{LF3539\_BY} + \text{RF4044} * \text{LF4044\_BY} + \text{RF4549} * \text{LF4549\_BY} \\
 & + \text{RF5054} * \text{LF5054\_BY} + \text{RF5559} * \text{LF5559\_BY} + \text{RF6064} * \text{LF6064\_BY} + \text{RF6569} * \text{LF6569\_BY} \\
 & + \text{RF7074} * \text{LF7074\_BY} + \text{RF75O} * \text{LF75O\_BY}) / \text{LCF\_BY}
 \end{aligned}$$

$$\text{RU\_ASA} = (\text{RUM\_ASA} * \text{LCM\_BY} + \text{RUF\_ASA} * \text{LCF\_BY}) / \text{LC\_BY}$$

#### **UNEMPLOYMENT RATES, FULL EMPLOYMENT DIFFERENTIALS**

##### **MALE**

$$\begin{aligned}
 \text{DRM1617\_FE} = & -31.52172 * (1 - \text{RTP}) - 24.81520 * (1 - \text{RTP}(-1)) - 14.72058 * (1 - \text{RTP}(-2)) - 31.33966 * (1 - \text{RTP}(-3)) \\
 \text{DRM1819\_FE} = & -56.74492 * (1 - \text{RTP}) - 24.87344 * (1 - \text{RTP}(-1)) - 35.84160 * (1 - \text{RTP}(-2)) - 0.70217 * (1 - \text{RTP}(-3)) \\
 \text{DRM2024\_FE} = & -52.29093 * (1 - \text{RTP}) - 19.73984 * (1 - \text{RTP}(-1)) - 15.03600 * (1 - \text{RTP}(-2)) - 13.47522 * (1 - \text{RTP}(-3)) \\
 \text{DRM2529\_FE} = & -39.13841 * (1 - \text{RTP}) - 24.46060 * (1 - \text{RTP}(-1)) - 17.51574 * (1 - \text{RTP}(-2)) - 0.81036 * (1 - \text{RTP}(-3)) \\
 \text{DRM3034\_FE} = & -23.76350 * (1 - \text{RTP}) - 22.76416 * (1 - \text{RTP}(-1)) - 8.88851 * (1 - \text{RTP}(-2)) - 11.24022 * (1 - \text{RTP}(-3)) \\
 \text{DRM3539\_FE} = & -28.26931 * (1 - \text{RTP}) - 9.02630 * (1 - \text{RTP}(-1)) - 14.93420 * (1 - \text{RTP}(-2)) - 9.03795 * (1 - \text{RTP}(-3)) \\
 \text{DRM4044\_FE} = & -18.16004 * (1 - \text{RTP}) - 23.06573 * (1 - \text{RTP}(-1)) - 9.94244 * (1 - \text{RTP}(-2)) - 4.34840 * (1 - \text{RTP}(-3)) \\
 \text{DRM4549\_FE} = & -22.41979 * (1 - \text{RTP}) - 16.69081 * (1 - \text{RTP}(-1)) - 11.82097 * (1 - \text{RTP}(-2)) - 1.04890 * (1 - \text{RTP}(-3)) \\
 \text{DRM5054\_FE} = & -23.03219 * (1 - \text{RTP}) - 11.75062 * (1 - \text{RTP}(-1)) - 8.80293 * (1 - \text{RTP}(-2)) - 10.36992 * (1 - \text{RTP}(-3)) \\
 \text{DRM5559\_FE} = & -25.47548 * (1 - \text{RTP}) - 14.31543 * (1 - \text{RTP}(-1)) - 6.15894 * (1 - \text{RTP}(-2)) - 1.00513 * (1 - \text{RTP}(-3)) \\
 \text{DRM6064\_FE} = & -2.10594 * (1 - \text{RTP}) - 17.27891 * (1 - \text{RTP}(-1)) - 4.87379 * (1 - \text{RTP}(-2)) - 15.36088 * (1 - \text{RTP}(-3)) \\
 \text{DRM6569\_FE} = & -13.51567 * (1 - \text{RTP}) - 2.41017 * (1 - \text{RTP}(-1)) - 17.92290 * (1 - \text{RTP}(-2)) + 1.48482 * (1 - \text{RTP}(-3)) \\
 \text{DRM7074\_FE} = & -9.76394 * (1 - \text{RTP}) - 7.44785 * (1 - \text{RTP}(-1)) - 15.23719 * (1 - \text{RTP}(-2)) + 7.17596 * (1 - \text{RTP}(-3)) \\
 \text{DRM75O\_FE} = & 2.47935 * (1 - \text{RTP}) - 27.63188 * (1 - \text{RTP}(-1)) + 8.35078 * (1 - \text{RTP}(-2)) - 3.11058 * (1 - \text{RTP}(-3))
 \end{aligned}$$

##### **FEMALE**

$$\begin{aligned}
 \text{DRF1617\_FE} = & -13.33857 * (1 - \text{RTP}) - 1.17140 * (1 - \text{RTP}(-1)) - 69.40326 * (1 - \text{RTP}(-2)) + 9.53209 * (1 - \text{RTP}(-3)) \\
 \text{DRF1819\_FE} = & -42.47852 * (1 - \text{RTP}) - 11.03359 * (1 - \text{RTP}(-1)) - 0.89011 * (1 - \text{RTP}(-2)) - 33.04213 * (1 - \text{RTP}(-3)) \\
 \text{DRF2024\_FE} = & -23.03635 * (1 - \text{RTP}) - 17.33653 * (1 - \text{RTP}(-1)) - 10.59182 * (1 - \text{RTP}(-2)) - 7.73281 * (1 - \text{RTP}(-3)) \\
 \text{DRF2529\_FE} = & -15.61692 * (1 - \text{RTP}) - 12.87215 * (1 - \text{RTP}(-1)) - 15.16923 * (1 - \text{RTP}(-2)) - 3.55380 * (1 - \text{RTP}(-3)) \\
 \text{DRF3034\_FE} = & -14.71130 * (1 - \text{RTP}) - 6.25917 * (1 - \text{RTP}(-1)) - 18.72755 * (1 - \text{RTP}(-2)) - 2.42329 * (1 - \text{RTP}(-3)) \\
 \text{DRF3539\_FE} = & -19.78502 * (1 - \text{RTP}) - 7.31538 * (1 - \text{RTP}(-1)) - 8.69549 * (1 - \text{RTP}(-2)) - 5.45418 * (1 - \text{RTP}(-3)) \\
 \text{DRF4044\_FE} = & -8.62310 * (1 - \text{RTP}) - 10.87758 * (1 - \text{RTP}(-1)) - 6.86064 * (1 - \text{RTP}(-2)) - 4.08914 * (1 - \text{RTP}(-3)) \\
 \text{DRF4549\_FE} = & -9.41764 * (1 - \text{RTP}) - 14.45854 * (1 - \text{RTP}(-1)) - 0.04687 * (1 - \text{RTP}(-2)) - 4.15977 * (1 - \text{RTP}(-3)) \\
 \text{DRF5054\_FE} = & -11.37880 * (1 - \text{RTP}) - 4.16526 * (1 - \text{RTP}(-1)) - 12.32611 * (1 - \text{RTP}(-2)) - 5.79074 * (1 - \text{RTP}(-3)) \\
 \text{DRF5559\_FE} = & -9.11833 * (1 - \text{RTP}) - 2.89447 * (1 - \text{RTP}(-1)) - 17.40333 * (1 - \text{RTP}(-2)) + 0.37368 * (1 - \text{RTP}(-3)) \\
 \text{DRF6064\_FE} = & -21.93195 * (1 - \text{RTP}) + 2.80763 * (1 - \text{RTP}(-1)) - 11.61244 * (1 - \text{RTP}(-2)) - 1.60187 * (1 - \text{RTP}(-3))
 \end{aligned}$$

$DRF6569\_FE = 6.59281*(1 - RTP) + 5.16431*(1 - RTP(-1)) - 35.27026*(1 - RTP(-2)) + 8.58449*(1 - RTP(-3))$   
 $DRF7074\_FE = -4.25967*(1 - RTP) + 10.26851*(1 - RTP(-1)) - 19.18862*(1 - RTP(-2)) + 6.93390*(1 - RTP(-3))$   
 $DRF75O\_FE = -40.60841*(1 - RTP) + 42.55417*(1 - RTP(-1)) - 29.60376*(1 - RTP(-2)) - 14.09088*(1 - RTP(-3))$

#### **UNEMPLOYMENT RATES, FULL EMPLOYMENT DIFFERENTIALS TOTALS**

##### **MALE**

$RM1617\_FE = RM1617 + DRM1617\_FE$   
 $RM1819\_FE = RM1819 + DRM1819\_FE$   
 $RM2024\_FE = RM2024 + DRM2024\_FE$   
 $RM2529\_FE = RM2529 + DRM2529\_FE$   
 $RM3034\_FE = RM3034 + DRM3034\_FE$   
 $RM3539\_FE = RM3539 + DRM3539\_FE$   
 $RM4044\_FE = RM4044 + DRM4044\_FE$   
 $RM4549\_FE = RM4549 + DRM4549\_FE$   
 $RM5054\_FE = RM5054 + DRM5054\_FE$   
 $RM5559\_FE = RM5559 + DRM5559\_FE$   
 $RM6064\_FE = RM6064 + DRM6064\_FE$   
 $RM6569\_FE = RM6569 + DRM6569\_FE$   
 $RM7074\_FE = RM7074 + DRM7074\_FE$   
 $RM75O\_FE = RM75O + DRM75O\_FE$

##### **FEMALE**

$RF1617\_FE = RF1617 + DRF1617\_FE$   
 $RF1819\_FE = RF1819 + DRF1819\_FE$   
 $RF2024\_FE = RF2024 + DRF2024\_FE$   
 $RF2529\_FE = RF2529 + DRF2529\_FE$   
 $RF3034\_FE = RF3034 + DRF3034\_FE$   
 $RF3539\_FE = RF3539 + DRF3539\_FE$   
 $RF4044\_FE = RF4044 + DRF4044\_FE$   
 $RF4549\_FE = RF4549 + DRF4549\_FE$   
 $RF5054\_FE = RF5054 + DRF5054\_FE$   
 $RF5559\_FE = RF5559 + DRF5559\_FE$   
 $RF6064\_FE = RF6064 + DRF6064\_FE$   
 $RF6569\_FE = RF6569 + DRF6569\_FE$   
 $RF7074\_FE = RF7074 + DRF7074\_FE$   
 $RF75O\_FE = RF75O + DRF75O\_FE$

#### **LABOR FORCE PARTICIPATION RATES (LFPR)**

[Full estimation details for these equations are available upon request.]

##### **MALE LFPR EQUATIONS**

###### **MALE 1617 AND 1819**

$PM1617\_P = [ (-0.00134*RM1617 - 0.00167*RM1617(-1) - 0.00132*RM1617(-2) - 0.00065*RM1617(-3) )$   
 $+ 0.00003*RM1617(-4) + 0.00035*RM1617(-5) )$   
 $- 0.01009 * TR\_M1617 + 0.49638$   
 $+ 0.98199 ] / (1 + RM1617DI)$

$PM1819\_P = [ (-0.00068*RM1819 - 0.00092*RM1819(-1) - 0.00083*RM1819(-2) - 0.00056*RM1819(-3) )$   
 $- 0.00025*RM1819(-4) - 0.00002*RM1819(-5) )$   
 $- 0.00780 * TR\_M1819 + 0.47128$   
 $+ 0.97741 ] / (1 + RM1819DI)$

$PM1617 = PM1617\_P$

PM1819 = PM1819\_P

**MALE 20 TO 54, NEVER MARRIED**

$$\begin{aligned} \text{PM2024NM\_P} = & [ (-0.00053 * \text{RM2024} - 0.00074 * \text{RM2024}(-1) - 0.00071 * \text{RM2024}(-2) - 0.00054 * \text{RM2024}(-3) \\ & - 0.00030 * \text{RM2024}(-4) - 0.00010 * \text{RM2024}(-5)) \\ & - 0.00310 * \text{TR\_M2024} \\ & + 1.12658 ] / (1 + \text{RM2024DI}) \end{aligned}$$

$$\begin{aligned} \text{PM2529NM\_P} = & [ (-0.00031 * \text{RM2529} - 0.00053 * \text{RM2529}(-1) - 0.00066 * \text{RM2529}(-2) - 0.00068 * \text{RM2529}(-3) \\ & - 0.00058 * \text{RM2529}(-4) - 0.00036 * \text{RM2529}(-5)) \\ & - 0.00091 * \text{TR\_M2529} \\ & + 0.99893 ] / (1 + \text{RM2529DI}) \end{aligned}$$

$$\begin{aligned} \text{PM3034NM\_P} = & [ (-0.00001 * \text{RM3034} - 0.00018 * \text{RM3034}(-1) - 0.00040 * \text{RM3034}(-2) - 0.00058 * \text{RM3034}(-3) \\ & - 0.00064 * \text{RM3034}(-4) - 0.00047 * \text{RM3034}(-5)) \\ & + 0.89877 ] / (1 + \text{RM3034DI}) \end{aligned}$$

$$\begin{aligned} \text{PM3539NM\_P} = & [ (0.00048 * \text{RM3539} + 0.00037 * \text{RM3539}(-1) - 0.00007 * \text{RM3539}(-2) - 0.00058 * \text{RM3539}(-3) \\ & - 0.00091 * \text{RM3539}(-4) - 0.00080 * \text{RM3539}(-5)) \\ & + 0.87015 ] / (1 + \text{RM3539DI}) \end{aligned}$$

$$\begin{aligned} \text{PM4044NM\_P} = & [ (-0.00018 * \text{RM4044} - 0.00026 * \text{RM4044}(-1) - 0.00027 * \text{RM4044}(-2) - 0.00022 * \text{RM4044}(-3) \\ & - 0.00014 * \text{RM4044}(-4) - 0.00006 * \text{RM4044}(-5)) \\ & + 0.83848 ] / (1 + \text{RM4044DI}) \end{aligned}$$

$$\begin{aligned} \text{PM4549NM\_P} = & [ (0.00004 * \text{RM4549} - 0.00011 * \text{RM4549}(-1) - 0.00036 * \text{RM4549}(-2) - 0.00059 * \text{RM4549}(-3) \\ & - 0.00068 * \text{RM4549}(-4) - 0.00052 * \text{RM4549}(-5)) \\ & + 0.80657 ] / (1 + \text{RM4549DI}) \end{aligned}$$

$$\begin{aligned} \text{PM5054NM\_P} = & [ (0.00115 * \text{RM5054} + 0.00089 * \text{RM5054}(-1) - 0.00017 * \text{RM5054}(-2) - 0.00141 * \text{RM5054}(-3) \\ & - 0.00220 * \text{RM5054}(-4) - 0.00194 * \text{RM5054}(-5)) \\ & + 0.77113 ] / (1 + \text{RM5054DI}) \end{aligned}$$

**MALE 20 TO 54, MARRIED, SPOUSE PRESENT**

$$\begin{aligned} \text{PM2024MS\_P} = & [ (-0.00053 * \text{RM2024} - 0.00074 * \text{RM2024}(-1) - 0.00071 * \text{RM2024}(-2) - 0.00054 * \text{RM2024}(-3) \\ & - 0.00030 * \text{RM2024}(-4) - 0.00010 * \text{RM2024}(-5)) \\ & - 0.00141 * \text{TR\_M2024} \\ & + 1.10245 ] / (1 + \text{RM2024DI}) \end{aligned}$$

$$\begin{aligned} \text{PM2529MS\_P} = & [ (-0.00031 * \text{RM2529} - 0.00053 * \text{RM2529}(-1) - 0.00066 * \text{RM2529}(-2) - 0.00068 * \text{RM2529}(-3) \\ & - 0.00058 * \text{RM2529}(-4) - 0.00036 * \text{RM2529}(-5)) \\ & - 0.00048 * \text{TR\_M2529} \\ & + 1.02497 ] / (1 + \text{RM2529DI}) \end{aligned}$$

$$\begin{aligned} \text{PM3034MS\_P} = & [ (-0.00001 * \text{RM3034} - 0.00018 * \text{RM3034}(-1) - 0.00040 * \text{RM3034}(-2) - 0.00058 * \text{RM3034}(-3) \\ & - 0.00064 * \text{RM3034}(-4) - 0.00047 * \text{RM3034}(-5)) \\ & + 0.97980 ] / (1 + \text{RM3034DI}) \end{aligned}$$

$$\begin{aligned} \text{PM3539MS\_P} = & [ (0.00048 * \text{RM3539} + 0.00037 * \text{RM3539}(-1) - 0.00007 * \text{RM3539}(-2) - 0.00058 * \text{RM3539}(-3) \\ & - 0.00091 * \text{RM3539}(-4) - 0.00080 * \text{RM3539}(-5)) \\ & + 0.98104 ] / (1 + \text{RM3539DI}) \end{aligned}$$

$$\begin{aligned} \text{PM4044MS\_P} = & [ (-0.00018 * \text{RM4044} - 0.00026 * \text{RM4044}(-1) - 0.00027 * \text{RM4044}(-2) - 0.00022 * \text{RM4044}(-3) \\ & - 0.00014 * \text{RM4044}(-4) - 0.00006 * \text{RM4044}(-5)) \\ & + 0.98178 ] / (1 + \text{RM4044DI}) \end{aligned}$$

$$\begin{aligned} \text{PM4549MS\_P} = & [ (0.00004 * \text{RM4549} - 0.00011 * \text{RM4549}(-1) - 0.00036 * \text{RM4549}(-2) - 0.00059 * \text{RM4549}(-3) \\ & - 0.00068 * \text{RM4549}(-4) - 0.00052 * \text{RM4549}(-5)) \\ & + 0.98395 ] / (1 + \text{RM4549DI}) \end{aligned}$$

$$\text{PM5054MS\_P} = [ (0.00115 * \text{RM5054} + 0.00089 * \text{RM5054}(-1) - 0.00017 * \text{RM5054}(-2) - 0.00141 * \text{RM5054}(-3)$$

$$- 0.00220 * \text{RM5054}(-4) - 0.00194 * \text{RM5054}(-5) \\ + 0.97763 ] / (1 + \text{RM5054DI})$$

**MALE 20 TO 54, MARRIED, SPOUSE ABSENT**

$$\text{PM2024MA\_P} = [ (-0.00053 * \text{RM2024} - 0.00074 * \text{RM2024}(-1) - 0.00071 * \text{RM2024}(-2) - 0.00054 * \text{RM2024}(-3) \\ - 0.00030 * \text{RM2024}(-4) - 0.00010 * \text{RM2024}(-5)) \\ - 0.00441 * \text{TR\_M2024} \\ + 1.33014 ] / (1 + \text{RM2024DI})$$

$$\text{PM2529MA\_P} = [ (-0.00031 * \text{RM2529} - 0.00053 * \text{RM2529}(-1) - 0.00066 * \text{RM2529}(-2) - 0.00068 * \text{RM2529}(-3) \\ - 0.00058 * \text{RM2529}(-4) - 0.00036 * \text{RM2529}(-5)) \\ - 0.00061 * \text{TR\_M2529} \\ + 0.98620 ] / (1 + \text{RM2529DI})$$

$$\text{PM3034MA\_P} = [ (-0.00001 * \text{RM3034} - 0.00018 * \text{RM3034}(-1) - 0.00040 * \text{RM3034}(-2) - 0.00058 * \text{RM3034}(-3) \\ - 0.00064 * \text{RM3034}(-4) - 0.00047 * \text{RM3034}(-5)) \\ + 0.93031 ] / (1 + \text{RM3034DI})$$

$$\text{PM3539MA\_P} = [ (0.00048 * \text{RM3539} + 0.00037 * \text{RM3539}(-1) - 0.00007 * \text{RM3539}(-2) - 0.00058 * \text{RM3539}(-3) \\ - 0.00091 * \text{RM3539}(-4) - 0.00080 * \text{RM3539}(-5)) \\ + 0.92144 ] / (1 + \text{RM3539DI})$$

$$\text{PM4044MA\_P} = [ (-0.00018 * \text{RM4044} - 0.00026 * \text{RM4044}(-1) - 0.00027 * \text{RM4044}(-2) - 0.00022 * \text{RM4044}(-3) \\ - 0.00014 * \text{RM4044}(-4) - 0.00006 * \text{RM4044}(-5)) \\ + 0.90958 ] / (1 + \text{RM4044DI})$$

$$\text{PM4549MA\_P} = [ (0.00004 * \text{RM4549} - 0.00011 * \text{RM4549}(-1) - 0.00036 * \text{RM4549}(-2) - 0.00059 * \text{RM4549}(-3) \\ - 0.00068 * \text{RM4549}(-4) - 0.00052 * \text{RM4549}(-5)) \\ + 0.88963 ] / (1 + \text{RM4549DI})$$

$$\text{PM5054MA\_P} = [ (0.00115 * \text{RM5054} + 0.00089 * \text{RM5054}(-1) - 0.00017 * \text{RM5054}(-2) - 0.00141 * \text{RM5054}(-3) \\ - 0.00220 * \text{RM5054}(-4) - 0.00194 * \text{RM5054}(-5)) \\ + 0.85714 ] / (1 + \text{RM5054DI})$$

**MALE AGE 20 TO 54**

$$\begin{aligned} \text{PM2024\_P} &= (\text{PM2024NM\_P} * \text{NM2024NM} + \text{PM2024MS\_P} * \text{NM2024MS} + \text{PM2024MA\_P} * \text{NM2024MA}) / \text{NM2024} \\ \text{PM2529\_P} &= (\text{PM2529NM\_P} * \text{NM2529NM} + \text{PM2529MS\_P} * \text{NM2529MS} + \text{PM2529MA\_P} * \text{NM2529MA}) / \text{NM2529} \\ \text{PM3034\_P} &= (\text{PM3034NM\_P} * \text{NM3034NM} + \text{PM3034MS\_P} * \text{NM3034MS} + \text{PM3034MA\_P} * \text{NM3034MA}) / \text{NM3034} \\ \text{PM3539\_P} &= (\text{PM3539NM\_P} * \text{NM3539NM} + \text{PM3539MS\_P} * \text{NM3539MS} + \text{PM3539MA\_P} * \text{NM3539MA}) / \text{NM3539} \\ \text{PM4044\_P} &= (\text{PM4044NM\_P} * \text{NM4044NM} + \text{PM4044MS\_P} * \text{NM4044MS} + \text{PM4044MA\_P} * \text{NM4044MA}) / \text{NM4044} \\ \text{PM4549\_P} &= (\text{PM4549NM\_P} * \text{NM4549NM} + \text{PM4549MS\_P} * \text{NM4549MS} + \text{PM4549MA\_P} * \text{NM4549MA}) / \text{NM4549} \\ \text{PM5054\_P} &= (\text{PM5054NM\_P} * \text{NM5054NM} + \text{PM5054MS\_P} * \text{NM5054MS} + \text{PM5054MA\_P} * \text{NM5054MA}) / \text{NM5054} \end{aligned}$$

$$\text{PM2024} = \text{PM2024\_P}$$

$$\text{PM2529} = \text{PM2529\_P}$$

$$\text{PM3034} = \text{PM3034\_P}$$

$$\text{PM3539} = \text{PM3539\_P}$$

$$\text{PM4044} = \text{PM4044\_P}$$

$$\text{PM4549} = \text{PM4549\_P}$$

$$\text{PM5054} = \text{PM5054\_P}$$

$$\text{PM2024NM} = \text{PM2024NM\_P} * \text{PM2024} / \text{PM2024\_P}$$

$$\text{PM2529NM} = \text{PM2529NM\_P} * \text{PM2529} / \text{PM2529\_P}$$

$$\text{PM3034NM} = \text{PM3034NM\_P} * \text{PM3034} / \text{PM3034\_P}$$

$$\text{PM3539NM} = \text{PM3539NM\_P} * \text{PM3539} / \text{PM3539\_P}$$

$$\text{PM4044NM} = \text{PM4044NM\_P} * \text{PM4044} / \text{PM4044\_P}$$

$$\text{PM4549NM} = \text{PM4549NM\_P} * \text{PM4549} / \text{PM4549\_P}$$

$$\text{PM5054NM} = \text{PM5054NM\_P} * \text{PM5054} / \text{PM5054\_P}$$

$$\text{PM2024MS} = \text{PM2024MS\_P} * \text{PM2024} / \text{PM2024\_P}$$

$$\text{PM2529MS} = \text{PM2529MS\_P} * \text{PM2529} / \text{PM2529\_P}$$

$PM3034MS = PM3034MS\_P * PM3034 / PM3034\_P$   
 $PM3539MS = PM3539MS\_P * PM3539 / PM3539\_P$   
 $PM4044MS = PM4044MS\_P * PM4044 / PM4044\_P$   
 $PM4549MS = PM4549MS\_P * PM4549 / PM4549\_P$   
 $PM5054MS = PM5054MS\_P * PM5054 / PM5054\_P$

$PM2024MA = PM2024MA\_P * PM2024 / PM2024\_P$   
 $PM2529MA = PM2529MA\_P * PM2529 / PM2529\_P$   
 $PM3034MA = PM3034MA\_P * PM3034 / PM3034\_P$   
 $PM3539MA = PM3539MA\_P * PM3539 / PM3539\_P$   
 $PM4044MA = PM4044MA\_P * PM4044 / PM4044\_P$   
 $PM4549MA = PM4549MA\_P * PM4549 / PM4549\_P$   
 $PM5054MA = PM5054MA\_P * PM5054 / PM5054\_P$

#### MALE AGE 55 TO 74

$$PM55\_P = [ 0.00197 * EDSCOREM55 - 0.09058 * MSSHARE\_M55 + 0.95174 ] / (1 + RM55DI)$$

$$PM56\_P = [ -0.01821 * EDSCOREM56 - 0.10617 * MSSHARE\_M56 + 0.98672 ] / (1 + RM56DI)$$

$$PM57\_P = [ -0.01861 * EDSCOREM57 - 0.21015 * MSSHARE\_M57 + 1.05211 ] / (1 + RM57DI)$$

$$PM58\_P = [ 0.01509 * EDSCOREM58 - 0.22982 * MSSHARE\_M58 + 0.99265 ] / (1 + RM58DI)$$

$$PM59\_P = [ 0.00952 * EDSCOREM59 - 0.30748 * MSSHARE\_M59 + 1.04218 ] / (1 + RM59DI)$$

$$PM60\_P = [ 0.03704 * EDSCOREM60 - 0.32468 * MSSHARE\_M60 + 0.96171 ] / (1 + RM60DI)$$

$$PM61\_P = [ 0.00718 * EDSCOREM61 - 0.44317 * MSSHARE\_M61 + 1.07617 ] / (1 + RM61DI)$$

$$PM62\_P = [ -0.60 * RRADJ\_M62 - 0.02 * POT\_ET\_TXRT\_62 \\ + 0.10092 * EDSCOREM62 - 0.55927 * MSSHARE\_M62 + 1.09868 ] / (1 + RM62DI)$$

$$PM63\_P = [ -0.55 * RRADJ\_M63 - 0.02 * POT\_ET\_TXRT\_63 \\ + 0.06427 * EDSCOREM63 - 0.95029 * MSSHARE\_M63 + 1.39001 ] / (1 + RM63DI)$$

$$PM64\_P = [ -0.50 * RRADJ\_M64 - 0.02 * POT\_ET\_TXRT\_64 \\ + 0.05462 * EDSCOREM64 - 1.01565 * MSSHARE\_M64 + 1.40427 ] / (1 + RM64DI)$$

$$PM65\_P = [ -0.45 * RRADJ\_M65 - 0.02 * POT\_ET\_TXRT\_65 \\ + 0.14092 * EDSCOREM65 - 0.56959 * MSSHARE\_M65 + 0.83637 ] / (1 + RM65DI)$$

$$PM66\_P = [ -0.40 * RRADJ\_M66 - 0.02 * POT\_ET\_TXRT\_66 \\ + 0.08401 * EDSCOREM66 - 0.71602 * MSSHARE\_M66 + 0.99009 ] / (1 + RM66DI)$$

$$PM67\_P = [ -0.35 * RRADJ\_M67 - 0.02 * POT\_ET\_TXRT\_67 \\ + 0.09458 * EDSCOREM67 - 0.80679 * MSSHARE\_M67 + 0.98465 ] / (1 + RM67DI)$$

$$PM68\_P = [ -0.30 * RRADJ\_M68 - 0.02 * POT\_ET\_TXRT\_68 \\ + 0.11230 * EDSCOREM68 - 0.91881 * MSSHARE\_M68 + 0.99375 ] / (1 + RM68DI)$$

$$PM69\_P = [ -0.30 * RRADJ\_M69 - 0.02 * POT\_ET\_TXRT\_69 \\ + 0.09610 * EDSCOREM69 - 0.83697 * MSSHARE\_M69 + 0.93415 ] / (1 + RM69DI)$$

$$PM70\_P = [ 0.09997 * EDSCOREM70 - 0.22828 * MSSHARE\_M70 + 0.28131 ] / (1 + RM70DI)$$

$$PM71\_P = [ 0.12351 * EDSCOREM71 + 0.13152 * MSSHARE\_M71 - 0.04761 ] / (1 + RM71DI)$$

$$PM72\_P = [ 0.13620 * EDSCOREM72 - 0.19020 * MSSHARE\_M72 + 0.15703 ] / (1 + RM72DI)$$

$$PM73\_P = [ 0.13710 * EDSCOREM73 + 0.26157 * MSSHARE\_M73 - 0.20437 ] / (1 + RM73DI)$$

$$PM74\_P = [ 0.13464 * EDSCOREM74 + 0.42963 * MSSHARE\_M74 - 0.34404 ] / (1 + RM74DI)$$

**MALE AGE 75 TO 79**

PM75\_P = PM74(-4) \* 0.92

PM76\_P = PM75(-4) \* 0.92

PM77\_P = PM76(-4) \* 0.92

PM78\_P = PM77(-4) \* 0.92

PM79\_P = PM78(-4) \* 0.92

**MALE AGE 55 TO 79**

PM55 = PM55\_P

PM56 = PM56\_P

PM57 = PM57\_P

PM58 = PM58\_P

PM59 = PM59\_P

PM60 = PM60\_P

PM61 = PM61\_P

PM62 = PM62\_P

PM63 = PM63\_P

PM64 = PM64\_P

PM65 = PM65\_P

PM66 = PM66\_P

PM67 = PM67\_P

PM68 = PM68\_P

PM69 = PM69\_P

PM70 = PM70\_P

PM71 = PM71\_P

PM72 = PM72\_P

PM73 = PM73\_P

PM74 = PM74\_P

PM75 = PM75\_P

PM76 = PM76\_P

PM77 = PM77\_P

PM78 = PM78\_P

PM79 = PM79\_P

**MALE AGE 80 AND OVER**

PM80\_P = PM79(-4) \* 0.965 ^ 1

PM81\_P = PM79(-8) \* 0.965 ^ 2

PM82\_P = PM79(-12) \* 0.965 ^ 3

PM83\_P = PM79(-16) \* 0.965 ^ 4

PM84\_P = PM79(-20) \* 0.965 ^ 5

```

PM85_P = MOVAVG(8,PM79(-24)) * 0.965 ^ 6
PM86_P = MOVAVG(8,PM79(-28)) * 0.965 ^ 7
PM87_P = MOVAVG(8,PM79(-32)) * 0.965 ^ 8
PM88_P = MOVAVG(8,PM79(-36)) * 0.965 ^ 9
PM89_P = MOVAVG(8,PM79(-40)) * 0.965 ^ 10
PM90_P = MOVAVG(8,PM79(-44)) * 0.965 ^ 11
PM91_P = MOVAVG(8,PM79(-48)) * 0.965 ^ 12
PM92_P = MOVAVG(8,PM79(-52)) * 0.965 ^ 13
PM93_P = MOVAVG(8,PM79(-56)) * 0.965 ^ 14
PM94_P = MOVAVG(8,PM79(-60)) * 0.965 ^ 15
PM95_P = PM94_P * 0.965
PM96_P = PM95_P * 0.965
PM97_P = PM96_P * 0.965
PM98_P = PM97_P * 0.965
PM99_P = PM98_P * 0.965
PM100_P = PM99_P * 0.965

PM80O_P = (PM80_P*NM80 + PM81_P*NM81 + PM82_P*NM82 + PM83_P*NM83 + PM84_P*NM84
           + PM85_P*NM85 + PM86_P*NM86 + PM87_P*NM87 + PM88_P*NM88 + PM89_P*NM89
           + PM90_P*NM90 + PM91_P*NM91 + PM92_P*NM92 + PM93_P*NM93 + PM94_P*NM94
           + PM95_P*NM95 + PM96_P*NM96 + PM97_P*NM97 + PM98_P*NM98 + PM99_P*NM99
           + PM100_P*NM100) / NM80O

PM80O = PM80O_P
PM80 = PM80_P * PM80O / PM80O_P
PM81 = PM81_P * PM80O / PM80O_P
PM82 = PM82_P * PM80O / PM80O_P
PM83 = PM83_P * PM80O / PM80O_P
PM84 = PM84_P * PM80O / PM80O_P
PM85 = PM85_P * PM80O / PM80O_P
PM86 = PM86_P * PM80O / PM80O_P
PM87 = PM87_P * PM80O / PM80O_P
PM88 = PM88_P * PM80O / PM80O_P
PM89 = PM89_P * PM80O / PM80O_P
PM90 = PM90_P * PM80O / PM80O_P
PM91 = PM91_P * PM80O / PM80O_P
PM92 = PM92_P * PM80O / PM80O_P
PM93 = PM93_P * PM80O / PM80O_P
PM94 = PM94_P * PM80O / PM80O_P
PM95 = PM95_P * PM80O / PM80O_P
PM96 = PM96_P * PM80O / PM80O_P
PM97 = PM97_P * PM80O / PM80O_P

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$$PM98 = PM98\_P * PM80O / PM80O\_P$$

$$PM99 = PM99\_P * PM80O / PM80O\_P$$

$$PM100 = PM100\_P * PM80O / PM80O\_P$$

## FEMALE LFPR EQUATIONS

### FEMALE 1617 AND 1819

$$\begin{aligned} PF1617\_P = & [ -0.00214 * RF1617 - 0.00256 * RF1617(-1) - 0.00184 * RF1617(-2) - 0.00062 * RF1617(-3) \\ & + 0.00050 * RF1617(-4) + 0.00091 * RF1617(-5) \\ & - 0.33769 * RF1617CU6 + 0.01223 \\ & - 0.00981 * TR\_F1617 + 0.50143 \\ & + 0.98698 ] / (1 + RF1617DI) \end{aligned}$$

$$\begin{aligned} PF1819\_P = & [ -0.00118 * RF1819 - 0.00145 * RF1819(-1) - 0.00112 * RF1819(-2) - 0.00050 * RF1819(-3) \\ & + 0.00010 * RF1819(-4) + 0.00037 * RF1819(-5) \\ & - 0.42102 * RF1819CU6 - 0.01160 \\ & - 0.00829 * TR\_F1819 + 0.55840 \\ & + 0.98042 ] / (1 + RF1819DI) \end{aligned}$$

$$PF1617 = PF1617\_p$$

$$PF1819 = PF1819\_p$$

### FEMALE 20 TO 44, NEVER MARRIED WITH AT LEAST ONE CHILD UNDER 6:

$$\begin{aligned} PF2024NMC6U\_P = & [ -0.00006 * RF2024 - 0.00026 * RF2024(-1) - 0.00050 * RF2024(-2) - 0.00070 * RF2024(-3) \\ & - 0.00075 * RF2024(-4) - 0.00055 * RF2024(-5) \\ & + 0.69322 ] / (1 + RF2024DI) \end{aligned}$$

$$\begin{aligned} PF2529NMC6U\_P = & [ 0.00056 * RF2529 + 0.00034 * RF2529(-1) - 0.00030 * RF2529(-2) - 0.00101 * RF2529(-3) \\ & - 0.00143 * RF2529(-4) - 0.00121 * RF2529(-5) \\ & + 0.72672 ] / (1 + RF2529DI) \end{aligned}$$

$$\begin{aligned} PF3034NMC6U\_P = & [ 0.00078 * RF3034 + 0.00075 * RF3034(-1) + 0.00024 * RF3034(-2) - 0.00042 * RF3034(-3) \\ & - 0.00090 * RF3034(-4) - 0.00087 * RF3034(-5) \\ & + 0.72034 ] / (1 + RF3034DI) \end{aligned}$$

$$\begin{aligned} PF3539NMC6U\_P = & [ 0.00040 * RF3539 + 0.00032 * RF3539(-1) - 0.00004 * RF3539(-2) - 0.00046 * RF3539(-3) \\ & - 0.00074 * RF3539(-4) - 0.00066 * RF3539(-5) \\ & + 0.72644 ] / (1 + RF3539DI) \end{aligned}$$

$$\begin{aligned} PF4044NMC6U\_P = & [ 0.00113 * RF4044 + 0.00097 * RF4044(-1) + 0.00007 * RF4044(-2) - 0.00102 * RF4044(-3) \\ & - 0.00176 * RF4044(-4) - 0.00160 * RF4044(-5) \\ & + 0.71893 ] / (1 + RF4044DI) \end{aligned}$$

### FEMALE 20 TO 44, NEVER MARRIED WITH NO CHILDREN UNDER 6:

$$\begin{aligned} PF2024NMNC6\_P = & [ -0.00006 * RF2024 - 0.00026 * RF2024(-1) - 0.00050 * RF2024(-2) - 0.00070 * RF2024(-3) \\ & - 0.00075 * RF2024(-4) - 0.00055 * RF2024(-5) \\ & - 0.00297 * TR\_F2024 \\ & + 1.07188 ] / (1 + RF2024DI) \end{aligned}$$

$$\begin{aligned} PF2529NMNC6\_P = & [ 0.00056 * RF2529 + 0.00034 * RF2529(-1) - 0.00030 * RF2529(-2) - 0.00101 * RF2529(-3) \\ & - 0.00143 * RF2529(-4) - 0.00121 * RF2529(-5) \\ & - 0.00077 * TR\_F2529 \\ & + 0.94654 ] / (1 + RF2529DI) \end{aligned}$$

$$\begin{aligned} PF3034NMNC6\_P = & [ 0.00078 * RF3034 + 0.00075 * RF3034(-1) + 0.00024 * RF3034(-2) - 0.00042 * RF3034(-3) \\ & - 0.00090 * RF3034(-4) - 0.00087 * RF3034(-5) \\ & + 0.84866 ] / (1 + RF3034DI) \end{aligned}$$

$$PF3539NMNC6\_P = [ 0.00040 * RF3539 + 0.00032 * RF3539(-1) - 0.00004 * RF3539(-2) - 0.00046 * RF3539(-3) \\ - 0.00074 * RF3539(-4) - 0.00066 * RF3539(-5) \\ + 0.83195 ] / (1 + RF3539DI)$$

$$PF4044NMNC6\_P = [ 0.00113 * RF4044 + 0.00097 * RF4044(-1) + 0.00007 * RF4044(-2) - 0.00102 * RF4044(-3) \\ - 0.00176 * RF4044(-4) - 0.00160 * RF4044(-5) \\ + 0.82513 ] / (1 + RF4044DI)$$

**FEMALE 20 TO 44, MARRIED, SPOUSE PRESENT, WITH AT LEAST ONE CHILD UNDER 6:**

$$PF2024MSC6U\_P = [ - 0.00006 * RF2024 - 0.00026 * RF2024(-1) - 0.00050 * RF2024(-2) - 0.00070 * RF2024(-3) \\ - 0.00075 * RF2024(-4) - 0.00055 * RF2024(-5) \\ + 0.53561 ] / (1 + RF2024DI)$$

$$PF2529MSC6U\_P = [ 0.00056 * RF2529 + 0.00034 * RF2529(-1) - 0.00030 * RF2529(-2) - 0.00101 * RF2529(-3) \\ - 0.00143 * RF2529(-4) - 0.00121 * RF2529(-5) \\ + 0.61916 ] / (1 + RF2529DI)$$

$$PF3034MSC6U\_P = [ 0.00078 * RF3034 + 0.00075 * RF3034(-1) + 0.00024 * RF3034(-2) - 0.00042 * RF3034(-3) \\ - 0.00090 * RF3034(-4) - 0.00087 * RF3034(-5) \\ + 0.65485 ] / (1 + RF3034DI)$$

$$PF3539MSC6U\_P = [ 0.00040 * RF3539 + 0.00032 * RF3539(-1) - 0.00004 * RF3539(-2) - 0.00046 * RF3539(-3) \\ - 0.00074 * RF3539(-4) - 0.00066 * RF3539(-5) \\ + 0.66673 ] / (1 + RF3539DI)$$

$$PF4044MSC6U\_P = [ 0.00113 * RF4044 + 0.00097 * RF4044(-1) + 0.00007 * RF4044(-2) - 0.00102 * RF4044(-3) \\ - 0.00176 * RF4044(-4) - 0.00160 * RF4044(-5) \\ + 0.67612 ] / (1 + RF4044DI)$$

**FEMALE 20 TO 44, MARRIED, SPOUSE PRESENT WITH NO CHILDREN UNDER 6:**

$$PF2024MSNC6\_P = [ - 0.00006 * RF2024 - 0.00026 * RF2024(-1) - 0.00050 * RF2024(-2) - 0.00070 * RF2024(-3) \\ - 0.00075 * RF2024(-4) - 0.00055 * RF2024(-5) \\ - 0.00175 * TR_F2024 \\ + 0.98277 ] / (1 + RF2024DI)$$

$$PF2529MSNC6\_P = [ 0.00056 * RF2529 + 0.00034 * RF2529(-1) - 0.00030 * RF2529(-2) - 0.00101 * RF2529(-3) \\ - 0.00143 * RF2529(-4) - 0.00121 * RF2529(-5) \\ - 0.00050 * TR_F2529 \\ + 0.88519 ] / (1 + RF2529DI)$$

$$PF3034MSNC6\_P = [ 0.00078 * RF3034 + 0.00075 * RF3034(-1) + 0.00024 * RF3034(-2) - 0.00042 * RF3034(-3) \\ - 0.00090 * RF3034(-4) - 0.00087 * RF3034(-5) \\ + 0.80007 ] / (1 + RF3034DI)$$

$$PF3539MSNC6\_P = [ 0.00040 * RF3539 + 0.00032 * RF3539(-1) - 0.00004 * RF3539(-2) - 0.00046 * RF3539(-3) \\ - 0.00074 * RF3539(-4) - 0.00066 * RF3539(-5) \\ + 0.79025 ] / (1 + RF3539DI)$$

$$PF4044MSNC6\_P = [ 0.00113 * RF4044 + 0.00097 * RF4044(-1) + 0.00007 * RF4044(-2) - 0.00102 * RF4044(-3) \\ - 0.00176 * RF4044(-4) - 0.00160 * RF4044(-5) \\ + 0.81064 ] / (1 + RF4044DI)$$

**FEMALE 20 TO 44, MARRIED, SPOUSE ABSENT, WITH AT LEAST ONE CHILD UNDER 6:**

$$PF2024MAC6U\_P = [ - 0.00006 * RF2024 - 0.00026 * RF2024(-1) - 0.00050 * RF2024(-2) - 0.00070 * RF2024(-3) \\ - 0.00075 * RF2024(-4) - 0.00055 * RF2024(-5) ]$$

$$+ 0.73283 ] / (1 + RF2024DI)$$

$$\begin{aligned} \text{PF2529MAC6U\_P} = & [ 0.00056 * \text{RF2529} + 0.00034 * \text{RF2529}(-1) - 0.00030 * \text{RF2529}(-2) - 0.00101 * \text{RF2529}(-3) \\ & - 0.00143 * \text{RF2529}(-4) - 0.00121 * \text{RF2529}(-5) \\ & + 0.76433 ] / (1 + \text{RF2529DI}) \end{aligned}$$

$$\begin{aligned} \text{PF3034MAC6U\_P} = & [ 0.00078 * \text{RF3034} + 0.00075 * \text{RF3034}(-1) + 0.00024 * \text{RF3034}(-2) - 0.00042 * \text{RF3034}(-3) \\ & - 0.00090 * \text{RF3034}(-4) - 0.00087 * \text{RF3034}(-5) \\ & + 0.77183 ] / (1 + \text{RF3034DI}) \end{aligned}$$

$$\begin{aligned} \text{PF3539MAC6U\_P} = & [ 0.00040 * \text{RF3539} + 0.00032 * \text{RF3539}(-1) - 0.00004 * \text{RF3539}(-2) - 0.00046 * \text{RF3539}(-3) \\ & - 0.00074 * \text{RF3539}(-4) - 0.00066 * \text{RF3539}(-5) \\ & + 0.77156 ] / (1 + \text{RF3539DI}) \end{aligned}$$

$$\begin{aligned} \text{PF4044MAC6U\_P} = & [ 0.00113 * \text{RF4044} + 0.00097 * \text{RF4044}(-1) + 0.00007 * \text{RF4044}(-2) - 0.00102 * \text{RF4044}(-3) \\ & - 0.00176 * \text{RF4044}(-4) - 0.00160 * \text{RF4044}(-5) \\ & + 0.76058 ] / (1 + \text{RF4044DI}) \end{aligned}$$

#### **FEMALE 20 TO 44, MARRIED, SPOUSE ABSENT WITH NO CHILDREN UNDER 6:**

$$\begin{aligned} \text{PF2024MANC6\_P} = & [ - 0.00006 * \text{RF2024} - 0.00026 * \text{RF2024}(-1) - 0.00050 * \text{RF2024}(-2) - 0.00070 * \text{RF2024}(-3) \\ & - 0.00075 * \text{RF2024}(-4) - 0.00055 * \text{RF2024}(-5) \\ & - 0.00223 * \text{TR\_F2024} \\ & + 0.97444 ] / (1 + \text{RF2024DI}) \end{aligned}$$

$$\begin{aligned} \text{PF2529MANC6\_P} = & [ 0.00056 * \text{RF2529} + 0.00034 * \text{RF2529}(-1) - 0.00030 * \text{RF2529}(-2) - 0.00101 * \text{RF2529}(-3) \\ & - 0.00143 * \text{RF2529}(-4) - 0.00121 * \text{RF2529}(-5) \\ & + 0.00025 * \text{TR\_F2529} \\ & + 0.79370 ] / (1 + \text{RF2529DI}) \end{aligned}$$

$$\begin{aligned} \text{PF3034MANC6\_P} = & [ 0.00078 * \text{RF3034} + 0.00075 * \text{RF3034}(-1) + 0.00024 * \text{RF3034}(-2) - 0.00042 * \text{RF3034}(-3) \\ & - 0.00090 * \text{RF3034}(-4) - 0.00087 * \text{RF3034}(-5) \\ & + 0.83788 ] / (1 + \text{RF3034DI}) \end{aligned}$$

$$\begin{aligned} \text{PF3539MANC6\_P} = & [ 0.00040 * \text{RF3539} + 0.00032 * \text{RF3539}(-1) - 0.00004 * \text{RF3539}(-2) - 0.00046 * \text{RF3539}(-3) \\ & - 0.00074 * \text{RF3539}(-4) - 0.00066 * \text{RF3539}(-5) \\ & + 0.84820 ] / (1 + \text{RF3539DI}) \end{aligned}$$

$$\begin{aligned} \text{PF4044MANC6\_P} = & [ 0.00113 * \text{RF4044} + 0.00097 * \text{RF4044}(-1) + 0.00007 * \text{RF4044}(-2) - 0.00102 * \text{RF4044}(-3) \\ & - 0.00176 * \text{RF4044}(-4) - 0.00160 * \text{RF4044}(-5) \\ & + 0.85568 ] / (1 + \text{RF4044DI}) \end{aligned}$$

$$\text{PF2024NM\_P} = (\text{PF2024NMC6U\_P} * \text{NF2024NMC6U} + \text{PF2024NMNC6\_P} * \text{NF2024NMNC6}) / \text{NF2024NM}$$

$$\text{PF2024MS\_P} = (\text{PF2024MSC6U\_P} * \text{NF2024MSC6U} + \text{PF2024MSNC6\_P} * \text{NF2024MSNC6}) / \text{NF2024MS}$$

$$\text{PF2024MA\_P} = (\text{PF2024MAC6U\_P} * \text{NF2024MAC6U} + \text{PF2024MANC6\_P} * \text{NF2024MANC6}) / \text{NF2024MA}$$

$$\text{PF2529NM\_P} = (\text{PF2529NMC6U\_P} * \text{NF2529NMC6U} + \text{PF2529NMNC6\_P} * \text{NF2529NMNC6}) / \text{NF2529NM}$$

$$\text{PF2529MS\_P} = (\text{PF2529MSC6U\_P} * \text{NF2529MSC6U} + \text{PF2529MSNC6\_P} * \text{NF2529MSNC6}) / \text{NF2529MS}$$

$$\text{PF2529MA\_P} = (\text{PF2529MAC6U\_P} * \text{NF2529MAC6U} + \text{PF2529MANC6\_P} * \text{NF2529MANC6}) / \text{NF2529MA}$$

$$\text{PF3034NM\_P} = (\text{PF3034NMC6U\_P} * \text{NF3034NMC6U} + \text{PF3034NMNC6\_P} * \text{NF3034NMNC6}) / \text{NF3034NM}$$

$$\text{PF3034MS\_P} = (\text{PF3034MSC6U\_P} * \text{NF3034MSC6U} + \text{PF3034MSNC6\_P} * \text{NF3034MSNC6}) / \text{NF3034MS}$$

$$\text{PF3034MA\_P} = (\text{PF3034MAC6U\_P} * \text{NF3034MAC6U} + \text{PF3034MANC6\_P} * \text{NF3034MANC6}) / \text{NF3034MA}$$

$$\text{PF3539NM\_P} = (\text{PF3539NMC6U\_P} * \text{NF3539NMC6U} + \text{PF3539NMNC6\_P} * \text{NF3539NMNC6}) / \text{NF3539NM}$$

$$\text{PF3539MS\_P} = (\text{PF3539MSC6U\_P} * \text{NF3539MSC6U} + \text{PF3539MSNC6\_P} * \text{NF3539MSNC6}) / \text{NF3539MS}$$

$$\begin{aligned}
\text{PF3539MA\_P} &= (\text{PF3539MAC6U\_P} * \text{NF3539MAC6U} + \text{PF3539MANC6\_P} * \text{NF3539MANC6}) / \text{NF3539MA} \\
\text{PF4044NM\_P} &= (\text{PF4044NMC6U\_P} * \text{NF4044NMC6U} + \text{PF4044NMNC6\_P} * \text{NF4044NMNC6}) / \text{NF4044NM} \\
\text{PF4044MS\_P} &= (\text{PF4044MSC6U\_P} * \text{NF4044MSC6U} + \text{PF4044MSNC6\_P} * \text{NF4044MSNC6}) / \text{NF4044MS} \\
\text{PF4044MA\_P} &= (\text{PF4044MAC6U\_P} * \text{NF4044MAC6U} + \text{PF4044MANC6\_P} * \text{NF4044MANC6}) / \text{NF4044MA}
\end{aligned}$$

#### **FEMALE AGE 45 TO 54**

##### **FEMALE 45 TO 54, NEVER MARRIED:**

$$\begin{aligned}
\text{PF4549NM\_P} &= [ 0.00155 * \text{RF4549} + 0.00133 * \text{RF4549}(-1) + 0.00007 * \text{RF4549}(-2) - 0.00145 * \text{RF4549}(-3) \\
&\quad - 0.00247 * \text{RF4549}(-4) - 0.00224 * \text{RF4549}(-5) \\
&\quad + 0.80950 ] / (1 + \text{RF4549DI})
\end{aligned}$$

$$\begin{aligned}
\text{PF5054NM\_P} &= [ 0.00093 * \text{RF5054} + 0.00074 * \text{RF5054}(-1) - 0.00008 * \text{RF5054}(-2) - 0.00104 * \text{RF5054}(-3) \\
&\quad - 0.00168 * \text{RF5054}(-4) - 0.00149 * \text{RF5054}(-5) \\
&\quad + 0.78085 ] / (1 + \text{RF5054DI})
\end{aligned}$$

##### **FEMALE 45 TO 54, MARRIED, SPOUSE PRESENT:**

$$\begin{aligned}
\text{PF4549MS\_P} &= [ 0.00155 * \text{RF4549} + 0.00133 * \text{RF4549}(-1) + 0.00007 * \text{RF4549}(-2) - 0.00145 * \text{RF4549}(-3) \\
&\quad - 0.00247 * \text{RF4549}(-4) - 0.00224 * \text{RF4549}(-5) \\
&\quad + 0.81276 ] / (1 + \text{RF4549DI})
\end{aligned}$$

$$\begin{aligned}
\text{PF5054MS\_P} &= [ 0.00093 * \text{RF5054} + 0.00074 * \text{RF5054}(-1) - 0.00008 * \text{RF5054}(-2) - 0.00104 * \text{RF5054}(-3) \\
&\quad - 0.00168 * \text{RF5054}(-4) - 0.00149 * \text{RF5054}(-5) \\
&\quad + 0.48809 \\
&\quad + 0.16476 * \text{EDSCOREF5054} ] / (1 + \text{RF5054DI})
\end{aligned}$$

##### **FEMALE 45 TO 54, MARRIED, SPOUSE ABSENT:**

$$\begin{aligned}
\text{PF4549MA\_P} &= [ 0.00155 * \text{RF4549} + 0.00133 * \text{RF4549}(-1) + 0.00007 * \text{RF4549}(-2) - 0.00145 * \text{RF4549}(-3) \\
&\quad - 0.00247 * \text{RF4549}(-4) - 0.00224 * \text{RF4549}(-5) \\
&\quad + 0.84789 ] / (1 + \text{RF4549DI})
\end{aligned}$$

$$\begin{aligned}
\text{PF5054MA\_P} &= [ 0.00093 * \text{RF5054} + 0.00074 * \text{RF5054}(-1) - 0.00008 * \text{RF5054}(-2) - 0.00104 * \text{RF5054}(-3) \\
&\quad - 0.00168 * \text{RF5054}(-4) - 0.00149 * \text{RF5054}(-5) \\
&\quad + 0.81452 ] / (1 + \text{RF5054DI})
\end{aligned}$$

#### **FEMALE AGE 20 TO 54**

$$\begin{aligned}
\text{PF2024\_P} &= (\text{PF2024NM\_P} * \text{NF2024NM} + \text{PF2024MS\_P} * \text{NF2024MS} + \text{PF2024MA\_P} * \text{NF2024MA}) / \text{NF2024} \\
\text{PF2529\_P} &= (\text{PF2529NM\_P} * \text{NF2529NM} + \text{PF2529MS\_P} * \text{NF2529MS} + \text{PF2529MA\_P} * \text{NF2529MA}) / \text{NF2529} \\
\text{PF3034\_P} &= (\text{PF3034NM\_P} * \text{NF3034NM} + \text{PF3034MS\_P} * \text{NF3034MS} + \text{PF3034MA\_P} * \text{NF3034MA}) / \text{NF3034} \\
\text{PF3539\_P} &= (\text{PF3539NM\_P} * \text{NF3539NM} + \text{PF3539MS\_P} * \text{NF3539MS} + \text{PF3539MA\_P} * \text{NF3539MA}) / \text{NF3539} \\
\text{PF4044\_P} &= (\text{PF4044NM\_P} * \text{NF4044NM} + \text{PF4044MS\_P} * \text{NF4044MS} + \text{PF4044MA\_P} * \text{NF4044MA}) / \text{NF4044} \\
\text{PF4549\_P} &= (\text{PF4549NM\_P} * \text{NF4549NM} + \text{PF4549MS\_P} * \text{NF4549MS} + \text{PF4549MA\_P} * \text{NF4549MA}) / \text{NF4549} \\
\text{PF5054\_P} &= (\text{PF5054NM\_P} * \text{NF5054NM} + \text{PF5054MS\_P} * \text{NF5054MS} + \text{PF5054MA\_P} * \text{NF5054MA}) / \text{NF5054}
\end{aligned}$$

$$\begin{aligned}
\text{PF2024} &= \text{PF2024\_P} \\
\text{PF2529} &= \text{PF2529\_P} \\
\text{PF3034} &= \text{PF3034\_P} \\
\text{PF3539} &= \text{PF3539\_P} \\
\text{PF4044} &= \text{PF4044\_P} \\
\text{PF4549} &= \text{PF4549\_P} \\
\text{PF5054} &= \text{PF5054\_P}
\end{aligned}$$

$$\text{PF2024NM} = \text{PF2024NM\_P} * \text{PF2024} / \text{PF2024\_P}$$

$$\text{PF2529NM} = \text{PF2529NM\_P} * \text{PF2529} / \text{PF2529\_P}$$

$$\text{PF3034NM} = \text{PF3034NM\_P} * \text{PF3034} / \text{PF3034\_P}$$

$$\text{PF3539NM} = \text{PF3539NM\_P} * \text{PF3539} / \text{PF3539\_P}$$

PF4044NM = PF4044NM\_P \* PF4044 / PF4044\_P  
PF4549NM = PF4549NM\_P \* PF4549 / PF4549\_P  
PF5054NM = PF5054NM\_P \* PF5054 / PF5054\_P

PF2024MS = PF2024MS\_P \* PF2024 / PF2024\_P  
PF2529MS = PF2529MS\_P \* PF2529 / PF2529\_P  
PF3034MS = PF3034MS\_P \* PF3034 / PF3034\_P  
PF3539MS = PF3539MS\_P \* PF3539 / PF3539\_P  
PF4044MS = PF4044MS\_P \* PF4044 / PF4044\_P  
PF4549MS = PF4549MS\_P \* PF4549 / PF4549\_P  
PF5054MS = PF5054MS\_P \* PF5054 / PF5054\_P

PF2024MA = PF2024MA\_P \* PF2024 / PF2024\_P  
PF2529MA = PF2529MA\_P \* PF2529 / PF2529\_P  
PF3034MA = PF3034MA\_P \* PF3034 / PF3034\_P  
PF3539MA = PF3539MA\_P \* PF3539 / PF3539\_P  
PF4044MA = PF4044MA\_P \* PF4044 / PF4044\_P  
PF4549MA = PF4549MA\_P \* PF4549 / PF4549\_P  
PF5054MA = PF5054MA\_P \* PF5054 / PF5054\_P

PF2024NMC6U = PF2024NMC6U\_P \* PF2024 / PF2024\_P  
PF2529NMC6U = PF2529NMC6U\_P \* PF2529 / PF2529\_P  
PF3034NMC6U = PF3034NMC6U\_P \* PF3034 / PF3034\_P  
PF3539NMC6U = PF3539NMC6U\_P \* PF3539 / PF3539\_P  
PF4044NMC6U = PF4044NMC6U\_P \* PF4044 / PF4044\_P

PF2024NMNC6 = PF2024NMNC6\_P \* PF2024 / PF2024\_P  
PF2529NMNC6 = PF2529NMNC6\_P \* PF2529 / PF2529\_P  
PF3034NMNC6 = PF3034NMNC6\_P \* PF3034 / PF3034\_P  
PF3539NMNC6 = PF3539NMNC6\_P \* PF3539 / PF3539\_P  
PF4044NMNC6 = PF4044NMNC6\_P \* PF4044 / PF4044\_P

PF2024MSC6U = PF2024MSC6U\_P \* PF2024 / PF2024\_P  
PF2529MSC6U = PF2529MSC6U\_P \* PF2529 / PF2529\_P  
PF3034MSC6U = PF3034MSC6U\_P \* PF3034 / PF3034\_P  
PF3539MSC6U = PF3539MSC6U\_P \* PF3539 / PF3539\_P  
PF4044MSC6U = PF4044MSC6U\_P \* PF4044 / PF4044\_P

PF2024MSNC6 = PF2024MSNC6\_P \* PF2024 / PF2024\_P  
PF2529MSNC6 = PF2529MSNC6\_P \* PF2529 / PF2529\_P  
PF3034MSNC6 = PF3034MSNC6\_P \* PF3034 / PF3034\_P  
PF3539MSNC6 = PF3539MSNC6\_P \* PF3539 / PF3539\_P  
PF4044MSNC6 = PF4044MSNC6\_P \* PF4044 / PF4044\_P

PF2024MAC6U = PF2024MAC6U\_P \* PF2024 / PF2024\_P  
PF2529MAC6U = PF2529MAC6U\_P \* PF2529 / PF2529\_P  
PF3034MAC6U = PF3034MAC6U\_P \* PF3034 / PF3034\_P  
PF3539MAC6U = PF3539MAC6U\_P \* PF3539 / PF3539\_P  
PF4044MAC6U = PF4044MAC6U\_P \* PF4044 / PF4044\_P

PF2024MANC6 = PF2024MANC6\_P \* PF2024 / PF2024\_P  
PF2529MANC6 = PF2529MANC6\_P \* PF2529 / PF2529\_P  
PF3034MANC6 = PF3034MANC6\_P \* PF3034 / PF3034\_P  
PF3539MANC6 = PF3539MANC6\_P \* PF3539 / PF3539\_P  
PF4044MANC6 = PF4044MANC6\_P \* PF4044 / PF4044\_P

#### FEMALE 55 TO 74

PF55\_P = [ 0.18398\*EDSCOREF55 + 0.24605\*MSSHARE\_F55 + 0.26185 ] / (1 + RF55DI)

PF56\_P = [ 0.20704\*EDSCOREF56 - 0.12398\*MSSHARE\_F56 + 0.4493 ] / (1 + RF56DI)

PF57\_P = [ 0.18422\*EDSCOREF57 - 0.08766\*MSSHARE\_F57 + 0.45094 ] / (1 + RF57DI)

$$PF58\_P = [ 0.19406 * EDSCOREF58 - 0.06963 * MSShare\_F58 + 0.40382 ] / (1 + RF58DI)$$
  

$$PF59\_P = [ 0.21112 * EDSCOREF59 + 0.10742 * MSShare\_F59 + 0.24105 ] / (1 + RF59DI)$$
  

$$PF60\_P = [ 0.20633 * EDSCOREF60 - 0.41539 * MSShare\_F60 + 0.54178 ] / (1 + RF60DI)$$
  

$$PF61\_P = [ 0.19349 * EDSCOREF61 - 0.66676 * MSShare\_F61 + 0.68556 ] / (1 + RF61DI)$$
  

$$PF62\_P = [ - 0.5100 * RRADJ\_F62 - 0.02 * POT\_ET\_TXRT\_62 + 0.21249 * EDSCOREF62 + 0.01966 * MSShare\_F62 + 0.32876 ] / (1 + RF62DI)$$
  

$$PF63\_P = [ - 0.4675 * RRADJ\_F63 - 0.02 * POT\_ET\_TXRT\_63 + 0.21116 * EDSCOREF63 + 0.02896 * MSShare\_F63 + 0.26792 ] / (1 + RF63DI)$$
  

$$PF64\_P = [ - 0.4250 * RRADJ\_F64 - 0.02 * POT\_ET\_TXRT\_64 + 0.20467 * EDSCOREF64 - 0.32725 * MSShare\_F64 + 0.44786 ] / (1 + RF64DI)$$
  

$$PF65\_P = [ - 0.3825 * RRADJ\_F65 - 0.02 * POT\_ET\_TXRT\_65 + 0.20002 * EDSCOREF65 - 0.05830 * MSShare\_F65 + 0.22187 ] / (1 + RF65DI)$$
  

$$PF66\_P = [ - 0.3400 * RRADJ\_F66 - 0.02 * POT\_ET\_TXRT\_66 + 0.17479 * EDSCOREF66 + 0.22954 * MSShare\_F66 + 0.04361 ] / (1 + RF66DI)$$
  

$$PF67\_P = [ - 0.2975 * RRADJ\_F67 - 0.02 * POT\_ET\_TXRT\_67 + 0.17673 * EDSCOREF67 - 0.43942 * MSShare\_F67 + 0.38490 ] / (1 + RF67DI)$$
  

$$PF68\_P = [ - 0.2550 * RRADJ\_F68 - 0.02 * POT\_ET\_TXRT\_68 + 0.15513 * EDSCOREF68 + 0.35232 * MSShare\_F68 - 0.07497 ] / (1 + RF68DI)$$
  

$$PF69\_P = [ - 0.2550 * RRADJ\_F69 - 0.02 * POT\_ET\_TXRT\_69 + 0.11603 * EDSCOREF69 + 0.87528 * MSShare\_F69 - 0.32696 ] / (1 + RF69DI)$$
  

$$PF70\_P = [ 0.09629 * EDSCOREF70 + 0.54302 * MSShare\_F70 - 0.25141 ] / (1 + RF70DI)$$
  

$$PF71\_P = [ 0.11053 * EDSCOREF71 + 0.16137 * MSShare\_F71 - 0.08070 ] / (1 + RF71DI)$$
  

$$PF72\_P = [ 0.09151 * EDSCOREF72 + 0.25854 * MSShare\_F72 - 0.11711 ] / (1 + RF72DI)$$
  

$$PF73\_P = [ 0.08611 * EDSCOREF73 + 0.28099 * MSShare\_F73 - 0.12804 ] / (1 + RF73DI)$$
  

$$PF74\_P = [ 0.11821 * EDSCOREF74 - 0.01277 * MSShare\_F74 - 0.04121 ] / (1 + RF74DI)$$

#### FEMALE, AGES 75 TO 79

$$PF75\_P = PF74(-4) * 0.9$$
  

$$PF76\_P = PF75(-4) * 0.9$$
  

$$PF77\_P = PF76(-4) * 0.9$$
  

$$PF78\_P = PF77(-4) * 0.9$$
  

$$PF79\_P = PF78(-4) * 0.9$$

#### FEMALE AGE 55 TO 79

$$PF55 = PF55\_P$$
  

$$PF56 = PF56\_P$$
  

$$PF57 = PF57\_P$$
  

$$PF58 = PF58\_P$$

PF59 = PF59\_P  
PF60 = PF60\_P  
PF61 = PF61\_P  
PF62 = PF62\_P  
PF63 = PF63\_P  
PF64 = PF64\_P  
PF65 = PF65\_P  
PF66 = PF66\_P  
PF67 = PF67\_P  
PF68 = PF68\_P  
PF69 = PF69\_P  
PF70 = PF70\_P  
PF71 = PF71\_P  
PF72 = PF72\_P  
PF73 = PF73\_P  
PF74 = PF74\_P  
PF75 = PF75\_P  
PF76 = PF76\_P  
PF77 = PF77\_P  
PF78 = PF78\_P  
PF79 = PF79\_P

**FEMALE, AGES 80 AND OVER**

PF80_P = PF79(-4)	* 0.965 ^ 1
PF81_P = PF79(-8)	* 0.965 ^ 2
PF82_P = PF79(-12)	* 0.965 ^ 3
PF83_P = PF79(-16)	* 0.965 ^ 4
PF84_P = PF79(-20)	* 0.965 ^ 5
PF85_P = MOVAVG(8,PF79(-24))	* 0.965 ^ 6
PF86_P = MOVAVG(8,PF79(-28))	* 0.965 ^ 7
PF87_P = MOVAVG(8,PF79(-32))	* 0.965 ^ 8
PF88_P = MOVAVG(8,PF79(-36))	* 0.965 ^ 9
PF89_P = MOVAVG(8,PF79(-40))	* 0.965 ^ 10
PF90_P = MOVAVG(8,PF79(-44))	* 0.965 ^ 11
PF91_P = MOVAVG(8,PF79(-48))	* 0.965 ^ 12
PF92_P = MOVAVG(8,PF79(-52))	* 0.965 ^ 13
PF93_P = MOVAVG(8,PF79(-56))	* 0.965 ^ 14
PF94_P = MOVAVG(8,PF79(-60))	* 0.965 ^ 15
PF95_P = PF94_P * 0.965	
PF96_P = PF95_P * 0.965	

$PF97\_P = PF96\_P * 0.965$   
 $PF98\_P = PF97\_P * 0.965$   
 $PF99\_P = PF98\_P * 0.965$   
 $PF100\_P = PF99\_P * 0.965$

$PF80O\_P = (PF80\_P * NF80 + PF81\_P * NF81 + PF82\_P * NF82 + PF83\_P * NF83 + PF84\_P * NF84 + PF85\_P * NF85 + PF86\_P * NF86 + PF87\_P * NF87 + PF88\_P * NF88 + PF89\_P * NF89 + PF90\_P * NF90 + PF91\_P * NF91 + PF92\_P * NF92 + PF93\_P * NF93 + PF94\_P * NF94 + PF95\_P * NF95 + PF96\_P * NF96 + PF97\_P * NF97 + PF98\_P * NF98 + PF99\_P * NF99 + PF100\_P * NF100) / NF80O$

$PF80O = PF80O\_P$   
 $PF80 = PF80\_P * PF80O / PF80O\_P$   
 $PF81 = PF81\_P * PF80O / PF80O\_P$   
 $PF82 = PF82\_P * PF80O / PF80O\_P$   
 $PF83 = PF83\_P * PF80O / PF80O\_P$   
 $PF84 = PF84\_P * PF80O / PF80O\_P$   
 $PF85 = PF85\_P * PF80O / PF80O\_P$   
 $PF86 = PF86\_P * PF80O / PF80O\_P$   
 $PF87 = PF87\_P * PF80O / PF80O\_P$   
 $PF88 = PF88\_P * PF80O / PF80O\_P$   
 $PF89 = PF89\_P * PF80O / PF80O\_P$   
 $PF90 = PF90\_P * PF80O / PF80O\_P$   
 $PF91 = PF91\_P * PF80O / PF80O\_P$   
 $PF92 = PF92\_P * PF80O / PF80O\_P$   
 $PF93 = PF93\_P * PF80O / PF80O\_P$   
 $PF94 = PF94\_P * PF80O / PF80O\_P$   
 $PF95 = PF95\_P * PF80O / PF80O\_P$   
 $PF96 = PF96\_P * PF80O / PF80O\_P$   
 $PF97 = PF97\_P * PF80O / PF80O\_P$   
 $PF98 = PF98\_P * PF80O / PF80O\_P$   
 $PF99 = PF99\_P * PF80O / PF80O\_P$   
 $PF100 = PF100\_P * PF80O / PF80O\_P$

#### LFPR EQUATIONS, AGE 16 AND OVER

$PM16O\_P = (PM1617\_P * NM1617 +$   
 $PM1819\_P * NM1819 +$   
 $PM2024\_P * NM2024 +$   
 $PM2529\_P * NM2529 +$   
 $PM3034\_P * NM3034 +$   
 $PM3539\_P * NM3539 +$   
 $PM4044\_P * NM4044 +$   
 $PM4549\_P * NM4549 +$   
 $PM5054\_P * NM5054 +$

PM55\_P \* NM55 +  
PM56\_P \* NM56 +  
PM57\_P \* NM57 +  
PM58\_P \* NM58 +  
PM59\_P \* NM59 +  
PM60\_P \* NM60 +  
PM61\_P \* NM61 +  
PM62\_P \* NM62 +  
PM63\_P \* NM63 +  
PM64\_P \* NM64 +  
PM65\_P \* NM65 +  
PM66\_P \* NM66 +  
PM67\_P \* NM67 +  
PM68\_P \* NM68 +  
PM69\_P \* NM69 +  
PM70\_P \* NM70 +  
PM71\_P \* NM71 +  
PM72\_P \* NM72 +  
PM73\_P \* NM73 +  
PM74\_P \* NM74 +  
PM75\_P \* NM75 +  
PM76\_P \* NM76 +  
PM77\_P \* NM77 +  
PM78\_P \* NM78 +  
PM79\_P \* NM79 +  
PM80O\_P \* NM80O ) / NM16O

PF16O\_P= (PF1617\_P \* NF1617 +

PF1819\_P \* NF1819 +  
PF2024\_P \* NF2024 +  
PF2529\_P \* NF2529 +  
PF3034\_P \* NF3034 +  
PF3539\_P \* NF3539 +  
PF4044\_P \* NF4044 +  
PF4549\_P \* NF4549 +  
PF5054\_P \* NF5054 +  
PF55\_P \* NF55 +  
PF56\_P \* NF56 +  
PF57\_P \* NF57 +  
PF58\_P \* NF58 +  
PF59\_P \* NF59 +  
PF60\_P \* NF60 +  
PF61\_P \* NF61 +  
PF62\_P \* NF62 +  
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PF69\_P \* NF69 +  
PF70\_P \* NF70 +  
PF71\_P \* NF71 +  
PF72\_P \* NF72 +  
PF73\_P \* NF73 +  
PF74\_P \* NF74 +  
PF75\_P \* NF75 +  
PF76\_P \* NF76 +  
PF77\_P \* NF77 +  
PF78\_P \* NF78 +  
PF79\_P \* NF79 +  
PF80O\_P \* NF80O ) / NF16O

$$P16O\_P = (PM16O\_P * NM16O + PF16O\_P * NF16O) / (NM16O + NF16O)$$

### **LABOR FORCE, AGE 16 AND OVER**

$$LCM\_P = PM16O\_P * NM16O$$

$$LCF\_P = PF16O\_P * NF16O$$

$$LC\_P = LCM\_P + LCF\_P$$

### **LABOR FORCE PARTICIPATION RATES, FULL EMPLOYMENT**

#### **MALE**

$$\begin{aligned} DPM1617\_FE = & (-0.00134*RM1617\_FE - 0.00167*RM1617\_FE(-1) - 0.00132*RM1617\_FE(-2) \\ & - 0.00065*RM1617\_FE(-3) + 0.00003*RM1617\_FE(-4) + 0.00035*RM1617\_FE(-5)) - \\ & (-0.00134*RM1617 - 0.00167*RM1617(-1) - 0.00132*RM1617(-2) - 0.00065*RM1617(-3) \\ & + 0.00003*RM1617(-4) + 0.00035*RM1617(-5)) \end{aligned}$$

$$\begin{aligned} DPM1819\_FE = & (-0.00068*RM1819\_FE - 0.00092*RM1819\_FE(-1) - 0.00083*RM1819\_FE(-2) \\ & - 0.00056*RM1819\_FE(-3) - 0.00025*RM1819\_FE(-4) - 0.00002*RM1819\_FE(-5)) - \\ & (-0.00068*RM1819 - 0.00092*RM1819(-1) - 0.00083*RM1819(-2) - 0.00056*RM1819(-3) \\ & - 0.00025*RM1819(-4) - 0.00002*RM1819(-5)) \end{aligned}$$

$$\begin{aligned} DPM2024\_FE = & (-0.00053*RM2024\_FE - 0.00074*RM2024\_FE(-1) - 0.00071*RM2024\_FE(-2) \\ & - 0.00054*RM2024\_FE(-3) - 0.00030*RM2024\_FE(-4) - 0.00010*RM2024\_FE(-5)) - \\ & (-0.00053*RM2024 - 0.00074*RM2024(-1) - 0.00071*RM2024(-2) - 0.00054*RM2024(-3) \\ & - 0.00030*RM2024(-4) - 0.00010*RM2024(-5)) \end{aligned}$$

$$\begin{aligned} DPM2529\_FE = & (-0.00031*RM2529\_FE - 0.00053*RM2529\_FE(-1) - 0.00066*RM2529\_FE(-2) \\ & - 0.00068*RM2529\_FE(-3) - 0.00058*RM2529\_FE(-4) - 0.00036*RM2529\_FE(-5)) - \\ & (-0.00031*RM2529 - 0.00053*RM2529(-1) - 0.00066*RM2529(-2) - 0.00068*RM2529(-3) \\ & - 0.00058*RM2529(-4) - 0.00036*RM2529(-5)) \end{aligned}$$

$$\begin{aligned} DPM3034\_FE = & (-0.00001*RM3034\_FE - 0.00018*RM3034\_FE(-1) - 0.00040*RM3034\_FE(-2) \\ & - 0.00058*RM3034\_FE(-3) - 0.00064*RM3034\_FE(-4) - 0.00047*RM3034\_FE(-5)) - \\ & (-0.00001*RM3034 - 0.00018*RM3034(-1) - 0.00040*RM3034(-2) - 0.00058*RM3034(-3) \\ & - 0.00064*RM3034(-4) - 0.00047*RM3034(-5)) \end{aligned}$$

$$\begin{aligned} DPM3539\_FE = & (0.00048*RM3539\_FE + 0.00037*RM3539\_FE(-1) - 0.00007*RM3539\_FE(-2) \\ & - 0.00058*RM3539\_FE(-3) - 0.00091*RM3539\_FE(-4) - 0.00080*RM3539\_FE(-5)) - \\ & (0.00048*RM3539 + 0.00037*RM3539(-1) - 0.00007*RM3539(-2) - 0.00058*RM3539(-3) \\ & - 0.00091*RM3539(-4) - 0.00080*RM3539(-5)) \end{aligned}$$

$$\begin{aligned} DPM4044\_FE = & (-0.00018*RM4044\_FE - 0.00026*RM4044\_FE(-1) - 0.00027*RM4044\_FE(-2) \\ & - 0.00022*RM4044\_FE(-3) - 0.00014*RM4044\_FE(-4) - 0.00006*RM4044\_FE(-5)) - \\ & (-0.00018*RM4044 - 0.00026*RM4044(-1) - 0.00027*RM4044(-2) - 0.00022*RM4044(-3) \\ & - 0.00014*RM4044(-4) - 0.00006*RM4044(-5)) \end{aligned}$$

$$\begin{aligned} DPM4549\_FE = & (0.00004*RM4549\_FE - 0.00011*RM4549\_FE(-1) - 0.00036*RM4549\_FE(-2) \\ & - 0.00059*RM4549\_FE(-3) - 0.00068*RM4549\_FE(-4) - 0.00052*RM4549\_FE(-5)) - \\ & (0.00004*RM4549 - 0.00011*RM4549(-1) - 0.00036*RM4549(-2) - 0.00059*RM4549(-3) \\ & - 0.00068*RM4549(-4) - 0.00052*RM4549(-5)) \end{aligned}$$

$$\begin{aligned} DPM5054\_FE = & (0.00115*RM5054\_FE + 0.00089*RM5054\_FE(-1) - 0.00017*RM5054\_FE(-2) \\ & - 0.00141*RM5054\_FE(-3) - 0.00220*RM5054\_FE(-4) - 0.00194*RM5054\_FE(-5)) - \\ & (0.00115*RM5054 + 0.00089*RM5054(-1) - 0.00017*RM5054(-2) - 0.00141*RM5054(-3) \\ & - 0.00220*RM5054(-4) - 0.00194*RM5054(-5)) \end{aligned}$$

#### **FEMALE**

$$\begin{aligned} DPF1617\_FE = & (-0.00214*RF1617\_FE - 0.00256*RF1617\_FE(-1) - 0.00184*RF1617\_FE(-2) \\ & - 0.00062*RF1617\_FE(-3) + 0.00050*RF1617\_FE(-4) + 0.00091*RF1617\_FE(-5)) - \end{aligned}$$

$$\begin{aligned}
& (-0.00214 \cdot RF1617 - 0.00256 \cdot RF1617(-1) - 0.00184 \cdot RF1617(-2) - 0.00062 \cdot RF1617(-3) \\
& + 0.00050 \cdot RF1617(-4) + 0.00091 \cdot RF1617(-5)) \\
DPF1819\_FE = & (-0.00118 \cdot RF1819\_FE - 0.00145 \cdot RF1819\_FE(-1) - 0.00112 \cdot RF1819\_FE(-2) \\
& - 0.00050 \cdot RF1819\_FE(-3) + 0.00010 \cdot RF1819\_FE(-4) + 0.00037 \cdot RF1819\_FE(-5)) - \\
& (-0.00118 \cdot RF1819 - 0.00145 \cdot RF1819(-1) - 0.00112 \cdot RF1819(-2) - 0.00050 \cdot RF1819(-3) \\
& + 0.00010 \cdot RF1819(-4) + 0.00037 \cdot RF1819(-5)) \\
DPF2024\_FE = & (-0.00006 \cdot RF2024\_FE - 0.00026 \cdot RF2024\_FE(-1) - 0.00050 \cdot RF2024\_FE(-2) \\
& - 0.00070 \cdot RF2024\_FE(-3) - 0.00075 \cdot RF2024\_FE(-4) - 0.00055 \cdot RF2024\_FE(-5)) - \\
& (-0.00006 \cdot RF2024 - 0.00026 \cdot RF2024(-1) - 0.00050 \cdot RF2024(-2) - 0.00070 \cdot RF2024(-3) \\
& - 0.00075 \cdot RF2024(-4) - 0.00055 \cdot RF2024(-5)) \\
DPF2529\_FE = & (0.00056 \cdot RF2529\_FE + 0.00034 \cdot RF2529\_FE(-1) - 0.00030 \cdot RF2529\_FE(-2) \\
& - 0.00101 \cdot RF2529\_FE(-3) - 0.00143 \cdot RF2529\_FE(-4) - 0.00121 \cdot RF2529\_FE(-5)) - \\
& (0.00056 \cdot RF2529 + 0.00034 \cdot RF2529(-1) - 0.00030 \cdot RF2529(-2) - 0.00101 \cdot RF2529(-3) \\
& - 0.00143 \cdot RF2529(-4) - 0.00121 \cdot RF2529(-5)) \\
DPF3034\_FE = & (0.00078 \cdot RF3034\_FE + 0.00075 \cdot RF3034\_FE(-1) + 0.00024 \cdot RF3034\_FE(-2) \\
& - 0.00042 \cdot RF3034\_FE(-3) - 0.00090 \cdot RF3034\_FE(-4) - 0.00087 \cdot RF3034\_FE(-5)) - \\
& (0.00078 \cdot RF3034 + 0.00075 \cdot RF3034(-1) + 0.00024 \cdot RF3034(-2) - 0.00042 \cdot RF3034(-3) \\
& - 0.00090 \cdot RF3034(-4) - 0.00087 \cdot RF3034(-5)) \\
DPF3539\_FE = & (0.00040 \cdot RF3539\_FE + 0.00032 \cdot RF3539\_FE(-1) - 0.00004 \cdot RF3539\_FE(-2) \\
& - 0.00046 \cdot RF3539\_FE(-3) - 0.00074 \cdot RF3539\_FE(-4) - 0.00066 \cdot RF3539\_FE(-5)) - \\
& (0.00040 \cdot RF3539 + 0.00032 \cdot RF3539(-1) - 0.00004 \cdot RF3539(-2) - 0.00046 \cdot RF3539(-3) \\
& - 0.00074 \cdot RF3539(-4) - 0.00066 \cdot RF3539(-5)) \\
DPF4044\_FE = & (0.00113 \cdot RF4044\_FE + 0.00097 \cdot RF4044\_FE(-1) + 0.00007 \cdot RF4044\_FE(-2) \\
& - 0.00102 \cdot RF4044\_FE(-3) - 0.00176 \cdot RF4044\_FE(-4) - 0.00160 \cdot RF4044\_FE(-5)) - \\
& (0.00113 \cdot RF4044 + 0.00097 \cdot RF4044(-1) + 0.00007 \cdot RF4044(-2) - 0.00102 \cdot RF4044(-3) \\
& - 0.00176 \cdot RF4044(-4) - 0.00160 \cdot RF4044(-5)) \\
DPF4549\_FE = & (0.00155 \cdot RF4549\_FE + 0.00133 \cdot RF4549\_FE(-1) + 0.00007 \cdot RF4549\_FE(-2) \\
& - 0.00145 \cdot RF4549\_FE(-3) - 0.00247 \cdot RF4549\_FE(-4) - 0.00224 \cdot RF4549\_FE(-5)) - \\
& (0.00155 \cdot RF4549 + 0.00133 \cdot RF4549(-1) + 0.00007 \cdot RF4549(-2) - 0.00145 \cdot RF4549(-3) \\
& - 0.00247 \cdot RF4549(-4) - 0.00224 \cdot RF4549(-5)) \\
DPF5054\_FE = & (0.00093 \cdot RF5054\_FE + 0.00074 \cdot RF5054\_FE(-1) - 0.00008 \cdot RF5054\_FE(-2) \\
& - 0.00104 \cdot RF5054\_FE(-3) - 0.00168 \cdot RF5054\_FE(-4) - 0.00149 \cdot RF5054\_FE(-5)) - \\
& (0.00093 \cdot RF5054 + 0.00074 \cdot RF5054(-1) - 0.00008 \cdot RF5054(-2) - 0.00104 \cdot RF5054(-3) \\
& - 0.00168 \cdot RF5054(-4) - 0.00149 \cdot RF5054(-5))
\end{aligned}$$