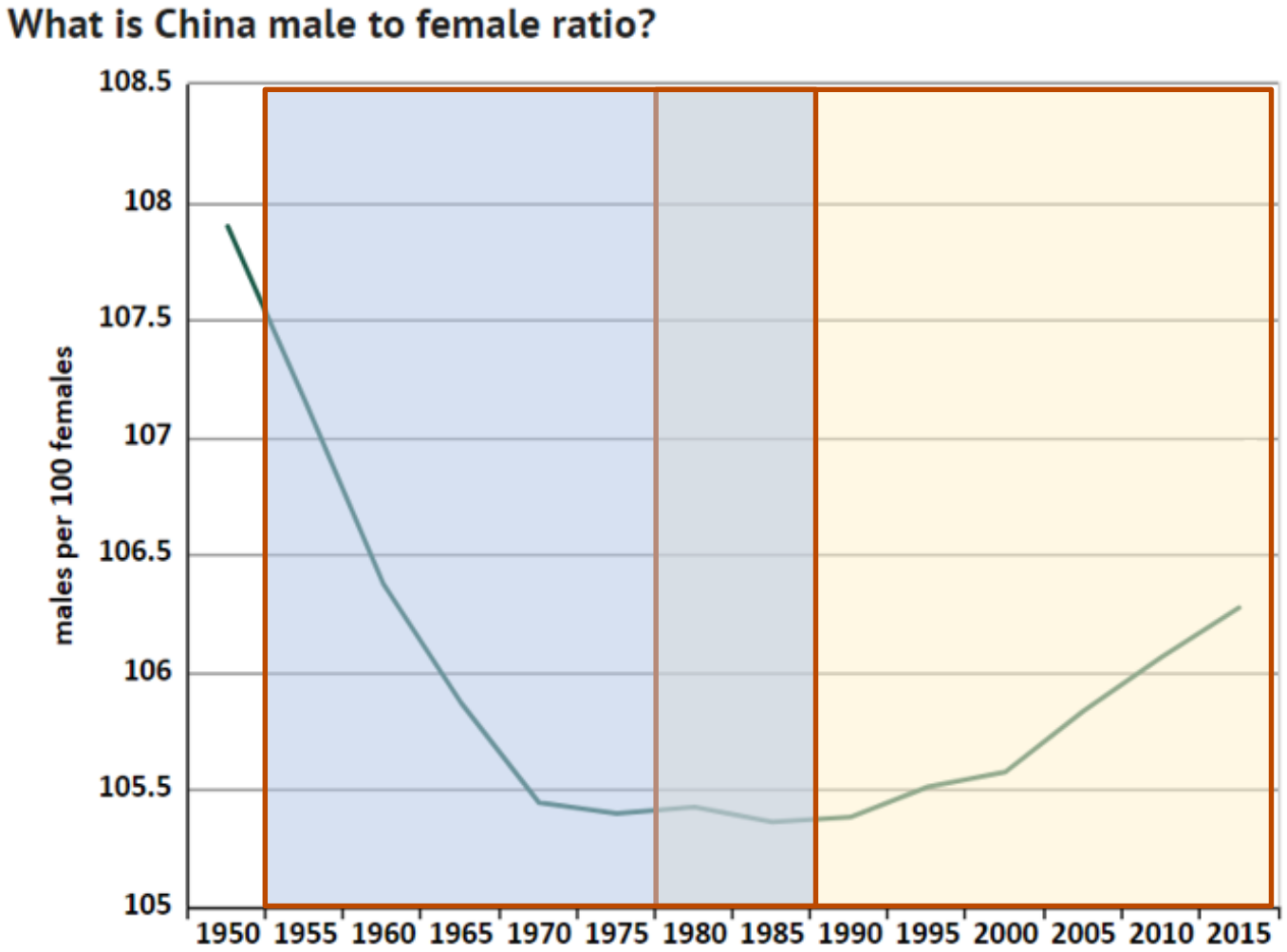
Did “industrialization and agricultural collectivization” normalize the skewed sex ratio in China?

Sixue Liu

Computational Social Science

1. Research Background



Source: World Population Prospects: The 2017 Revision

2. Research Question

Did “industrialization and agricultural collectivization” normalize the skewed sex ratio in China?

- Skewed sex ratio is a serious problem in China, the government is seeking ways to alleviate it.
- Understanding the real driver of skewed sex ratio in China.
- Analyzing the relationship between one-child policy and sex ratio in China.

3. Literature Review

Most studies of gender imbalances focus on the implementation of the one-child policy.

1) One-child policy (1980)

- "Gender discrimination policy" *(Loh and Remick 2015)*
- Whether allowing birth of the second child can improve the gender imbalance problem *(Zeng Yi 1993)*

2) The Household Responsibility System (1978)

- The increase in household's income
- Stronger labor productivity *(Almond, Li and Zhang 2013)*

3) Technical improvement

- B-ultrasound selection reduces gender selection costs *(Chen et al 2013)*

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4. Exploring the reasons for raising child

1) Investment/ Production Good *(Loh and Remick 2015)*

- Labor-related incentives
- Ritual-related incentives (less important)
- Inheritance and property ownership
- old-age security-related incentives (most important)

2) Consumer Durables *(Beker, 1960)*

- Consumer preference for children

5. Data

1) Gazetteer Data from county books

Province	county	d	year	Total Population	Male Population	Female Population	Birth Population	Birth Rate	Death Population	Death Rate
Beijing	Shun'yi	110222	1971	451484	221835	229649	9504	21.1	3814	8.5
Beijing	Shun'yi	110222	1972	453624	221948	231676	9145	20.2	3875	8.5
Beijing	Shun'yi	110222	1973	460476	225016	235460	8511	18.5	3921	8.5
Beijing	Shun'yi	110222	1974	465728	227927	237801	7399	15.9	3945	8.5
Beijing	Shun'yi	110222	1975	467238	228512	238726	5943	12.7	4406	9.4
Beijing	Shun'yi	110222	1976	471229	229818	241411	5043	10.7	4148	8.8
Beijing	Shun'yi	110222	1977	475952	231279	244673	5690	12	3892	8.2
Beijing	Shun'yi	110222	1978	469741	227336	242405	7742	16.5	3756	8
Beijing	Shun'yi	110222	1979	463707	224955	238752	8134	17.42	3683	7.9
Beijing	Shun'yi	110222	1980	463193	224255	238938	8282	17.8	3865	8.3
Beijing	Shun'yi	110222	1981	467792	226949	240843	8651	18.58	3679	7.9
Beijing	Shun'yi	110222	1982	474628	230715	243913	10208	21.66	3571	7.58
Beijing	Shun'yi	110222	1983	478415	232824	245591	7225	15.16	3567	7.49
Beijing	Shun'yi	110222	1984	484311	237353	246958	7121	14.78	3344	6.94
Beijing	Shun'yi	110222	1985	486200	239005	247195	8851	18.2	3652	7.51
Beijing	Shun'yi	110222	1986	490599	241455	249144	9729	21.3	3287	7.2
Beijing	Shun'yi	110222	1987	496098	244604	251494	9166	20.68	3278	7.39
Beijing	Shun'yi	110222	1988	500992	247512	253480	8936	17.88	3609	7.22
Beijing	Shun'yi	110222	1989	520889	257418	263471	8804	17.23	3703	7.25
Beijing	Shun'yi	110222	1990	533728	263771	269957	8651	16.41	3871	7.34

5. Data

2) United Nation Data

Region, subregion, country or area *	Notes	Country code	Number of male deaths (thousands)		
			1950-1955	1955-1960	1960-1965
ASIA		935	86 881	86 572	87 732
Eastern Asia		906	38 772	39 576	41 443
China	4	156	34 835	35 979	37 902
China, Hong Kong SAR	5	344	46	49	50
China, Macao SAR	6	446	5	4	3
China, Taiwan Province of China		158	228	213	216
Dem. People's Republic of Korea		408	668	422	422
Japan		392	2 030	1 893	1 867

6. Framework Model

$$SRB_{i,t} = \beta_0 + \beta_1 \cdot OCP_{i,t} + \beta_2 \cdot collect_{i,t} + \beta_3 \cdot OPC_{i,t} + u$$

- $SRB_{i,t}$: sex ratio at birth, the main dependent variable
- $OCP_{i,t}$: dummy variable, will be marked as 1 if this county has implemented one-child policy
- $collect_{i,t}$: dummy variable, will be marked as 0 if this country has implemented the household responsibility system
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