Moral Hazard and Renegotiation: Multi-Period Robustness

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Abstract

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$\bar{e} > \underline{e}$ $g > b$

g $p\ e$ $\bar{p}$ $\bar{e}$ $\underline{p}$

$\underline{e}$ w e

$V\ w, e$ $U\ w\ - D\ e$ $U' >$ $U'' <$

q_t $t < T$ q_T

T

fi

fi fi

fi fi

$t \leq T$ fi

4

$\underline{p}U_g\ \underline{e}$ $-\ \underline{p}\ U_b\ \underline{e}$ $\underline{p}U_g\ \overline{e}$ $-\ \underline{p}\ U_b\ \overline{e}$

$\bar{e}$ x^L

x^H x^L

$\bar{e}$ x^H,

$\underline{e}$ x^L x^H x^L

fl t

fi

fl $x >$

$\tilde{c}$

$\tilde{c}$

c t

c t

$\tilde{c}$ t $\hat{c}$ $\tilde{c}$

c t

c

t $\tilde{c}$ t $\hat{c}$

c c t $\hat{c}$

fi

t t x , $- x$

fi

Lemma 2 t *fi*

x , $- x$ $x >$

$\hat{}$ *fi*

T −

Lemma 3 t ≤ T

x , − x x >   c   c

c

x

c̃

c   c

c

c   c

c

Proposition 1 t ≤ T

fi x > x , − x

fi x , − x

fi

x >

fi

Corollary 1

c^0 $\{U_g^0\ e\ , U_b^0\ e\ \}_{e=\bar{e},\underline{e}}$

/ c^1 $\{U_g^1\ e\ , U_b^1\ e\ \}_{e=\bar{e},\underline{e}}$

q_1 q

c^0 c^1 $-\ q,$

c^2 $\{U_g^2\ e\ , U_b^2\ e\ \}_{e=\bar{e},\underline{e}}$

q_2

$$x\{q\,\overline{p}\quad U_g^{1}\,\overline{e}\qquad -\overline{p}\quad U_b^{1}\,\overline{e}\qquad -\,q\quad \overline{p}\quad U_g^{2\overline{e}}\,\overline{e}\qquad -\overline{p}\quad U_b^{2\overline{e}}\,\overline{e}\quad\}$$

$$-\,x\ \{r\quad \underline{U}$$

$$-\,r\quad q\ p$$

$$q\,\overline{p}U_g^1\;\overline{e}\qquad -\overline{p}\;U_b^1\;\overline{e}\qquad -\;q\;\;\overline{p}U_g^{2\overline{e}}\;\overline{e}\qquad -\overline{p}\;U_b^{2\overline{e}}\;\overline{e}\qquad \overline{p}U_g\;\overline{e}\qquad -\overline{p}\;U_b\;\overline{e}$$

$$q\,\underline{p}U_g^1\;\overline{e}\qquad -\underline{p}\;U_b^1\;\overline{e}\qquad -\;q\;\;\underline{p}U_g^{2\overline{e}}\;\overline{e}\qquad -\underline{p}\;U_b^{2\overline{e}}\;\overline{e}\qquad \underline{p}U_g\;\overline{e}\qquad -\underline{p}\;U_b\;\overline{e}\qquad \underline{U}$$

x

x

Proposition 3 q , x

x

$$x\{q\,\overline{p}\quad U_g^1\;\overline{e}\qquad -\overline{p}\quad U_b^1\;\overline{e}\qquad -\;q\;\;\overline{p}\quad U_g^{2\overline{e}}\;\overline{e}\qquad -\overline{p}\quad U_b^{2\overline{e}}\;\overline{e}$$
$$-\;\overline{p}\quad U_g\;\overline{e}\qquad -\overline{p}\quad U_b\;\overline{e}\quad\}$$
$$-\;x\quad -\;r\;\{\,q\;\underline{p}\quad U_g^1\;\overline{e}\qquad -\underline{p}\quad U_b^1\;\overline{e}\qquad -\;q\quad \underline{p}U_g^{2\overline{e}}\;\overline{e}\qquad -\underline{p}\;U_b^{2\overline{e}}\;\overline{e}$$
$$-\quad \underline{p}U_g\;\overline{e}\qquad -\underline{p}\;U_b\;\overline{e}\quad\}$$

$$\underline{p}U_g\ \bar{e} \quad -\underline{p}\ U_b\ \bar{e} \quad <$$

$$q\ \underline{p} \quad U_g^1\ \bar{e} \quad -\underline{p} \quad U_b^1\ \bar{e} \quad -q \quad \underline{p}$$

$$\frac{dU_g^{2\overline{e}}\ \overline{e}}{dr} \quad - \frac{\overline{p} - \underline{p} \quad - x \quad ' \ \underline{U}}{\overline{p} x \ \overline{p} \ \ '' \ U_b^{2\overline{e}}\ \overline{e} \qquad - \overline{p} \ \ '' \ U_g^{2\overline{e}}\ \overline{e}}$$

$$\frac{dU_b^{2\overline{e}}\ \overline{e}}{dr} \qquad \frac{\overline{p} - \underline{p} \quad - x \quad ' \ \underline{U}}{- \overline{p} \ x \ \overline{p} \ \ '' \ U_b^{2\overline{e}}\ \overline{e} \qquad - \overline{p} \ \ '' \ U_g^{2\overline{e}}\ \overline{e}}$$

r

$$\frac{\overline{p} - \underline{p} \quad - x \quad - q \quad ' \ \underline{U} \ \{ \ \ ' \ U_g^{1}\ \overline{e} \ \ - \ \ ' \ U_b^{1}\ \overline{e} \ \ - \ \ ' \ U_g^{2\overline{e}}\ \overline{e} \ \ - \ \ ' \ U_b^{2\overline{e}}\ \overline{e} \ \ \}}{\overline{p} q x \ \overline{p} \ \ '' \ U_b^{2\overline{e}}\ \overline{e} \qquad - \overline{p} \ \ '' \ U_g^{2\overline{e}}\ \overline{e}}$$

$$' \ U_g^{1}\ \overline{e} \quad - \quad ' \ U_b^{1}\ \overline{e} \quad - \quad ' \ U_g^{2\overline{e}}\ \overline{e} \quad - \quad ' \ U_b^{2\overline{e}}\ \overline{e}$$

$$\underline{U^{2\overline{e}}} < \underline{U} \qquad \underline{U^{2\overline{e}}} < \underline{U} \qquad r >$$

fi fi

Proposition 4 $T \geq$ q_t , $t < T$ q_T

X

T

$T -$ T $T -$

T $T -$

q_{T-1} T

fi $T -$ T

$T -$

T

T

$T -$

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