Droughts, Income Shock and Marriage Age

Duyi LIU

Institute for Economic and Social Research

liuduyi.iesr19u@hotmail.com

May 30, 2022

Overview

What Is The Question?

- Droughts
- Income Shock
- Bride Price
- Marriage Age

What is the relationship between income shock and marriage age when taking bride price into consideration?

Why Is It Important?

- Early marriage is still a common practice in our country, especially among girls.
- Female who marry early tent to have poor physical and socioeconomic outcomes
- Early marriage is associated with lower educational attainment, lower use of preventive health care services, lower bargaining power within the household, physical abuse and domestic violence.
- Little research has examined the important question of why such a practice is still so widespread and what might be effective policies to reduce it.

Literature Review

- **Early marriage and woman well being:**
  The consequences of early marriage in the developing world. Oxfam Journal of Gender and Development.Jensen, R., Thornton, R. (2003).

- **Income shock and early marriage:**
  Selling daughters: Child Marriage, Income Shocks and the Bride Price Tradition. Working Paper.Corno, L., Voena, A. (2021).
  Age of marriage, weather shocks, and the direction of marriage payments. Econometrica.Corno, L., Hildebrandt, N., Voena, A. (2020).

- **Rainfall shock and income shock:**
  Economic shocks and civil conflict: An instrumental variables approach. Journal of political Economy.Miguel, E., Satyanath, S., Sergenti, E. (2004).
  Income shocks and gender gaps in education: Evidence from Uganda. Journal of Development Economics.Björkman-Nyqvist, M. (2013).

The Decision Model

For the household, **the value of marrying is equal to:**
$$V_a^0 (m_a = 1) = u (y_a + BP_a) + \xi_a + \delta E \left[V_{a+1}^1 \right]$$
The value of waiting to marry at age a is equal to:
$$V_a^0 (m_a = 0) = u (y_a \cdot (1 + e)) + \delta E \left[V_{a+1}^0 \right]$$
Parents decide **to marry off their daughter** if and only if the value of marriage exceeds the value of waiting:
$$u(y_a + BP_a) + \delta E \left[V_{a+1}^1 \right] > u (y_a \cdot (1 + e)) + \delta E \left[V_{a+1}^0 \right]$$

Data and Descriptive Statistics

- **Marriage and bride price data**
  China Health and Retirement Longitudinal Study(CHARLS), includes about 10,000 households and 17,500 individuals in 150 counties/districts and 450 villages/resident committees.
- **Rainfall shocks**
  1979-2019 city level rainfall data from NOAA(National Oceanic and Atmospheric Administration) Center for Weather and Climate Prediction

Data and Descriptive Statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Panel A: Full Sample					
Betrothal Gift to Male	15,713	10,882	5,278	1,906	32,898
Betrothal Gift to Female	15,713	4,187	1,658	2,018	8,759
Married Before 20	15,713	0.113	0.317	0	1
Married Before 24	15,713	0.672	0.469	0	1
Panel B: BP > 50%					
Betrothal Gift to Male	8,226	15,002	3,563	11,731	32,898
Betrothal Gift to Female	8,226	4,861	1,716	2,360	8,759
Married Before 20	8,226	0.114	0.317	0	1
Married Before 24	8,226	0.675	0.468	0	1
Panel C: BP < 50%					
Betrothal Gift to Male	7,450	6,338	2,309	1,906	9,691
Betrothal Gift to Female	7,450	3,429	1,195	2,018	5,876
Married Before 20	7,450	0.113	0.317	0	1
Married Before 24	7,450	0.670	0.470	0	1

Empirical Strategy

I exploit exogenous variation in negative weather shocks(i.e droughts) across cities and different years to study the causal effects of income shocks on the girl's age of marriage. Here is the empirical model for **woman i** living in **city c** and born in **year y**:

$$Y_{i,c,y} = \alpha + R_{i,c,y}\beta + \lambda X_{i,c,y} + \delta_c + \gamma_y + \epsilon_{i,c,y}$$

$Y_{i,c,y}$ is the age of marriage
$R_{i,c,y}$ is a vector containing the droughts that woman i has experienced before her first marriage.
δc and γ_y are the location and year-of-birth fixed effect.

Empirical Results

Age of Marriage	(1)	(2)	(3)	(4)
	Full Sample		BP>50%	BP<50%
L3.shock	0.001	-0.001**	-0.002**	-0.001
	(0.77)	(-1.99)	(-2.06)	(-0.95)
L2.shock	-0.000	-0.002**	-0.003**	-0.001
	(-0.44)	(-2.13)	(-2.41)	(-0.65)
L.shock	-0.002***	-0.003***	-0.004***	-0.001
	(-2.64)	(-3.50)	(-3.99)	(-1.09)
shock	-0.003***	-0.003***	-0.005***	-0.002*
	(-3.79)	(-4.56)	(-4.92)	(-1.71)
Observations	56,396	56,396	29,893	26,502
R-squared	0.189	0.243	0.251	0.245
Location FE	YES	YES	YES	YES
Birth Year FE	NO	YES	YES	YES

Conclusion

- This paper found that the adverse shocks during teenage years increase the probability of early marriages.(decrease the marriage age)
- For some families, the bride price is a source of insurance for households exposed to income shocks.
- Cash transfers, both conditional on avoiding child marriage and unconditional, may reduce early marriages, especially when they target low-income households.

The End