

The Great Stagnation of Taiwan

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Motivation

One of the most pressing economic issues in Taiwan today is **wage stagnation**.

- ▶ Pay and salaries have been lagging for more than a decade,
- ▶ but little systematic evidence has showed the timing and the magnitude or discussed plausible causes.
- ▶ Can this be explained by changes in composition of the workforce?
 - ▶ university expansion, and
 - ▶ immigration of less-skilled workers into Taiwan.

Choice of income measurement - individual wage level

I measure income by **full-time workers' self-reported monthly wage**, instead of family income, for two reasons:

1. We should isolate the issues of changes in wage inequality from the drastic changes in family structures, because of ageing, fertility drops, and large decreases in the number of marriage rates and extended families (Kuznets 1989; Chu and Jiang 1997).
2. wage inequality accounts for majority of income inequality across individuals and across families (Fei, Ranis & Kuo 1979);

In addition, my empirical results remain almost the same when I include performance pay and benefits, which are highly correlated with wage income.

Previous results using family income measures

- ▶ Kuan and Chen (2008) found that the changes in family income inequality in the 2000s is driven primarily by the changes in family composition.
- ▶ Chen and Tsay (2013):
 - ▶ 1980s -1990s: the right tail of the distribution of family income has been fattening, while the left tail of the distribution remained unchanged.
 - ▶ Since 2000: the right tail has stopped fattening, while the left tail started fattening.
 - ▶ They pointed out that stagnation has recently become another important issue in addition to inequality.

Stagnation in other countries

- ▶ **Innovation slowdown:** U.S. median income stagnated from the mid 1970s onwards (Acemoglu 2002; Cowen 2011)
- ▶ **Resource misallocation** slows down productivity: Hong Kong (Hsieh and Klenow 2009)
- ▶ **Globalisation:** U.S. wages in areas with higher Chinese trade exposure since 2000 (Autor, Dorn, and Hanson 2013)
- ▶ Elites who innovate and control **institutional** instruments and resources preserve power by preventing innovation (Robinson and Acemoglu 2012)
- ▶ Financial **frictions** and lacking contract enforcement: Mexico between 1982 and 1995 (Kehoe and Meza 2012)
- ▶ Japan since mid 1990s (Motonishi and Yoshikawa 1999; Lise, Sudo, Suzuki, Yamada and Yamada 2013)

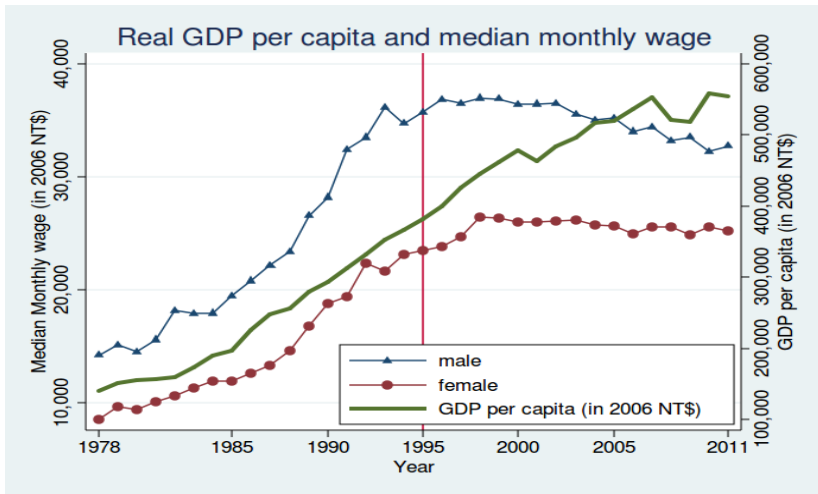
Data (1)

- ▶ “Manpower Survey” 1978-2011, repeated cross section; similar to the U.S. Current Population Survey
- ▶ Constructed by the Directorate General of Budget, Accounting and Statistics (DGBAS)
- ▶ The data contains information about civilian earnings, education, employment, demographics, occupation, industry, seniority, and hours of work of individuals older than 15.
- ▶ The sampling frame:
 - ▶ National household frame based on the universal household registry at town level of the year. The first
 - ▶ Monthly sample size of about 20,300 households.
 - ▶ Two-stage sampling design:
 - ▶ 1st Stage - about 500 towns chosen;
 - ▶ 2nd Stage - for each town in the 1st stage, draw about 20,300 households from the administrative file of household registry.

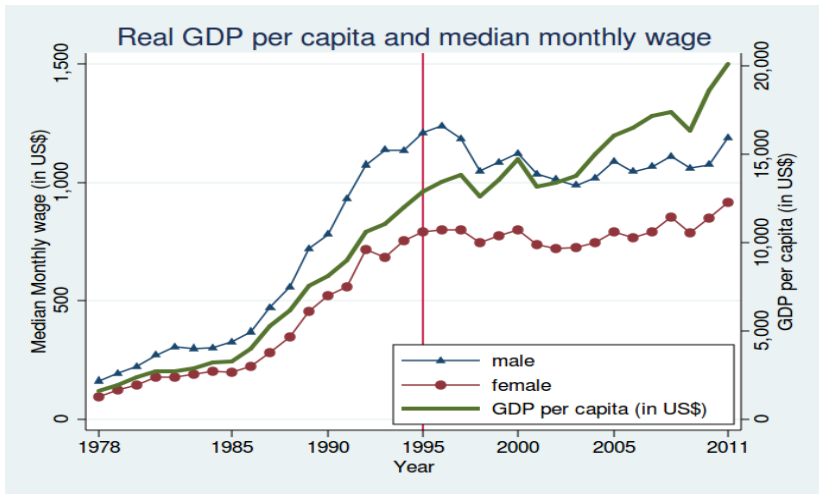
Data (2)

- ▶ Sample selection:
 - ▶ We include full-time employees (at least 35 hours per week) in both public and private sectors who had positive earnings and were 15 to 64 years old;
 - ▶ We include all industries.
 - ▶ We include top-coded earnings (very few).
 - ▶ We separate employers from self employees (our results are not sensitive to inclusion of self employees)
 - ▶ We report statistics in 2006 NT dollars (CPI) or in current US dollars (PPP).

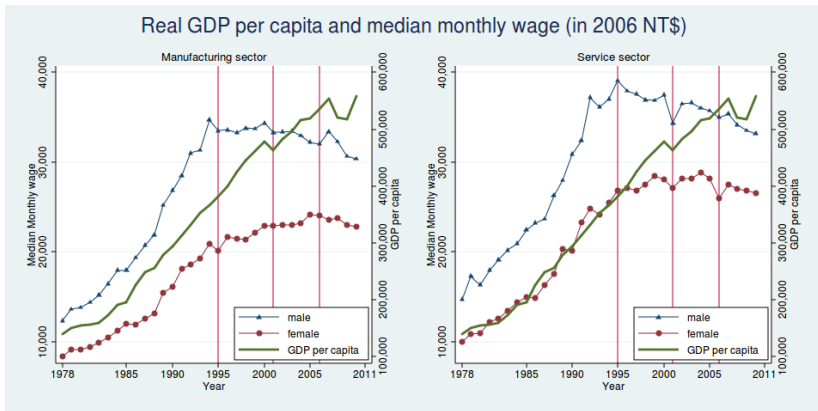
Increasing GDP per capita (in CPI) with stagnant wages



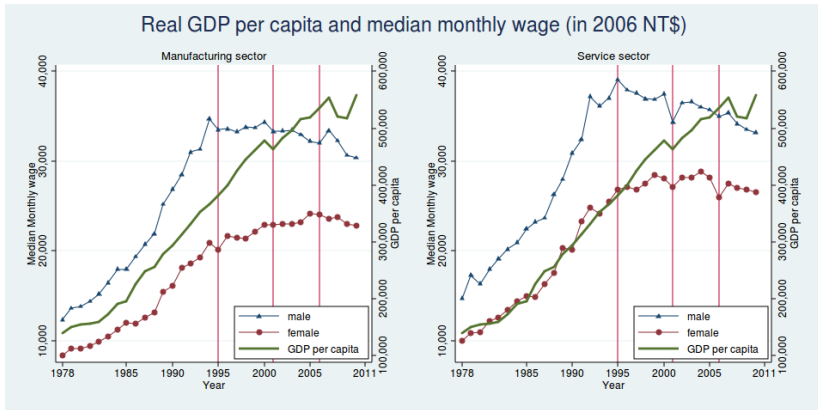
Increasing GDP per capita (in PPP) with stagnant wages



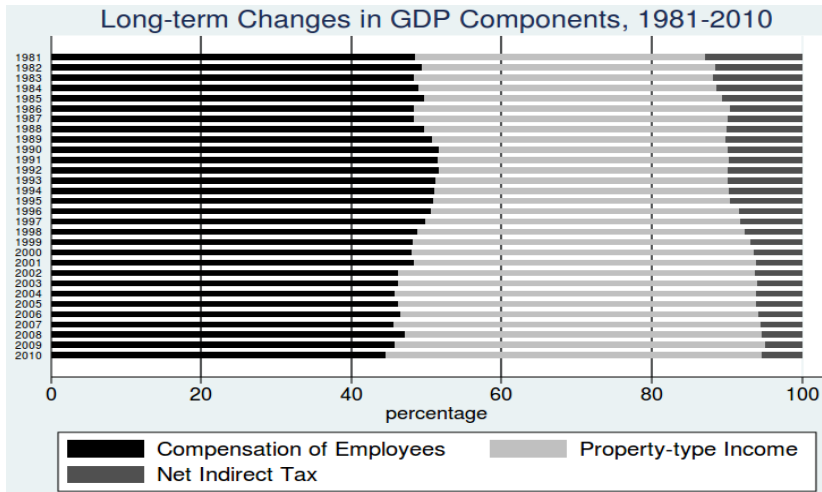
Men and Women



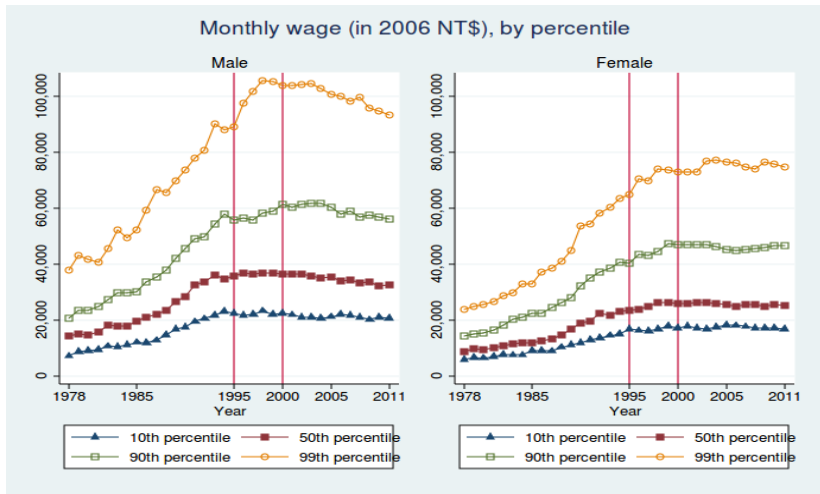
Manufacture and Service Sectors



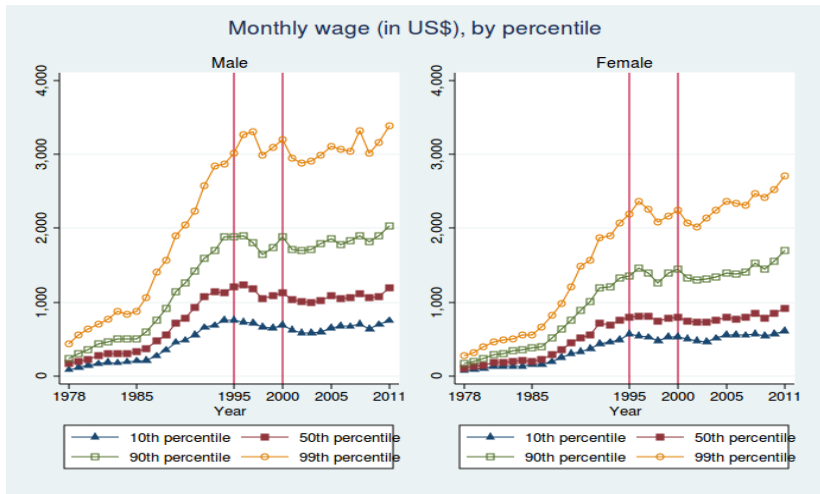
Falling Fraction of Labor Income in GDP Components



Wage stagnation at each percentile (in 2006 NT\$)



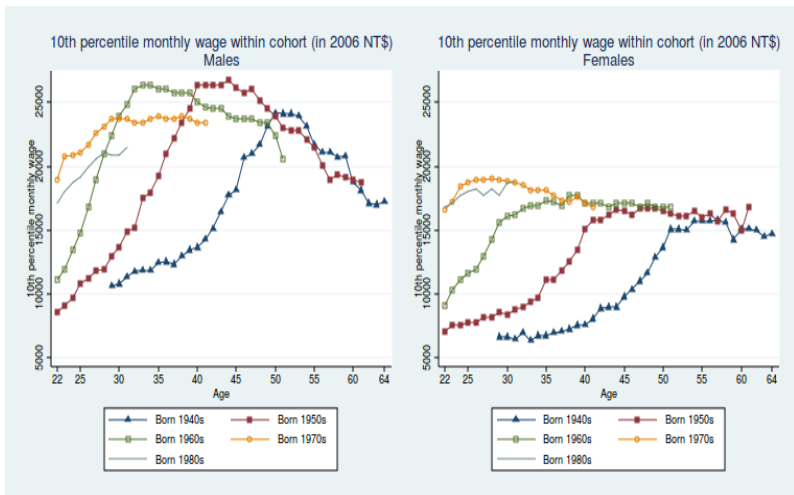
Wage stagnation at each percentile (in current US\$)



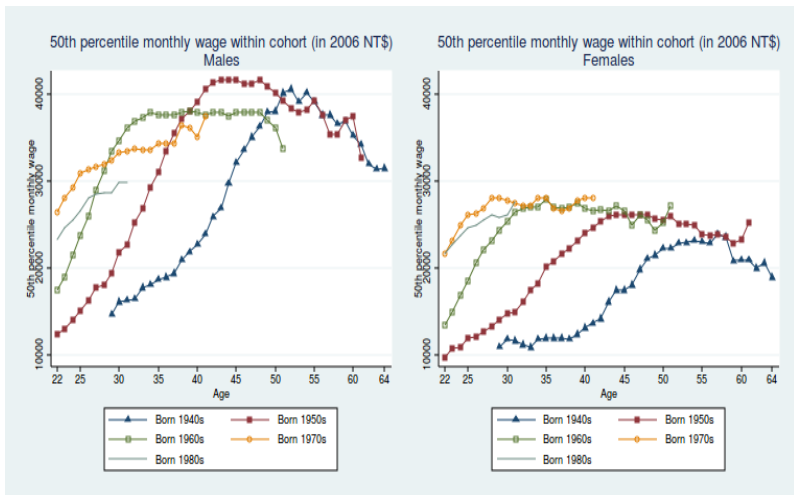
Wage stagnation

- ▶ Prior to 1990 wages grew together for both males and females and for the entire distribution.
- ▶ Wages of males started stagnating first:
 - ▶ The mid and lower tails started first in mid 1990s.
 - ▶ The 90th percentile started in 2000.
- ▶ Wages of females stagnated later:
 - ▶ The mid and lower tails started first, around 2000.
 - ▶ The 90th and 99th percentiles started in the early 2000s.
- ▶ Wages has been stagnating at all parts of the distribution
 - ▶ before the 2008 financial crisis and
 - ▶ before the cohort whom are affected by university expansion (1998-2006) enter job markets.

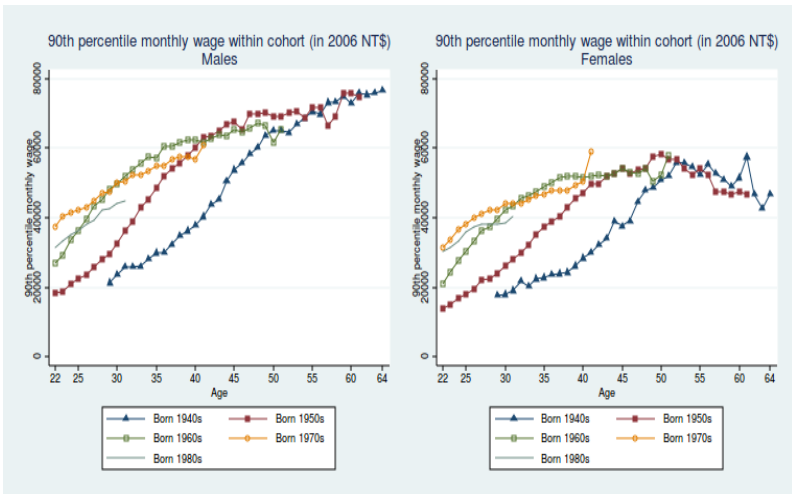
The Post-WWII Birth Cohorts - the 10th percentile



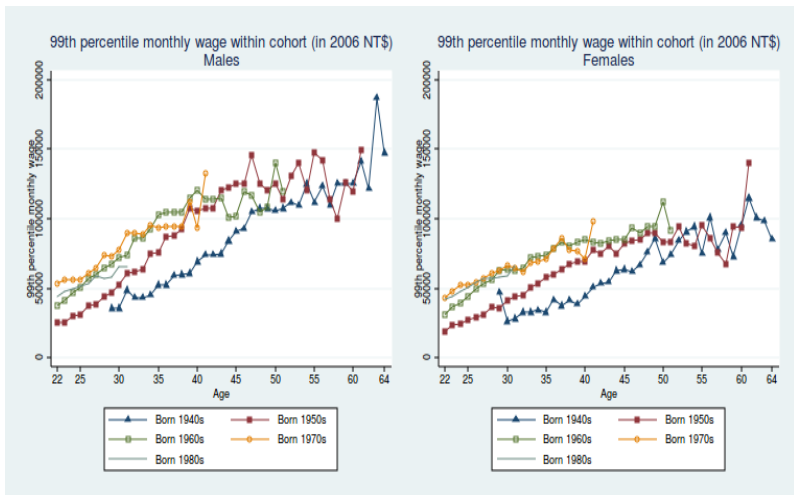
The Post-WWII Birth Cohorts - the 50th percentile



The Post-WWII Birth Cohorts - the 90th percentile



The Post-WWII Birth Cohorts - the 99th percentile

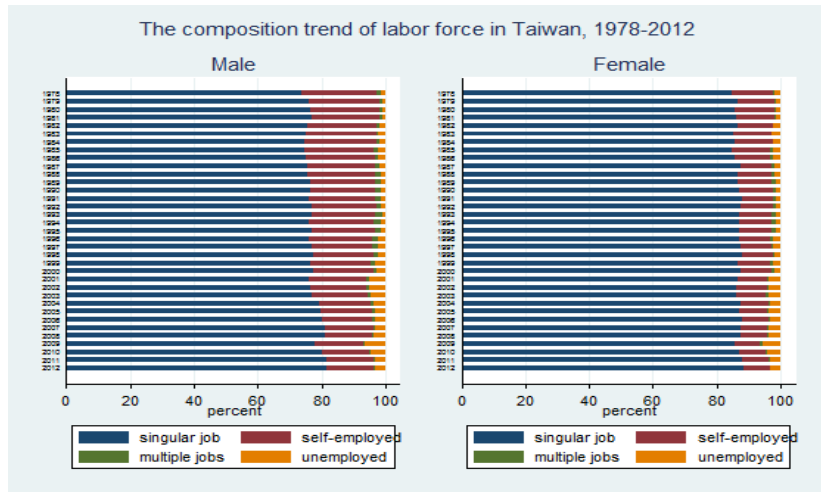


The Lost Generation

Summary of statistics

- ▶ While GDP per capital grows steadily, wage has been stagnating since the mid 1990s for the entire distribution, except for the top 99th percentile.
- ▶ Around the same time, the wage share started being eroded by the profit share.
- ▶ Gender wage differentials have been declining rapidly though gender differences in the pattern of wage polarization have been persistently large.
- ▶ Younger cohorts have the peak of the wage profile much earlier than the older cohorts. The 1940s cohort peaked at the age 50s, but the 1906 cohort peaked at the age 30s.
- ▶ Intergenerational progress is declining and vanishing.

Any Composition Change in the early 1990s?



Any Composition Change in the early 1990s?

The composition trend for education levels in Taiwan labor force, 1978-2012



Call For More Work

- ▶ Given that the wage share is declining, standard constant-return-to-scale production functions cannot explain the declining share of labour income. A new framework needs to be established to create the changes in the distribution of labour versus non-labour income.
- ▶ China syndrome?