

Does Female Empowerment Promote Economic Development?

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Evidence

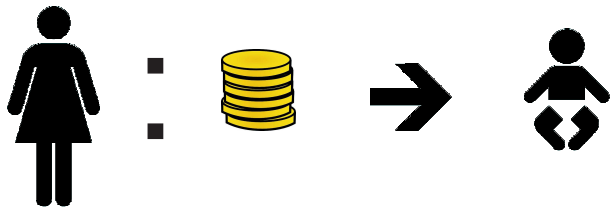
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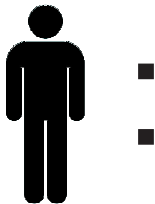
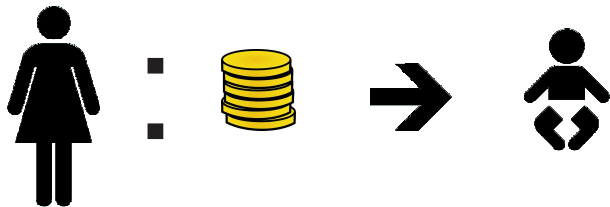


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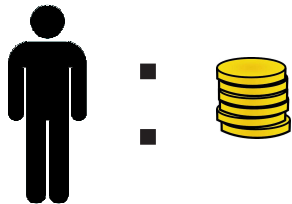
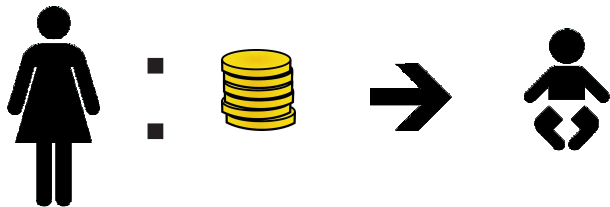


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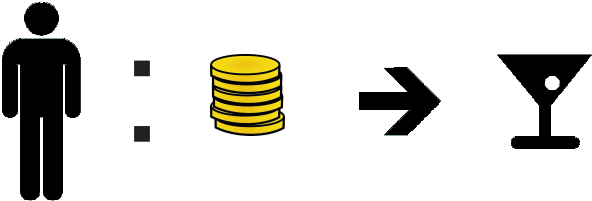
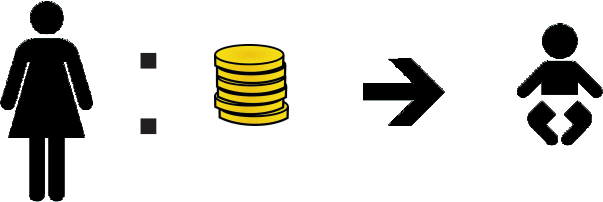
Evidence



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Development Policy

- ▶ Based on this evidence, various development policies and programs target women.
- ▶ Prominent examples:
 - ▶ Microcredit.
 - ▶ Conditional cash transfer programs (PROGRESA).

Question

- ▶ Is targeting transfers to women a good idea?

The Conventional Interpretation

- ▶ Cooperative bargaining model offers one specific interpretation of the facts:
 1. Women care more about children than men do.
 2. Women's bargaining power is increasing in their wealth.
- ▶ Interpretation suggests that, indeed, empowering women should benefit children, and thus development.
- ▶ But is this interpretation correct?

Our Interpretation

- ▶ We show that facts can also be explained by non-cooperative bargaining model with household production.
- ▶ Model *does not* rely on preference differences between men and women.
- ▶ Instead, mechanism builds on specialization in time- and goods-intensive household tasks driven by gender wage gap.

Implications for Development No Longer Clear Cut

- ▶ Wealth transfer from man to woman lead to increase in female-provided and decrease in male-provided public goods.
- ▶ Overall effect on development depends on relative importance of those goods.
- ▶ Mandated transfers likely to be harmful when physical capital accumulation is key engine of growth.

Model: Preferences

- ▶ Husband and wife.
- ▶ Derive utility from private goods and continuum of public goods (such as children).
- ▶ Spouses have identical preferences:

$$U_g = \ln(c_g) + \int_0^1 \ln(C_i) di,$$

where $g \in \{m, f\}$.

- ▶ Contribute to public goods in form of goods and time.

Model: Household Production

- ▶ Public goods produced using household production functions involving inputs of time T and goods E .
- ▶ Public goods differ in relative importance of time versus goods:

$$C_{g,i} = T_{g,i}^{\alpha(i)} E_{g,i}^{1-\alpha(i)},$$
$$C_i = C_{f,i} + C_{m,i},$$

where $g \in \{m, f\}$, $i \in [0, 1]$, $\alpha(i)$ increasing, $\alpha(0) = 0$, $\alpha(1) = 1$.

Model: Budget and Time Constraints

- ▶ Wages are gender specific. Assume $w_m > w_f$.
- ▶ Allocate income between personal consumption and public-goods contributions:

$$c_g + \int_0^1 E_{g,i} di = w_g(1 - T_g) + x_g.$$

- ▶ Allocate time between work and household production:

$$\int_0^1 T_{g,i} di = T_g.$$

Model: First-Best Allocation

- ▶ Maximize weighted sum of utilities subject to joint budget constraint and time constraints.
- ▶ In interior equilibrium, only low-wage spouse provides public goods.
- ▶ Mandated transfers do not affect allocation.

Model: Equilibrium

- ▶ Non-cooperative decision making.
- ▶ Spouses play Nash equilibrium:
 - ▶ Each spouse chooses own consumption, public-good contributions, and labor supply.
 - ▶ Choices of other spouse taken as given.
- ▶ Focus on how mandated transfers affect outcome.

Characterizing the Equilibrium

- ▶ Each public good is provided by spouse with higher preferred provision.
- ▶ First-order conditions for spouse g :

$$c_g = \frac{1}{\lambda_g},$$

$$E_{g,i} \leq \frac{1 - \alpha(i)}{\lambda_g},$$

$$T_{g,i} \leq \frac{\alpha(i)}{w_g \lambda_g}.$$

Characterizing the Equilibrium

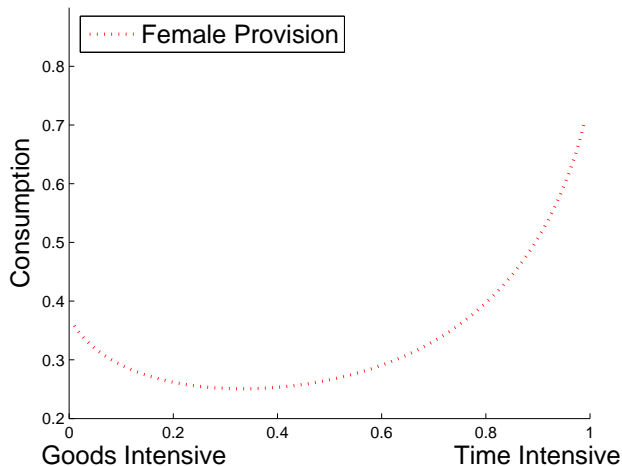
- ▶ Ratio of female-to male preferred provision for public good i :

$$\frac{\tilde{C}_{f,i}}{\tilde{C}_{m,i}} = \frac{E_{f,i}^{1-\alpha(i)} T_{f,i}^{\alpha(i)}}{E_{m,i}^{1-\alpha(i)} T_{m,i}^{\alpha(i)}} = \left(\frac{w_m}{w_f} \right)^{\alpha(i)} \frac{\lambda_m}{\lambda_f}.$$

- ▶ Expression strictly increasing in $\alpha(i)$.
- ▶ Equilibrium characterized by cutoff \bar{i} :
 - ▶ Goods with $i < \bar{i}$ provided by husband (goods intensive).
 - ▶ Goods with $i > \bar{i}$ provided by wife (time intensive).
 - ▶ Cutoff satisfies $\tilde{C}_{f,i} = \tilde{C}_{m,i}$.

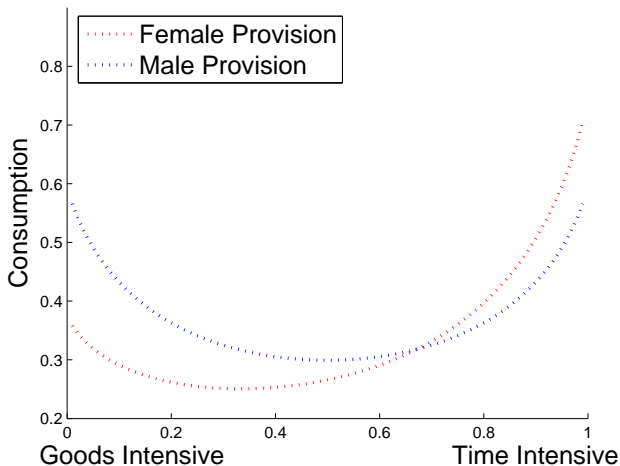
Characterizing the Equilibrium

- Determination of public-good provision:



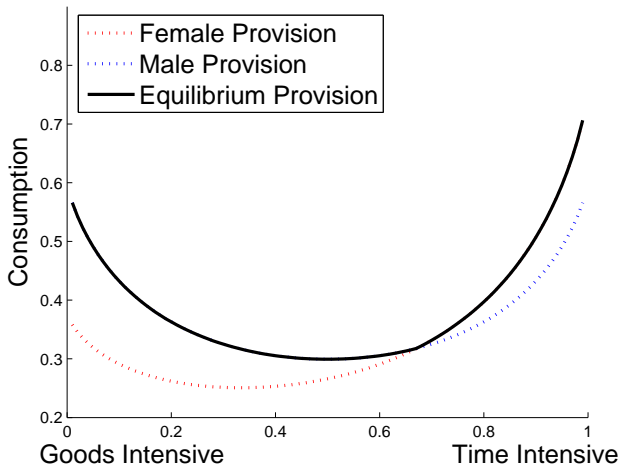
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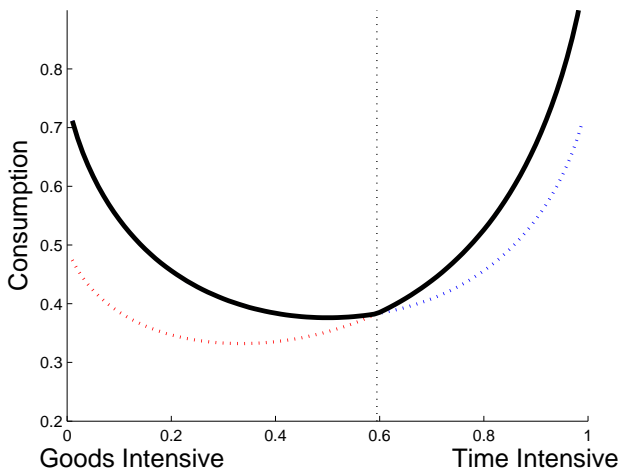


Mandated Transfers

- ▶ Consider mandated wealth transfer from husband to wife.
- ▶ Conditional on cutoff \bar{i} , husband will spend less on public goods, wife will spend more.
- ▶ Effect offset by shift in cutoff \bar{i} .
- ▶ However, only *partial* offset: Higher equilibrium spending by wife.

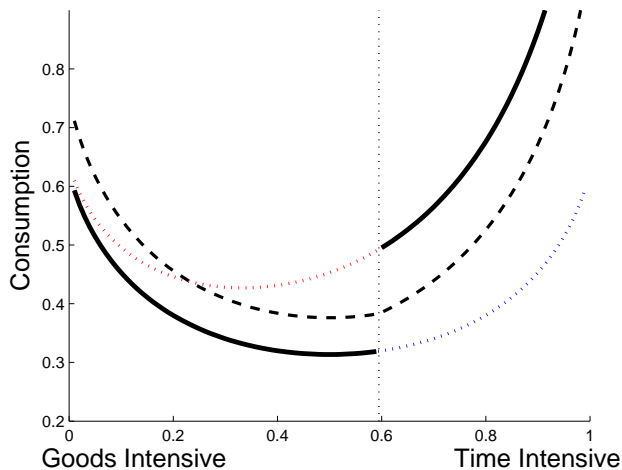
Mandated Transfers

- ▶ Baseline before transfer:



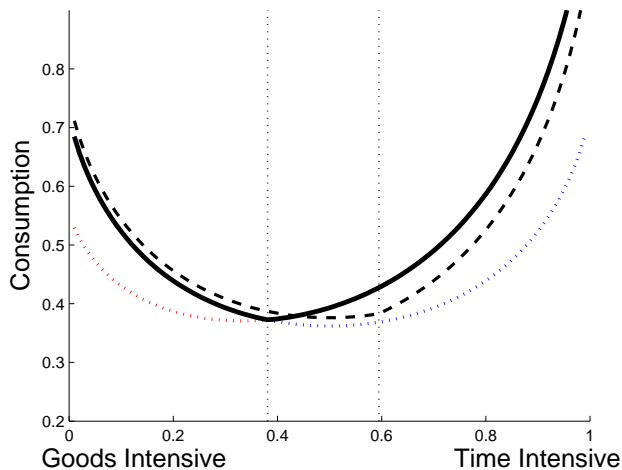
Mandated Transfers

- ▶ Counterfactual outcome for constant \bar{i} :



Mandated Transfers

- ▶ Outcome with new \bar{i} :

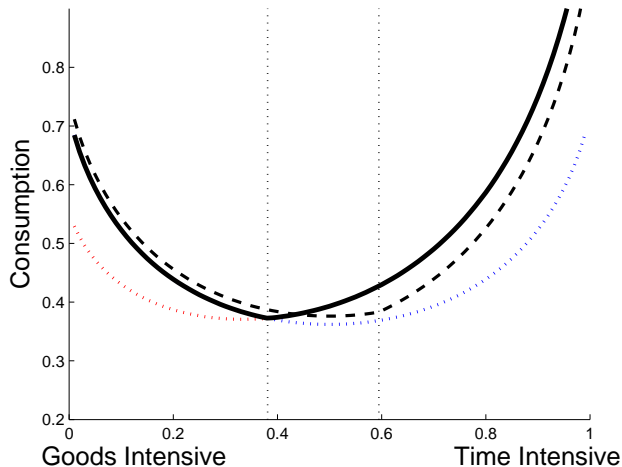


Mandated Transfers

- ▶ Transfer increases supply of public goods provided by recipient.
- ▶ True as long as relative willingness to pay for public goods is different at new compared to old cutoff.
- ▶ Effect would be even larger in model where spouses have absolute advantage at providing certain goods.

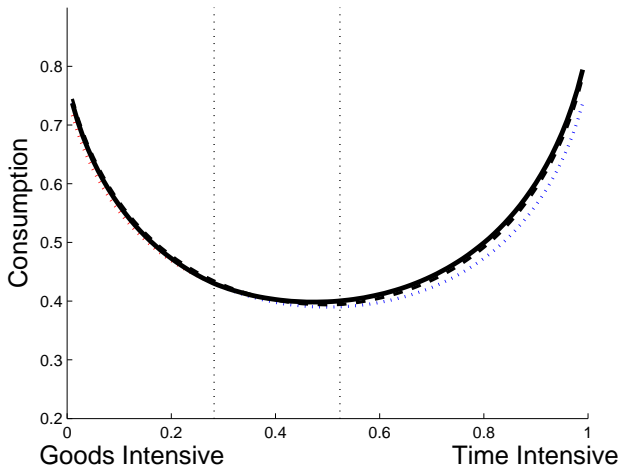
Mandated Transfers: Role of Relative Wages

- ▶ Pre- and post-transfer outcome for $w_f = 0.5$:



Mandated Transfers: Role of Relative Wages

- ▶ Pre- and post-transfer outcome for $w_f = 0.9$:



Mandated Transfers: Effect on Total Provision

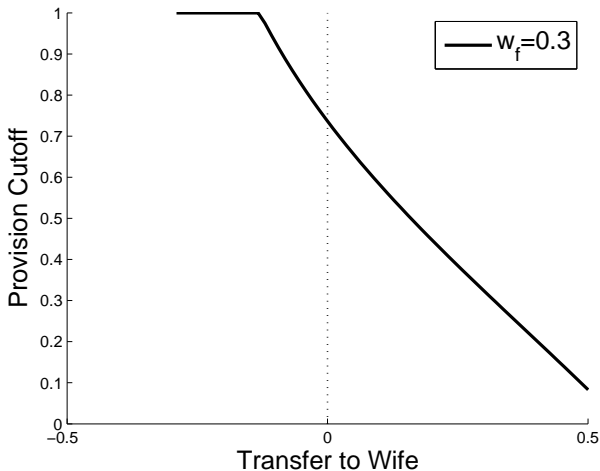
- ▶ Can trace out how targeted transfers affect total provision of public goods:

$$\int_0^1 \ln(C_i) di.$$

- ▶ Two effects:
 1. Expenditure Share Channel: Provision increases with wealth of spouse who spends larger fraction of resources on public goods.
 2. Efficiency Channel: Transfer from husband to wife shifts use of time towards efficient arrangement.
- ▶ When $\alpha(i) = i$ (symmetric case), efficiency channel dominates for interior solution.
- ▶ However, expenditure share channel can dominate when large range of public goods is goods-intensive.

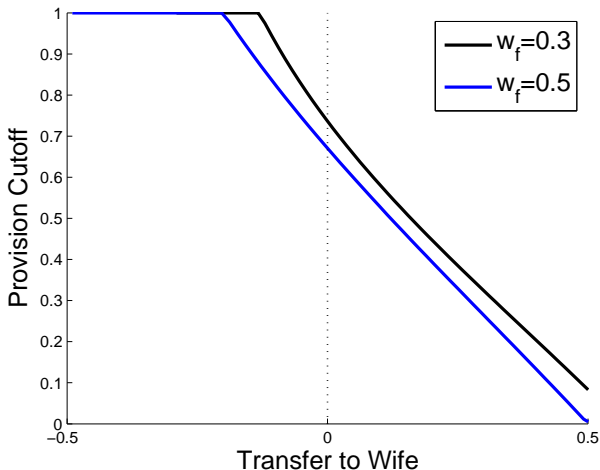
Mandated Transfers: Effect on Total Provision

- ▶ Cutoff between male and female public good provision as a function of transfer from husband to wife:



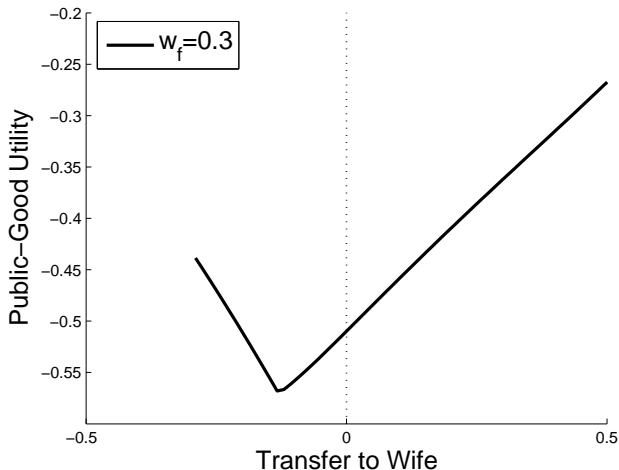
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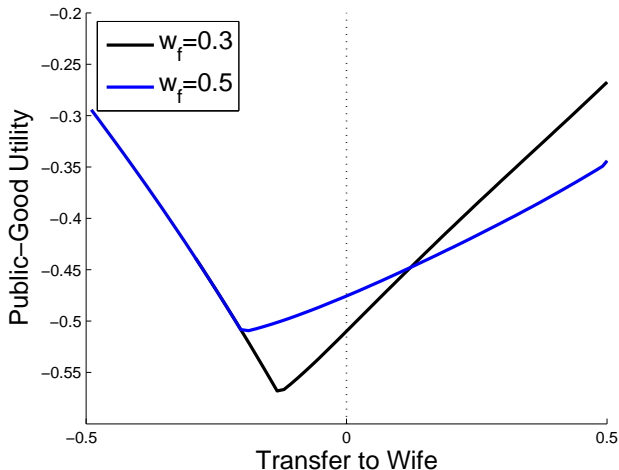
Mandated Transfers: Effect on Total Provision

- ▶ Total utility derived from public goods as a function of transfer from husband to wife:



Mandated Transfers: Effect on Total Provision

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Growth Implications of Mandated Transfers

- ▶ Growth model with successive generations. Each couple has one daughter and one son.
- ▶ Parents care about own consumption and children's full income:

$$U(c_g, y') = \ln(c_g) + \ln(y').$$

- ▶ Output T produced using physical and human capital:

$$Y = AK^{1-\theta}H^\theta.$$

- ▶ Factor accumulation:
 - ▶ Physical capital is left as a bequest to children (*money intensive*).
 - ▶ Human capital is produced with a variety of inputs involving time (*time intensive*).
- ▶ Exogenous gender gap; female productivity is $\delta < 1$ of male productivity.

Growth Implications of Mandated Transfers

- ▶ Constraints for parent's optimization problem:

$$k' = b = b_f + b_m,$$

$$\ln(h') = \int_0^1 \ln(C_{f,i} + C_{m,i}) di,$$

$$C_{g,i} = E_{g,i}^{1-i} (T_{g,i} h)^i,$$

$$c_g + b_g + \int_0^1 E_{g,i} di = \frac{1}{2} \left[w_g h \left(1 - \int_0^1 T_{g,i} di \right) + rk \right] + \tau_g,$$

$$y' = r'k' + w'h'.$$

- ▶ b' and h' are split equally between daughter and son.
- ▶ Mandated transfers satisfy:

$$\tau_f + \tau_m = 0.$$

Growth Implications of Mandated Transfers

- ▶ Preferences can alternatively be represented as:

$$U(c_g, k', h') = \log(c_g) + \beta_k \log(k') + (1 - \beta_k) \log(h'),$$

with:

$$\beta_k = \frac{(1 - \theta)\phi}{\theta + (1 - \theta)\phi}.$$

- ▶ Decision problem in growth model is special case of decision problem in general problem, with:

$$\alpha(i) = \begin{cases} 0 & \text{for } 0 \leq i \leq \beta_k, \\ \frac{i - \beta_k}{1 - \beta_k} & \text{for } \beta_k < i \leq 1, \end{cases}$$

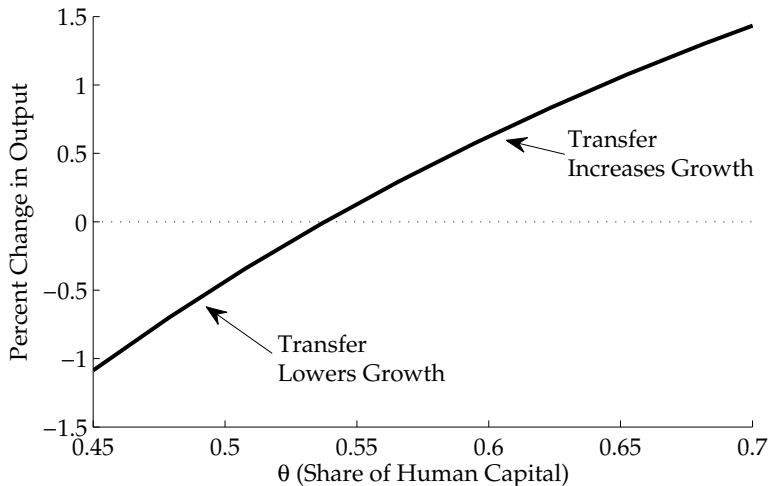
- ▶ Key implication: Implicit weight on goods-intensive goods decreasing in human capital share θ .

Growth Implications of Mandated Transfers

- ▶ Assume mandated transfers are proportional to output per capita.
- ▶ Model has balanced growth path.
- ▶ Even during transition path, time allocation is fixed.
- ▶ Key result: Sign of effect of mandated transfer on output depends on human capital share θ :

$$\frac{\partial Y'}{\partial \tau_f} \begin{cases} < 0 & \text{if } \theta \text{ small,} \\ > 0 & \text{if } \theta \text{ large.} \end{cases}$$

Growth Implications of Mandated Transfers



Mandated Transfers: Summary

- ▶ Wealth transfer from husband to wife leads to higher provision of female-provided public goods.
- ▶ Comes (at least partially) at expense of lower *public-good* spending by husband . . .
- ▶ . . . whereas in preference-gap model higher public good spending comes at expense of husband's *private* consumption.

Mandated Transfers: Summary

- ▶ Welfare effect depends on how important male-provided public goods are.
- ▶ One such good: Household investment.
- ▶ Empirical findings consistent with higher male propensity to save and invest.

Conclusions

- ▶ Non-cooperative bargaining model can explain impact of mandated transfers on household expenditures.
- ▶ Impact of mandated transfers declines as men and women become more similar (lower gender gap).
- ▶ Mandated transfers are a bad idea at stage of development where growth is driven by physical capital accumulation.