Background. Chinese government has been targeting a fertility level at 1.7 by restricting urban residents to have only one child per family, allowing for the second birth in the rural areas only if the first birth is daughter and up to three births for families of small ethnic groups. Fertility level dropped sharply in the 1970s from 7 to 2.7 in the late 1970s, fluctuated between 2.1 and 2.6 in the 1980s in the first 10 years implementation of one-child policy but fell suddenly from 2.4 in 1990 to around 1.5 by the end of the century. Apparently, the government has achieved full success. While some researchers think that it is too low/good to be true, others are wondering why fertility fell so suddenly in the 1990s after 10 year stagnation above the replacement in the 1980s, given the same efforts of family planning.

One coincidence of the fall is the massive rural-urban migration at an unprecedented scale in the 1990s. To prevent rural families from settling in urban areas, Chinese government used to control both labor migration and the change of resident status (hukou) to cities. The sharp demand of cheap labor for the nation's industrialization pressed the government to relax its policy in the mid-1980s to allow short-term labor migration from rural to urban areas. The volume of cross-county labor migration thus increased from a mere of a few million in the early 1980s to over twenty million in 1990 and expanded rapidly to eighty million in the 2000. Such migration is mostly enacted by young adults from rural areas in the interior where fertility level is normally higher than the nation's average.

Theoretical Framework. The macro long-term relationship between urbanization and fertility is unequivocal: when the former increases, the latter decline. The underline reason is that both income and opportunity costs of having large families (or price of children) increase in the modern sector but the negative price effect on fertility usually outweighs the positive income effect. From the short term perspective, however, the relationship is not so clear. In developing countries, a large portion of migration is temporary in nature. Temporary migrants tend to avoid the high costs and risks of family migration through the delay of marriage and births, leaving dependents behind and having their children raised and educated in rural areas at relatively low costs. This is particularly true in China where the hukou system denies rural migrants from accessing to official urban resident status and associated benefits (e.g., subsidized education).

Hypotheses.

1. Labor migration tends to have strong delaying effect on both marriage and birth because of the rising opportunity costs of early marriage and birth in the modern sector.

2. The negative effect of labor migration on marital fertility is likely to be significant for family settled in urban areas but less so for temporary migrants whose dependents stay behind.

3. The recent fertility decline in China attributes more to the delay of marriage and births than to the decline of marital fertility, which is likely to happen when a large portion of migrants settles in cities.

Data. To conduct a systematic study of the impact of labor migration on fertility reduction in China, we use

1. 1 % micro data of China's 5th census in 2000 which contains fertility information on the number of children ever born by sex and recent birth by sex within the one year period prior to the census, migration information about sex and number of people left the household and migration status, timing of migration, the urban/rural settlement type of origin and destination of the individual, as well socio-demographics of the mother on age, marital status, age at first marriage, level of education, employment status and occupation.

2. A GIS database of county statistics at county level including those computed from the census tapes, main geographical features, infrastructure and indicators of the level of socioeconomic development.

Methodology.

1. Measure fertility level by TFR and mean birth by age group;
2. Classify females with rural hukou into four groups: (a) unmarried migrant in a city; (b) unmarried stayer in the rural community; (c) married migrant in cities whose husband was co-residing in the same household; (d) married migrant in a city whose husband was not co-residing in the same household; (e) married stayer whose hushand migrated out of town; (f) married stayers whose husband also stayed put.
3. Tabulate the average number of births by urban/rural settlement type, age, level of education, marital, migratory, spousal co-residence status;
4. Regress the number of children (ceb) on migratory (m) and spousal co-residence status (r) as well as on other socio-economic indicators of both the local community (l) and the female adult (s) $ceb = \beta'(m, r, l, s)$.
5. Find the significance of the effect of migration on fertility;
6. Simulate the level of fertility should the level of migration remained as low as that in the 1980s;
7. Find out the percentage contribution of migration to the fall of fertility in the 1990s.