

Index sets

$$\begin{aligned} HH &= \{1, 2\} \\ SEC &= \{A, B, C\} \end{aligned}$$

1 HOUSEHOLD $h \in HH$

1.1 Optimisation problem

$$\max_{(D^{\langle h, s \rangle})_{s \in SEC}} U^{\langle h \rangle} = \left(\sum_{s \in SEC} \alpha^{\langle h, s \rangle} D^{\langle h, s \rangle \omega^{-1}(-1+\omega)} \right)^{\omega(-1+\omega)^{-1}} \quad (1.1)$$

s.t. :

$$\sum_{s \in SEC} p^{\langle s \rangle} D^{\langle h, s \rangle} = L^{\langle h \rangle} + p^k K^{\langle h \rangle} + \sum_{s \in SEC} \pi^{\langle s \rangle} \left(\delta^{\langle 1, h \rangle} \left(1 - \sum_{h2 \in HH \setminus \{1\}} \phi^{\langle h2 \rangle} \right) + \phi^{\langle h \rangle} (1 - \delta^{\langle 1, h \rangle}) \right) \quad \left(\lambda^{\text{HOUSEHOLD}^1 \langle h \rangle} \right) \quad (1.2)$$

1.2 Identities

$$hi \in HH: \quad K_t^{\langle hi \rangle} = \overline{p}^k \overline{r}^{\langle hi \rangle} \quad (1.3)$$

$$hi \in HH: \quad L_t^{\langle hi \rangle} = \overline{p}^1 \overline{r}^{\langle hi \rangle} \quad (1.4)$$

1.3 First order conditions

$$s \in SEC: \quad -\lambda^{\text{HOUSEHOLD}^1 \langle h \rangle} p_t^{\langle s \rangle} + \alpha^{\langle h, s \rangle} D_t^{\langle h, s \rangle \omega^{-1}(-1+\omega)} \left(\sum_{s \in SEC} \alpha^{\langle h, s \rangle} D_t^{\langle h, s \rangle \omega^{-1}(-1+\omega)} \right)^{-1+\omega(-1+\omega)^{-1}} = 0 \quad \left(D_t^{\langle h, s \rangle} \right) \quad (1.5)$$

2 FIRM $s \in SEC$

2.1 Optimisation problem

$$\max_{Y^{(s)}, K^{(s)}, L^{(s)}, (X^{(s, \mathfrak{s}i)})_{\mathfrak{s}i \in SEC}} \pi^{(s)} = -L^{(s)} - p^k K^{(s)} + p^{(s)} Y^{(s)} - \sum_{\mathfrak{s}i \in SEC} p^{(s, \mathfrak{s}i)} X^{(s, \mathfrak{s}i)} \quad (2.1)$$

s.t. :

$$Y^{(s)} = \gamma^{(s)} K^{(s) \beta^k(s)} L^{(s) \beta^l(s)} \left(\prod_{\mathfrak{s}i \in SEC} X^{(s, \mathfrak{s}i) \beta^x(s, \mathfrak{s}i)} \right) \left(\lambda^{\text{FIRM}^1(s)} \right) \quad (2.2)$$

2.2 First order conditions

$$-\lambda^{\text{FIRM}^1(s)} + p^{(s)} = 0 \quad \left(Y^{(s)} \right) \quad (2.3)$$

$$-p^k + \beta^k(s) \gamma^{(s)} \lambda^{\text{FIRM}^1(s)} K^{(s) -1 + \beta^k(s)} L^{(s) \beta^l(s)} \left(\prod_{\mathfrak{s}i \in SEC} X^{(s, \mathfrak{s}i) \beta^x(s, \mathfrak{s}i)} \right) = 0 \quad \left(K^{(s)} \right) \quad (2.4)$$

$$-1 + \beta^l(s) \gamma^{(s)} \lambda^{\text{FIRM}^1(s)} K^{(s) \beta^k(s)} L^{(s) -1 + \beta^l(s)} \left(\prod_{\mathfrak{s}i \in SEC} X^{(s, \mathfrak{s}i) \beta^x(s, \mathfrak{s}i)} \right) = 0 \quad \left(L^{(s)} \right) \quad (2.5)$$

$$\mathfrak{s}i \in SEC: \quad -p_t^{(s, \mathfrak{s}i)} + \beta^x(s, \mathfrak{s}i) \gamma^{(s)} \lambda^{\text{FIRM}^1(s)} X_t^{(s, \mathfrak{s}i) -1} K_t^{(s) \beta^k(s)} L_t^{(s) \beta^l(s)} \left(\prod_{\mathfrak{s}i' \in SEC} X_t^{(s, \mathfrak{s}i') \beta^x(s, \mathfrak{s}i')} \right) = 0 \quad \left(X_t^{(s, \mathfrak{s}i)} \right) \quad (2.6)$$

2.3 First order conditions after reduction

$$-p^k + \beta^k(s) \gamma^{(s)} p^{(s)} K^{(s) -1 + \beta^k(s)} L^{(s) \beta^l(s)} \left(\prod_{\mathfrak{s}i \in SEC} X^{(s, \mathfrak{s}i) \beta^x(s, \mathfrak{s}i)} \right) = 0 \quad \left(K^{(s)} \right) \quad (2.7)$$

$$-1 + \beta^l(s) \gamma^{(s)} p^{(s)} K^{(s) \beta^k(s)} L^{(s) -1 + \beta^l(s)} \left(\prod_{\mathfrak{s}i \in SEC} X^{(s, \mathfrak{s}i) \beta^x(s, \mathfrak{s}i)} \right) = 0 \quad \left(L^{(s)} \right) \quad (2.8)$$

$$\mathfrak{s}i \in SEC: \quad -p_t^{(s, \mathfrak{s}i)} + \beta^x(s, \mathfrak{s}i) \gamma^{(s)} p_t^{(s)} X_t^{(s, \mathfrak{s}i) -1} K_t^{(s) \beta^k(s)} L_t^{(s) \beta^l(s)} \left(\prod_{\mathfrak{s}i' \in SEC} X_t^{(s, \mathfrak{s}i') \beta^x(s, \mathfrak{s}i')} \right) = 0 \quad \left(\left(X^{(s, \mathfrak{s}i)} \right)_{\mathfrak{s}i \in SEC} \right) \quad (2.9)$$

3 EQUILIBRIUM

3.1 Identities

$$s \in SEC: \quad Y_t^{\langle s \rangle} = \sum_{h \in HH} D_t^{\langle h, s \rangle} + \sum_{si \in SEC} X_t^{\langle si, s \rangle} \quad (3.1)$$

$$\sum_{h \in HH} L^{\langle h \rangle} = \sum_{s \in SEC} L^{\langle s \rangle} \quad (3.2)$$

4 Equilibrium relationships (before expansion and reduction)

$$\sum_{h \in HH} L^{\langle h \rangle} - \sum_{s \in SEC} L^{\langle s \rangle} = 0 \quad (4.1)$$

$$hi \in HH: \quad -pw^k \langle hi \rangle + K^{\langle hi \rangle} = 0 \quad (4.2)$$

$$hi \in HH: \quad -pw^1 \langle hi \rangle + L^{\langle hi \rangle} = 0 \quad (4.3)$$

$$h \in HH: \quad U^{\langle h \rangle} - \left(\sum_{s \in SEC} \alpha^{\langle h, s \rangle} D^{\langle h, s \rangle \omega^{-1}(-1+\omega)} \right)^{\omega(-1+\omega)^{-1}} = 0 \quad (4.4)$$

$$h \in HH: \quad L^{\langle h \rangle} + p^k K^{\langle h \rangle} - \sum_{s \in SEC} p^{\langle s \rangle} D^{\langle h, s \rangle} + \sum_{s \in SEC} \pi^{\langle s \rangle} \left(\delta^{\langle 1, h \rangle} \left(1 - \sum_{h2 \in HH \setminus \{1\}} \phi^{\langle h2 \rangle} \right) + \phi^{\langle h \rangle} (1 - \delta^{\langle 1, h \rangle}) \right) = 0 \quad (4.5)$$

$$h \in HH: \quad s \in SEC: \quad -\lambda^{\text{HOUSEHOLD}^1 \langle h \rangle} p^{\langle s \rangle} + \alpha^{\langle h, s \rangle} D^{\langle h, s \rangle -1+\omega^{-1}(-1+\omega)} \left(\sum_{s \in SEC} \alpha^{\langle h, s \rangle} D^{\langle h, s \rangle \omega^{-1}(-1+\omega)} \right)^{-1+\omega(-1+\omega)^{-1}} = 0 \quad (4.6)$$

$$s \in SEC: \quad -1 + \beta^{1 \langle s \rangle} \gamma^{\langle s \rangle} p^{\langle s \rangle} K^{\langle s \rangle \beta^{k \langle s \rangle}} L^{\langle s \rangle -1+\beta^{1 \langle s \rangle}} \left(\prod_{si \in SEC} X^{\langle s, si \rangle \beta^{x \langle s, si \rangle}} \right) = 0 \quad (4.7)$$

$$s \in SEC: \quad -p^k + \beta^{k \langle s \rangle} \gamma^{\langle s \rangle} p^{\langle s \rangle} K^{\langle s \rangle -1+\beta^{k \langle s \rangle}} L^{\langle s \rangle \beta^{1 \langle s \rangle}} \left(\prod_{si \in SEC} X^{\langle s, si \rangle \beta^{x \langle s, si \rangle}} \right) = 0 \quad (4.8)$$

$$s \in SEC: \quad -Y^{\langle s \rangle} + \gamma^{\langle s \rangle} K^{\langle s \rangle \beta^{k \langle s \rangle}} L^{\langle s \rangle \beta^{1 \langle s \rangle}} \left(\prod_{si \in SEC} X^{\langle s, si \rangle \beta^{x \langle s, si \rangle}} \right) = 0 \quad (4.9)$$

$$s \in SEC: \quad Y^{\langle s \rangle} - \sum_{h \in HH} D^{\langle h, s \rangle} - \sum_{si \in SEC} X^{\langle si, s \rangle} = 0 \quad (4.10)$$

$$s \in SEC: \quad \pi^{(s)} + L^{(s)} + p^k K^{(s)} - p^{(s)} Y^{(s)} + \sum_{\mathbf{s} \in SEC} p^{(\mathbf{s})} X^{(s, \mathbf{s})} = 0 \quad (4.11)$$

$$s \in SEC: \quad \mathbf{s} \in SEC: \quad -p^{(\mathbf{s})} + \beta^{x(s, \mathbf{s})} \gamma^{(s)} p^{(s)} X^{(s, \mathbf{s})-1} K^{(s) \beta^{k(s)}} L^{(s) \beta^{l(s)}} \left(\prod_{\mathbf{s}' \in SEC} X^{(s, \mathbf{s}') \beta^{x(s, \mathbf{s}')}} \right) = 0 \quad (4.12)$$

5 Equilibrium relationships (after expansion and reduction)

$$-1 + \beta^{l(A)} \gamma^{(A)} p^{(A)} K^{(A) \beta^{k(A)}} L^{(A)-1+\beta^{l(A)}} X^{(A,A) \beta^{x(A,A)}} X^{(A,B) \beta^{x(A,B)}} X^{(A,C) \beta^{x(A,C)}} = 0 \quad (5.1)$$

$$-1 + \beta^{l(B)} \gamma^{(B)} p^{(B)} K^{(B) \beta^{k(B)}} L^{(B)-1+\beta^{l(B)}} X^{(B,A) \beta^{x(B,A)}} X^{(B,B) \beta^{x(B,B)}} X^{(B,C) \beta^{x(B,C)}} = 0 \quad (5.2)$$

$$-1 + \beta^{l(C)} \gamma^{(C)} p^{(C)} K^{(C) \beta^{k(C)}} L^{(C)-1+\beta^{l(C)}} X^{(C,A) \beta^{x(C,A)}} X^{(C,B) \beta^{x(C,B)}} X^{(C,C) \beta^{x(C,C)}} = 0 \quad (5.3)$$

$$-p^{k(1)} + K^{(1)} = 0 \quad (5.4)$$

$$-p^{k(2)} + K^{(2)} = 0 \quad (5.5)$$

$$-p^{l(1)} + L^{(1)} = 0 \quad (5.6)$$

$$-p^{l(2)} + L^{(2)} = 0 \quad (5.7)$$

$$-p^k + \beta^{k(A)} \gamma^{(A)} p^{(A)} K^{(A)-1+\beta^{k(A)}} L^{(A) \beta^{l(A)}} X^{(A,A) \beta^{x(A,A)}} X^{(A,B) \beta^{x(A,B)}} X^{(A,C) \beta^{x(A,C)}} = 0 \quad (5.8)$$

$$-p^k + \beta^{k(B)} \gamma^{(B)} p^{(B)} K^{(B)-1+\beta^{k(B)}} L^{(B) \beta^{l(B)}} X^{(B,A) \beta^{x(B,A)}} X^{(B,B) \beta^{x(B,B)}} X^{(B,C) \beta^{x(B,C)}} = 0 \quad (5.9)$$

$$-p^k + \beta^{k(C)} \gamma^{(C)} p^{(C)} K^{(C)-1+\beta^{k(C)}} L^{(C) \beta^{l(C)}} X^{(C,A) \beta^{x(C,A)}} X^{(C,B) \beta^{x(C,B)}} X^{(C,C) \beta^{x(C,C)}} = 0 \quad (5.10)$$

$$-p^{(A)} + \beta^{x(A,A)} \gamma^{(A)} p^{(A)} X^{(A,A)-1} K^{(A) \beta^{k(A)}} L^{(A) \beta^{l(A)}} X^{(A,A) \beta^{x(A,A)}} X^{(A,B) \beta^{x(A,B)}} X^{(A,C) \beta^{x(A,C)}} = 0 \quad (5.11)$$

$$-p^{(A)} + \beta^{x(B,A)} \gamma^{(B)} p^{(B)} X^{(B,A)-1} K^{(B) \beta^{k(B)}} L^{(B) \beta^{l(B)}} X^{(B,A) \beta^{x(B,A)}} X^{(B,B) \beta^{x(B,B)}} X^{(B,C) \beta^{x(B,C)}} = 0 \quad (5.12)$$

$$-p^{(A)} + \beta^{x(C,A)} \gamma^{(C)} p^{(C)} X^{(C,A)-1} K^{(C) \beta^{k(C)}} L^{(C) \beta^{l(C)}} X^{(C,A) \beta^{x(C,A)}} X^{(C,B) \beta^{x(C,B)}} X^{(C,C) \beta^{x(C,C)}} = 0 \quad (5.13)$$

$$-p^{(B)} + \beta^{x(A,B)} \gamma^{(A)} p^{(A)} X^{(A,B)-1} K^{(A) \beta^{k(A)}} L^{(A) \beta^{l(A)}} X^{(A,A) \beta^{x(A,A)}} X^{(A,B) \beta^{x(A,B)}} X^{(A,C) \beta^{x(A,C)}} = 0 \quad (5.14)$$

$$-p^{(B)} + \beta^{x(B,B)} \gamma^{(B)} p^{(B)} X^{(B,B)-1} K^{(B) \beta^{k(B)}} L^{(B) \beta^{l(B)}} X^{(B,A) \beta^{x(B,A)}} X^{(B,B) \beta^{x(B,B)}} X^{(B,C) \beta^{x(B,C)}} = 0 \quad (5.15)$$

$$-p^{(B)} + \beta^{x(C,B)} \gamma^{(C)} p^{(C)} X^{(C,B)-1} K^{(C) \beta^{k(C)}} L^{(C) \beta^{l(C)}} X^{(C,A) \beta^{x(C,A)}} X^{(C,B) \beta^{x(C,B)}} X^{(C,C) \beta^{x(C,C)}} = 0 \quad (5.16)$$

$$-p^{(C)} + \beta^{x(A,C)} \gamma^{(A)} p^{(A)} X^{(A,C)-1} K^{(A)} \beta^{k(A)} L^{(A)} \beta^{l(A)} X^{(A,A)} \beta^{x(A,A)} X^{(A,B)} \beta^{x(A,B)} X^{(A,C)} \beta^{x(A,C)} = 0 \quad (5.17)$$

$$-p^{(C)} + \beta^{x(B,C)} \gamma^{(B)} p^{(B)} X^{(B,C)-1} K^{(B)} \beta^{k(B)} L^{(B)} \beta^{l(B)} X^{(B,A)} \beta^{x(B,A)} X^{(B,B)} \beta^{x(B,B)} X^{(B,C)} \beta^{x(B,C)} = 0 \quad (5.18)$$

$$-p^{(C)} + \beta^{x(C,C)} \gamma^{(C)} p^{(C)} X^{(C,C)-1} K^{(C)\beta^{k(C)}} L^{(C)\beta^{l(C)}} X^{(C,A)\beta^{x(C,A)}} X^{(C,B)\beta^{x(C,B)}} X^{(C,C)\beta^{x(C,C)}} = 0 \quad (5.19)$$

$$U^{\langle 1 \rangle} - \left(\alpha^{\langle 1, A \rangle} D^{\langle 1, A \rangle \omega^{-1}(-1+\omega)} + \alpha^{\langle 1, B \rangle} D^{\langle 1, B \rangle \omega^{-1}(-1+\omega)} + \alpha^{\langle 1, C \rangle} D^{\langle 1, C \rangle \omega^{-1}(-1+\omega)} \right)^{\omega(-1+\omega)^{-1}} = 0 \quad (5.20)$$

$$U^{\langle 2 \rangle} - \left(\alpha^{\langle 2, A \rangle} D^{\langle 2, A \rangle \omega^{-1}(-1+\omega)} + \alpha^{\langle 2, B \rangle} D^{\langle 2, B \rangle \omega^{-1}(-1+\omega)} + \alpha^{\langle 2, C \rangle} D^{\langle 2, C \rangle \omega^{-1}(-1+\omega)} \right)^{\omega(-1+\omega)^{-1}} = 0 \quad (5.21)$$

$$-Y^{\langle A \rangle} + \gamma^{\langle A \rangle} K^{\langle A \rangle} \beta^{k \langle A \rangle} L^{\langle A \rangle} \beta^{l \langle A \rangle} X^{\langle A, A \rangle} \beta^{x \langle A, A \rangle} X^{\langle A, B \rangle} \beta^{x \langle A, B \rangle} X^{\langle A, C \rangle} \beta^{x \langle A, C \rangle} = 0 \quad (5.22)$$

$$-Y^{(B)} + \gamma^{(B)} K^{(B)} \beta^{k(B)} L^{(B)} \beta^{l(B)} X^{(B,A)} \beta^{x(B,A)} X^{(B,B)} \beta^{x(B,B)} X^{(B,C)} \beta^{x(B,C)} = 0 \quad (5.23)$$

$$-Y^{(C)} + \gamma^{(C)} K^{(C)} \beta^{k(C)} L^{(C)} \beta^{l(C)} X^{(C,A)} \beta^{x(C,A)} X^{(C,B)} \beta^{x(C,B)} X^{(C,C)} \beta^{x(C,C)} = 0 \quad (5.24)$$

$$-\lambda^{\text{HOUSEHOLD}^1 \langle 1 \rangle} p^{\langle A \rangle} + \alpha^{\langle 1, A \rangle} D^{\langle 1, A \rangle - 1 + \omega^{-1}(-1 + \omega)} \left(\alpha^{\langle 1, A \rangle} D^{\langle 1, A \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 1, B \rangle} D^{\langle 1, B \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 1, C \rangle} D^{\langle 1, C \rangle \omega^{-1}(-1 + \omega)} \right)^{-1 + \omega(-1 + \omega)^{-1}} = 0 \quad (5.25)$$

$$-\lambda^{\text{HOUSEHOLD}^1 \langle 1 \rangle} p^{\langle B \rangle} + \alpha^{\langle 1, B \rangle} D^{\langle 1, B \rangle - 1 + \omega^{-1}(-1 + \omega)} \left(\alpha^{\langle 1, A \rangle} D^{\langle 1, A \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 1, B \rangle} D^{\langle 1, B \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 1, C \rangle} D^{\langle 1, C \rangle \omega^{-1}(-1 + \omega)} \right)^{-1 + \omega(-1 + \omega)^{-1}} = 0 \quad (5.26)$$

$$-\lambda^{\text{HOUSEHOLD}^1 \langle 1 \rangle} p^{\langle C \rangle} + \alpha^{\langle 1, C \rangle} D^{\langle 1, C \rangle - 1 + \omega^{-1}(-1 + \omega)} \left(\alpha^{\langle 1, A \rangle} D^{\langle 1, A \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 1, B \rangle} D^{\langle 1, B \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 1, C \rangle} D^{\langle 1, C \rangle \omega^{-1}(-1 + \omega)} \right)^{-1 + \omega(-1 + \omega)^{-1}} = 0 \quad (5.27)$$

$$-\lambda^{\text{HOUSEHOLD}^1(2)} p^{(A)} + \alpha^{(2,A)} D^{(2,A)-1+\omega^{-1}(-1+\omega)} \left(\alpha^{(2,A)} D^{(2,A)\omega^{-1}(-1+\omega)} + \alpha^{(2,B)} D^{(2,B)\omega^{-1}(-1+\omega)} + \alpha^{(2,C)} D^{(2,C)\omega^{-1}(-1+\omega)} \right)^{-1+\omega(-1+\omega)^{-1}} = 0 \quad (5.28)$$

$$-\lambda^{\text{HOUSEHOLD}^1 \langle 2 \rangle} p^{\langle B \rangle} + \alpha^{\langle 2, B \rangle} D^{\langle 2, B \rangle - 1 + \omega^{-1}(-1 + \omega)} \left(\alpha^{\langle 2, A \rangle} D^{\langle 2, A \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 2, B \rangle} D^{\langle 2, B \rangle \omega^{-1}(-1 + \omega)} + \alpha^{\langle 2, C \rangle} D^{\langle 2, C \rangle \omega^{-1}(-1 + \omega)} \right)^{-1 + \omega(-1 + \omega)^{-1}} = 0 \quad (5.29)$$

$$-\lambda^{\text{HOUSEHOLD}^{1(2)}} p^{(C)} + \alpha^{(2,C)} D^{(2,C)-1+\omega^{-1}(-1+\omega)} \left(\alpha^{(2,A)} D^{(2,A)\omega^{-1}(-1+\omega)} + \alpha^{(2,B)} D^{(2,B)\omega^{-1}(-1+\omega)} + \alpha^{(2,C)} D^{(2,C)\omega^{-1}(-1+\omega)} \right)^{-1+\omega(-1+\omega)^{-1}} = 0 \quad (5.30)$$

$$L^{\langle 1 \rangle} + L^{\langle 2 \rangle} - L^{\langle A \rangle} - L^{\langle B \rangle} - L^{\langle C \rangle} = 0 \quad (5.31)$$

$$-D^{\langle 1, A \rangle} - D^{\langle 2, A \rangle} - X^{\langle A, A \rangle} - X^{\langle B, A \rangle} - X^{\langle C, A \rangle} + Y^{\langle A \rangle} = 0 \quad (5.32)$$

$$-D^{\langle 1, B \rangle} - D^{\langle 2, B \rangle} - X^{\langle A, B \rangle} - X^{\langle B, B \rangle} - X^{\langle C, B \rangle} + Y^{\langle B \rangle} = 0 \quad (5.33)$$

$$-D^{\langle 1,C \rangle} - D^{\langle 2,C \rangle} - X^{\langle A,C \rangle} - X^{\langle B,C \rangle} - X^{\langle C,C \rangle} + Y^{\langle C \rangle} = 0 \quad (5.34)$$

$$\pi^{\langle A \rangle} + L^{\langle A \rangle} + p^k K^{\langle A \rangle} + p^{\langle A \rangle} X^{\langle A, A \rangle} - p^{\langle A \rangle} Y^{\langle A \rangle} + p^{\langle B \rangle} X^{\langle A, B \rangle} + p^{\langle C \rangle} X^{\langle A, C \rangle} = 0 \quad (5.35)$$

$$\pi^{\langle B \rangle} + L^{\langle B \rangle} + p^k K^{\langle B \rangle} + p^{\langle A \rangle} X^{\langle B, A \rangle} + p^{\langle B \rangle} X^{\langle B, B \rangle} - p^{\langle B \rangle} Y^{\langle B \rangle} + p^{\langle C \rangle} X^{\langle B, C \rangle} = 0 \quad (5.36)$$

$$\pi^{\langle C \rangle} + L^{\langle C \rangle} + p^k K^{\langle C \rangle} + p^{\langle A \rangle} X^{\langle C, A \rangle} + p^{\langle B \rangle} X^{\langle C, B \rangle} + p^{\langle C \rangle} X^{\langle C, C \rangle} - p^{\langle C \rangle} Y^{\langle C \rangle} = 0 \quad (5.37)$$

$$L^{\langle 1 \rangle} + p^k K^{\langle 1 \rangle} - p^{\langle A \rangle} D^{\langle 1, A \rangle} - p^{\langle B \rangle} D^{\langle 1, B \rangle} - p^{\langle C \rangle} D^{\langle 1, C \rangle} + \pi^{\langle A \rangle} \left(1 - \phi^{\langle 2 \rangle}\right) + \pi^{\langle B \rangle} \left(1 - \phi^{\langle 2 \rangle}\right) + \pi^{\langle C \rangle} \left(1 - \phi^{\langle 2 \rangle}\right) = 0 \quad (5.38)$$

$$L^{\langle 2 \rangle} + \phi^{\langle 2 \rangle} \pi^{\langle A \rangle} + \phi^{\langle 2 \rangle} \pi^{\langle B \rangle} + \phi^{\langle 2 \rangle} \pi^{\langle C \rangle} + p^k K^{\langle 2 \rangle} - p^{\langle A \rangle} D^{\langle 2, A \rangle} - p^{\langle B \rangle} D^{\langle 2, B \rangle} - p^{\langle C \rangle} D^{\langle 2, C \rangle} = 0 \quad (5.39)$$

6 Equilibrium values

	Equilibrium values
p^k	1.0008
$\lambda^{\text{HOUSEHOLD}^{1^1}}$	0.2524
$\lambda^{\text{HOUSEHOLD}^{1^2}}$	0.2524
p^A	0.992
p^B	0.9931
p^C	0.9908
π^A	-0.0699
π^B	-0.06
π^C	-0.07
D^{1^A}	11.2953
D^{1^B}	3.7712
D^{1^C}	15.155
D^{2^A}	18.7964
D^{2^B}	6.2757
D^{2^C}	25.2192
K^1	20
K^2	20
K^A	19.9764
K^B	10.0161
K^C	10.0075
L^1	10
L^2	30
L^A	9.9962
L^B	19.9883
L^C	10.0155
U^1	7.5639
U^2	12.5869
X^{A^A}	10.0764
X^{A^B}	20.1315
X^{A^C}	10.0891
X^{B^A}	10.1046
X^{B^B}	10.0939
X^{B^C}	10.1173
X^{C^A}	20.1917
X^{C^B}	20.1703
X^{C^C}	10.1086
Y^A	70.4644
Y^B	60.4427
Y^C	70.6892