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Patterns of Inequalities in Public Transfers by Gender in China

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Abstract

This paper empirically examines gender inequality in benefiting from public education, health care and pension transfers over the lifecycle in China. Based on data from the 2010 wave of China Family Panel Studies and government statistics, we apply the internationally comparable method of National Transfer Account to conduct analyses. The results show that, although public health care and pension transfers are remarkably biased against women at old ages, public education transfers are essentially gender-neutral even at the tertiary education level. Gender inequality among older cohorts is largely a legacy of past occupational and earning privileges for males, and the fragmented design of health insurance and pension programs. With growing female advantage in education and a gradual unification of social security system, the gender gap in public transfers in China is expected to narrow in the coming years.

Keywords

Public Transfer; Gender Inequality; China

1 Introduction

Governments from all regions of the world have placed a high priority on achieving gender equality and empowering women and girls. Gender equality is listed as one of the UNESCO's two global priorities, the third goal under Millennium Development Goals, and also one of the seven Basic State Policies in China.² Pervasive gender gaps, however, are still evident in most societies, even in welfare states. For example, women's average hourly wage was 82% of men's in Denmark, 76% in UK, and merely 49% in Japan in 2006 (Chang and England 2011). Gender inequality not only deprives women of their autonomy (Sen 1999), but also adversely affects social, political and economic functioning of the whole society, such as increased child mortality, bad governance and reduced economic growth (Branisa and Klasen 2013, Klasen and Lamanna 2009).

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²Other Basic State Policies in China include family planning policy, environmental protection, conservation of water and soil.

With a commitment to promote equal rights and opportunities between men and women, affirmative gendered social policies are widely in existence, such as female political quotas to enhance female representation, parental and paternity leave to encourage participation of fathers in child care and of mothers in labor market (Borrell et al. 2014). However, gender has not always been an explicit policy focus in public transfers, which are essential in fighting against poverty and in improving overall equity through resource redistribution (Castro-Leal et al. 1999).

Public transfers include both in-kind transfers such as public education and health care (goods and services received directly from government agencies), and cash transfers such as pension (direct transfer payment to intended beneficiaries). These transfers are often designed on the basis of income groups, such as social protection and educational vouchers for the poor, or on the basis of age, such as Medicare for the aged and public pensions (Folbre and Wolf 2012, Kotlikoff and Burns 2012, Lee 2012, Lee and Mason 2011). Much less commonly seen are public transfer programs that are specifically designed to redistribute resources on the basis of gender.

Given the pervasive gender gaps in most countries, however, seemingly gender-blind public transfer programs designed for other purposes could have intended or unintended gendered consequences (Earles 2013, Ginn and MacIntyre 2013). Gender differentials in school enrolment, employment, occupation and health, for instance, may lead to gender-biased incidence of public education, health care and pension transfers, which in turn ameliorate or exacerbate the existing gender gaps. To the best of our knowledge, this issue has barely gone noticed by the research community, except for limited research on gender gap in public pensions (Ginn and MacIntyre 2013, Takayama 2014).

China serves as a good economic and institutional context to investigate the pattern of gender inequality in public transfers. On one hand, China still embraces huge gender gaps, particularly at infancy and at advanced ages, which might be the legacy of traditional son preference and a gender hierarchy within and outside the family, as discussed in the second section later in this paper. On the other hand, government education, health care and pension programs have undergone dramatic expansions over the past decade, accompanied by hyper-economic growth and inflating government revenue. An examination of the gendered implications of public transfer programs help evaluate these policy shifts and serve as an empirical foundation for future reforms in China as well as for references in other developing countries.

Drawing on the rich information obtained with the methodology of National Transfer Account, we examine gender differentials in three major types of public transfers over the lifecycle. Two questions are addressed. The first and the basic question is whether public education, health care and pension spending is equally allocated to men and women. The second and related question is whether the extent of gender inequality differs across age groups. We are interested in examining, in other words, whether gender inequality in public transfers is likely to narrow or widen for younger cohorts in comparison to older cohorts, a finding that bears implications for the future.

The remainder of this paper is structured as follows. Section 2 describes a general profile of gender inequality and recent reforms in public transfer programs in China, which serves as a background for understanding the analytical results of this study. Section 3 introduces the methodology and data used for this study. Section 4 presents the main results of our analyses. Section 5 discusses our results and the implications of our study for future gender equality in China.

2 Changing Contexts of Gender Inequality and Public Transfers

2.1 Changing patterns of China's gender inequality

China's hyper economic growth over the last three decades has taken place at the same time as a number of other radical socioeconomic and demographic transitions have also unfolded. These transformations include a rapid increase in employment in the private sector, a large-scale privatization of state-owned enterprises, historically unprecedented rapid migration and urbanization, vast expansion in higher educational institutions, and a continued decline in fertility (Shu and Bian 2003, Wang 2011, Zhang and Hannum 2015). These transitions have generated unprecedented and unequal opportunities for both men and women, yielding a complex set of changes in gender relations.

Unlike most other societies, China's gender inequality emerges at the very beginning of life. The adoption of one-child policy in 1980 combined with strong son preference pushed sex ratio at birth in China to deviate from the biologically normal range of 103–106 (Coale and Banister 1994).³ Sex ratio at birth in China jumped from 107.6 in 1982 to 116.9 in 2000 and further to 118.1 in 2010 (Cai 2013). Sex ratio of children aged 0–4 in 2010 stood at the high of 119.1. Imbalanced sex ratio under age 5 was directly caused by the practices of sex-selective abortions, underreporting of female births, and also female infanticide (Chu 2001, Hull 1990, Peng and Huang 1999, Zeng et al. 1993), which indicate an unequal treatment for girls.

Gendered pattern of labor force participation has also undergone profound changes in the post-reform period. As shown in Figure 1, over the past two decades, labor force participation rates at ages 15–24 dropped dramatically for both male and female, mainly due to a rapid expansion in college enrollment (elaborated in the next section).⁴ Female labor force participation at prime working ages (25–49), however, declined at a much faster pace than that of males. Retreat of government protection on female employment and market transitions have been cited to account for this widening gender gap (Honig and Hershatter 1988, Li and Li 2008, Yao and Tan 2005). We also notice that females started to withdraw from the labor market in a significant volume about 10 years earlier than men, around age 50 versus 60, due to women's earlier retirement. In urban sector, legal retirement age for males is set at age 60, whereas it is set at age 50 for female enterprise workers and 55 for female government employees and state enterprise executives.

³Sex ratio at birth: male live births per 100 female live births.

⁴Data source: calculated from 1990, 2000 and 2010 population census

Gender inequality is not only reflected in labor force participation, but more importantly in employment industry and occupational type, which in the context of China is directly linked to eligibility for health insurance and pension benefits. As shown in Figure 2, between 1987 and 2010, there has been a massive retreat of labor force from farming among young cohorts for both men and women. However, gender gap was not ameliorated.⁵ A larger proportion of female labor force still engaged in farming than that of males in time points, and the gap got larger with the increase of age. In non-farming industries, despite very high female labor force participation under the command economy (Bauer et al. 1992, Croll 1983), women heavily concentrated in the collective sector, which offered significantly lower wages and fringe benefits (health care, pension and housing) than the state sector (Shu and Bian 2003, Whyte 1984). Merely 30.8% of workers in the state sector were women, in contrast to one half in the collectives in 1980.⁶ In the arena of political governance, women are still rarely seen and severely underrepresented. For example, only less than 15% of government organization and state enterprise heads were females in 1987, and the share was increased to only 25% in 2010, though the share was slightly higher among the heads aged 30s, approaching 30% in 2010.⁷

The arrival of the capitalist market economy has also been accompanied by a prevalent commodification of women's bodies (Farrer 2014, Otis 2009, Parish et al. 2007). The gender hierarchy within the family is still deeply rooted in Chinese society as in other East Asian countries, in spite of growing feminism fashion. Whereas the average numbers of working hours in paid work do not differ that much between women and men (44.9 versus 49.0 hours per week, according to China's 2008 Time Use Survey), women spend twice as much time as men on average, 20.6 versus 9.5 hours per week, on unpaid household work. Women's domestic burden and care responsibility, in turn, contribute to their pay penalty at the workplace as well (Cohen and Wang 2009; Qi and Dong 2015).

These selected facts portray a picture of continued gender inequality in China, particularly at infancy as indicated by imbalanced sex ratio, and at advanced ages as shown by women's earlier retirement, higher share of labor force in farming, and severe underrepresentation in important political positions. At the same time, we also take note of a number of positive changes that have occurred: female youths are more likely to continue with education, leave the farming sector, and be promoted to leaders in government and enterprises than 20 years ago.

2.2 Recent reforms in public transfer programs

China's state-led economic growth has led to an explosive growth in government revenue, which has increased at an annual rate roughly twice the GDP growth rate for nearly two decades. With increased fiscal power and heightened concerns over social inequality, the Chinese government has drastically expanded public transfer programs in education, health care and pension. Between 1993 and 2013, public spending in education outpaced the rate of economic growth, with its share of GDP rising from 1.9% to 3.7%. The share of public

⁵Data source: China Statistical Yearbook 1987 and 2010 census.

⁶Data source: China Statistical Yearbook 1982.

⁷Data source: China Statistical Yearbook 1987 and 2010 census.

health care expenditure of GDP rose slightly from 0.77% in 1993 to 0.82% in 2003, but then doubled to 1.69% by 2013.⁸

One of the most noticeable changes is in higher education expansion. In 1999, the State Council approved the Plan of Revitalizing Education in the Twenty-First Century proposed by the Ministry of Education to expand college enrollment (Yeung 2013). The program aimed at improving human capital, alleviating urban unemployment, and driving economic growth (Treiman 2013, Wu 2010). College annual enrollment rose sharply subsequently, from 1 million in 1998 to 6.3 million in 2009, and to over 7 million by 2014. Gross tertiary education enrollment ratio more than tripled, from 10.5% in 1998 to 37.5% in 2014.⁹ Of particular note has been a more dramatic increase in female enrollment than male enrollment. Female share of college students increased from 38% in 1998 to 52% by 2013.¹⁰ As indicated by Figure 3, back in 2000, men were more likely to attend or graduate from college than women for all age groups. In only one-decade time, gender gap significantly closed for cohorts aged below 30. Nearly 30% of female youths in early 20s attended college by 2010, even outpacing the share for males at the same age.

Parallel to increasing opportunities at the tertiary education level, mandatory public funding for nine-year compulsory education has also increased since 2001. By 2005, about one-third of students at compulsory education stage in western and central rural areas were waived of tuitions fees and received free textbooks. This program reached all rural students by 2007 and was extended to cover all urban students by 2008. With all of these endeavors, primary school education has achieved full coverage since early 1990s and enrollment rate in lower middle schools rose from 88.7% in 2001 to 100% by 2010.¹¹

China's government has also made major progresses in expanding public health insurance and pension coverage over the past ten years, especially for the rural population. Due to decades-long urban-rural segregation by *hukou* institution and urban-priority development strategy, nearly 80% of rural residents lacked health insurance before 2003 (Wagstaff et al. 2009), and over 90% of rural elderly did not have any pension in 2007 (Shen and Williamson 2010). In 2003, the government launched the New Cooperative Medical Scheme (NCMS) in rural areas, which spread at an extraordinary speed and benefited 96% of rural residents by 2010. New Rural Pension scheme was first piloted in 320 rural counties (about 16% of total) in 2009, then expanded to 838 counties in 2010, and covered nearly all rural counties by 2012 (Cheng et al. 2015b). The rural insured are eligible for pension at the age of 60. Monthly pension benefit is comprised of a flat basic pension payout at 55 RMB, subsidized by government and certain amount from individual pension account.¹²

Despite these progresses in establishing a universal social safety net, both public health insurance and pension system remain highly fragmented in China, varying by urban-rural residence and employment type (Lin et al. 2009, Liu and Zhao 2014, Pozen 2013). As noted,

⁸Data source: China Health and Family Planning Statistical Yearbook 2015.

⁹Data source: China Educational Statistics Yearbook 2013.

¹⁰Data source: Educational Statistics Yearbook of China 2013.

¹¹Data source: China Educational Statistical Yearbook 2012.

¹²In some provinces, the monthly basic pension could be higher than 55 RMB if local government provides higher subsidies. For example, the monthly basic pension in Beijing was 280 RMB in its first year (Cheng et al. 2015b).

rural residents are participating in the New Cooperative Medical Scheme and the New Rural Pension Scheme. Urban residents without formal employment, including children, students, the self-employed and unemployed, are covered under the Urban Resident Basic Medical Insurance (URBMI) and Urban Resident Pension Scheme.¹³ Urban enterprise workers are entitled to Urban Employee Basic Medical Insurance (UEBMI) and Urban Enterprise Pension Scheme. Civil servants, about 40 million, are enrolled in separate health insurance and pension scheme. Reimbursement formula and benefits under the schemes for urban workers, particular for civil servants, are much more generous than those for the rural population and unemployed urban residents. For example, inpatient reimbursement rate stood at 68.2% for UEBMI on average in 2010, in contrast to only 47.9% for URBMI and 43.9% for NCMS (Yip et al. 2012).

A series of reforms in public education, health care and pension programs mentioned above are anchored in providing equitable access and reducing social stratification, whereas gender issues do not receive adequate attention in these reforms and their gendered implications remain unclear.¹⁴ The changes in public transfer programs and in gender relations form the context of our examination of gendered implications of public transfer programs, to which we turn below.

3 Analytical Approach and Data Sources

To understand and analyze the benefit incidence of public transfers by gender and age, we adopt the National Transfer Account method (NTA, Lee and Mason 2011). The NTA method, which has been widely applied in over 40 countries, captures a fundamental feature of the contemporary societies: the economic lifecycle. At working ages, people produce more than they consume; while at young and old ages, they consume more than they could earn through labor, thus generating a lifecycle deficit. Essentially, the national transfer flow account is based on the following identity.

$$C(x) - Y^L(x) = \tau(x) + Y^A(x) - S(x)$$

The lifecycle deficit at age x , or the excess of consumption $C(x)$ over labor income $Y^L(x)$, can only be financed through two economic mechanisms: net transfers $\tau(x)$ and asset-based reallocations, which equals to asset income, $Y^A(x)$, net of savings $S(x)$. The equation holds for both per capita and aggregate levels. Except for labor income, economic flows can be further disaggregated by sector, such as separating transfers by private versus public transfers.

We focus in this study on three major types of public transfers, transfers for education, health care and pension, to fill up the gap between consumption and labor income. These transfers not only affect gender inequality, but also exhibit generational imbalances. For

¹³Urban Resident Basic Medical Insurance was launched in 2007 and coverage rate approached 92.9% in 2010 (Yip et al. 2012). Urban Resident Pension System was newly introduced in 2011.

¹⁴Compulsory education is an exception. For compulsory education, there is a strong gender component, with all levels of government emphasizing gender equity in access to primary and lower middle schools in China.

instance, the government mainly provides schooling to children, pensions to the elderly, and health care to everyone, especially the elderly.

NTA estimation is drawing on both macro-level and micro-level data, to estimate cross-sectional age profiles for a single year. Macro data from the System of National Accounts, or government administrative records and financial statistics, are used to estimate economy-wide aggregates, such as government spending on education, health care and pension. Micro data, obtained from the 2010 wave of China Family Panel Studies (CFPS), are used to estimate age-specific per capita economic flows. CFPS, a nationally representative household survey, has been conducted once every two years since 2010. The survey questionnaire consists of intergraded modules for rural and urban respondents, and the survey gathers rich information on household structure, employment and marriage history, income and expenditures, and social security benefits etc. (Xie 2014). The 2010 survey, covering 25 out of 31 provinces in China, interviewed 14,798 households with a sample of 42,436 household members. As shown in Table 1, the female subsample of CFPS is slightly older than male sub-sample, due to imbalanced sex ratio at young ages and also to longer female life expectancy.

Specifically speaking, our estimation strategy contains three steps, largely mirroring the method adopted by Turra et al. (2011) for their study of Brazil and Chile. First, we divide CFPS sample by gender and obtain initial estimates of age-specific per capita values for males and females. Age-specific per capita public education transfer is obtained by combining public cost per student by education level from government administrative records, with age- and level-specific enrollment rate in public schools estimated from the CFPS sample. Age profile of public pension transfer is constructed from survey responses on pension benefits received in the past year. Estimating age profile of public health care transfers is more complicated and more subject to error (Mason and Lee 2011). Public transfers for health care in NTA include not only health care provided by government, but also health care purchased by individuals and reimbursed through public health insurance programs (United Nations Population Division 2013). The per capita age profile of reimbursed health expenditures is estimated using the CFPS sample. The age-specific inpatient and outpatient service use as well as public cost per hospital visit, used to estimate the age profile of government-provided health care, however is available neither from the CFPS nor from government records. Instead, we construct age profile of out-of-pocket medical expenditures using the CFPS data to substitute for service utilization, with the assumption that medical expenditures are proportional to utilization rates. These two age profiles combined generate the age profile of public health care transfers.

The second step is to smooth age profiles. Most age profiles are smoothed using local regression to reduce noises except for education, because age profiles of public education transfers contain many discontinuities, which are not random but are the product of specific ages of entering and leaving schools (United Nations Population Division 2013).

The last step is to adjust the smoothed age profiles (also non-smoothed for education) proportionately to match the aggregate total for each type of public transfer. National aggregate total, from government financial statistics, is divided between men and women.

Aggregate public transfers at each age for men (or women) are calculated as the product of the per capita values and the male (or female) population at each age. Aggregate public transfers for males summed over all ages are then compared with corresponding aggregate totals for men, and finally the original smoothed age profiles are adjusted upwards or downwards.

4 Gender Inequalities in Benefiting from Public Transfers

4.1 Public Education Transfers

Our investigation starts at examining age distributions of public education transfers by gender. In general, education transfers are evenly distributed among boys and girls on the per capita basis, as shown in Figure 4. Due to the active enforcement of free compulsory education, male and female enrolment rates in primary and junior high schools reached virtually 100% by 2010. Even though senior high school education is not compulsory, the progression rate from junior high schools to senior high schools also doubled from 42.8% in 2000 to 82.5% in 2010.¹⁵ The peak of education transfers occurs at ages 14–15, resulting from both universal enrollment and high public cost per student at the stage of junior high education.¹⁶

Of particular importance is that females receive almost the same transfers as males at the tertiary education level. Tertiary education in China is a dual system, consisting of three-year vocational colleges (*zhuanke*) and four-year academic colleges (*benke*). Overall, female enrollment in tertiary education surpasses that of men in the CFPS sample, but women have a slightly lower enrollment in academic colleges and a higher enrollment in vocational colleges than men, the same pattern as documented by Yeung (2013) using another national household survey in 2008. Public education cost per vocational college student is only about one half of the cost per academic college student. That accounts for the very modest gender difference in transfers at ages 18–22.

A number of factors contribute to the emerging gender parity in education in China. The proportion of quota in social sciences and humanities has increased after college expansion, which tends to favor female students (Yeung, 2013). In addition, college admission has been shifting from primarily merit-based in the planned economy to exam-oriented in the market economy (Li et al. 2012, Yeung 2013). Girls are found to outperform boys throughout primary and middle schools (Lai 2010), and thus they have increasing competitiveness in college entrance examination. Such a pattern is widely observed in the United States, South Korea and other settings in recent years (Buchmann and Diprete 2006, Goldin et al. 2006, Shavit et al. 2007). Last but not the least, three-decade long enforcement of one-child policy has also made a contribution. Being the only girl in the family removes the potential competition from another child, especially a boy, for resources, and thus the gender gap between parental investment in son's and daughter's education has significantly narrowed (Fong 2002, Lee 2012, Tsui and Rich 2002, Veeck et al. 2003).

¹⁵Data source: China Statistical Brief 2014.

¹⁶Public education cost per junior high school student in China was about 30% higher than that per primary school student, 13% higher than that per regular (academic) senior high school student in 2010 (China Education Statistical Yearbook 2011).

Unlike the patterns seen at the per capita level, gender differential in public education expenditure at aggregate level (per capita values multiplied by population size) reveals a gender bias towards the males. As shown in Figure 5, at young ages, boys receive a larger share of education transfers than girls, because sex ratio at birth has escalated since the early 1980s and the number of male teenagers is larger than that of females. There is an evident bulge at age 20 for both men and women on aggregate profiles, due to higher public cost per college student and a larger cohort size. China's total fertility rate hit the replacement level (2.1 children per couple) in 1990 and has kept decreasing ever since. Thus the cohort aged 20 in 2010 is larger than any younger cohorts who were born after 1990.

4.2 Public Health Care Transfers

Age profile of per capita public health care transfers exhibits a J-shaped curve for both males and females, as shown in Figure 6, and they resemble the age pattern of mortality rate in China. At one end of the lifecycle, transfers are elevated below age 10, particularly at infancy. At the other end, health care transfers rise after age 50. An average person aged 75 receives transfers nearly twice as high as that received by an average 50-year-old person. Such a pattern is also revealed in developed countries and some developing countries such as Brazil and Chile (Tung 2011, Turra et al. 2011).

Gender differential in public transfers for health care is hardly noticeable from age 20 to 60 at the per capita level. In childhood, however, health care transfers are biased against girls, partially due to a traditional son preference in China. Unlike compulsory education, public health care is neither compulsory nor free even if the child is insured. Researchers have found that girls from non-single-child families, mostly in rural areas with a stronger son preference, are significantly disadvantaged (Ren et al. 2014), and may get reduced access to public health care.¹⁷

Gender gap in health care transfers widens over age 60. For instance, public transfers to male elders aged 70 reach 1,481 RMB per person, 52 percent higher than the amounts transferred to their female peers. This is largely resulting from increased disparity in entitlement to health insurance programs among older cohorts. As introduced in the second section, health insurance eligibility is tied to an individual's residence and employment status (Strauss et al. 2012). Gender gap in employment type goes higher over age. As shown in Figure 2 earlier, only 15% of the female labor force aged 55–59 were engaged in non-farming sector in 2010, as compared with 37% for the male labor force. Among workers in non-farming sector, older men were much more likely to hold a position in state enterprises prior to retirement. This indicates that male elders have higher chances to participate in UEBMI, which covers a wider range of outpatient services and offers lower deductibles and co-payments, especially for retirees than URBMI and NCMS.¹⁸ In particular, elders are found to have more elastic demand for health care than working age adults (Cheng et al.

¹⁷China's family planning policy is divided between urban and rural areas. In 19 provinces, 1.5-children policy is adopted in rural areas, allowing the couples to have a second child if the first child is a girl. In 5 provinces, two-children policy is applied in rural areas. Urban couples of Han race follow a strict one-child policy (Gu et al. 2007).

¹⁸UEBMI reimburses both inpatient and outpatient services, while URBMI and NCMS adopted in a majority of cities/counties only reimburse inpatient services and outpatient services for catastrophic diseases (Lei and Lin 2009). The deductibles are also much lower and reimbursement rates are higher for retirees than those for current employees under UEBMI. For example, under UEBMI in

2015a, Ringel et al. 2002). The more generous health insurance package not only induces higher reimbursement through insurance program, but also effectively encourages the elders to seek more public health care.

Aggregate health care spending for men is about 12 percent higher than that for women. In Figure 7, we present the comparison of public health care transfers by gender, weighted by population age distribution. Escalating sex ratio at birth further exacerbates the gender differential at young ages. By contrast, gender gap over age 60 is significantly narrowing down, due to longer female life expectancy and thus a larger proportion of women surviving into old ages.

4.3 Public Pension Transfers

Gender differential in public pension transfers at the per capita level is pronounced, particularly above age 75, as shown in Figure 8. Similar to health care transfers, women's disadvantage in pension benefits results from their employment histories that determine what kind of pension scheme they are entitled to. As noted earlier, a larger proportion of female elders were previously employed in agriculture, in informal sectors or unemployed with no entitlement to public pensions before 2009.¹⁹ Even under the urban employee pension scheme or civil servants pension scheme, gender gap in pre-retirement earnings and occupational rankings also leads to differentiated pension benefits. A similarly wide gender gap in pension income has also been revealed in UK and Japan, a legacy of past employment norms and pension policies, though it is an issue that remains largely ignored by policymakers (Gin and MacIntyre 2013, Takayama 2014).

There are also several interesting contrasts between men and women in pension transfers. As shown in Figure 8, first, pension benefits for women aged in the late 50s are higher than those for men, as a reflection of earlier withdrawal from the labor market for urban females. As noted, urban female workers legally retire and are entitled to pension at the age of 50 or 55, while urban male workers need to wait until the age of 60. Second, pension benefits for men increase substantially over age. For instance, average annual pension benefits are 2,662 RMB for men aged 60, and get doubled by the age of 78. In a stark contrast, pension benefits received by women rise much more slowly over age and even decline at very senior ages, due to both the lower coverage rate and lower benefits per beneficiary among the oldest-old women. China's 2010 census data also showed that only one fifth of women aged 80 cited public pensions as their major financial source, in contrast to nearly 40% among men aged 80.

When combined with population age structure, a somewhat different gender profile emerges. In terms of aggregate pension benefits, both age profiles peak at around age 60 and then decline over age. Despite the noticeable difference in per capita pension benefits, aggregate

Shanghai, the deductible of outpatient service for the retirees ranges from 300 to 700 RMB depending on the age of retirees, while it is uniformly 1,500 RMB for current workers. The deductible of inpatient service ranges from 700 to 1,200 RMB for the retirees, as compared with 1,500 RMB for current workers. The reimbursement rate of inpatient service is 92% for the retirees and 85% for the current workers. The reimbursement rate of outpatient service could reach a high of 90% for retirees, while it does not exceed 70% for current workers.

¹⁹New Rural Pension System was initiated in 2009 and Urban Resident Pension System was launched in 2011.

pension spending is almost equal for men and women at ages above 60. Such a pattern is due to the fact that women outlive men, even though women have lower per capita pension benefits.

5 Discussions and Conclusion

This study contributes to the international comparative research on gender inequality in economic welfare, with a particular perspective on gender gap in benefiting from public transfers over the lifecycle. It also adds empirical evidences on the gendered implications of public transfer reforms in recent China, which has received little attention to our knowledge. Within the framework of National Transfer Account, we find mixed results of gender inequality in three major types of public transfers. Men and women equally take advantage of public education transfers, with females even surpassing males in college enrollment, whereas twenty years ago, women were lagged far behind men in progressing to high schools, let alone to colleges (Bauer et al. 1992). Health care transfers are evenly distributed between men and women in adulthood, but biased against females in infancy and even more pronounced at senior ages. Similarly, older men enjoy higher pension benefits than women, and the gender gap widens most notably at the very advanced ages.

With these three types of public transfers combined, we see a gender pattern of receiving public transfers that is both familiar and new. As shown in Figure 10, on one hand, it is familiar in the sense that as expected, gender gap remains substantial at ages above 60. The government spends 7,898 RMB per male person aged 80 and over annually, about 52% higher than the per capita transfers for females. The root of male advantage at old ages lies in their educational, occupational and earning privileges prior to retirement age, as well as in the fragmented design of health care and pension programs. Although the government has strived for expanding health insurance and pension coverage among disadvantaged groups (the rural, and the unemployed) over the past ten years, the stark disparity in generosity across different schemes, the entitlement of which is directly linked to residence and employment history, may exacerbate the existing gender gap in health care utilization and in economic well-being.

On the other hand, the gender pattern is new and inspiring because female youths are catching up and are receiving the same public transfers as males. The college expansion policy enacted since 1999 has allowed a significantly larger number of youths to attain tertiary education, especially females. In China, a tertiary education is a *golden ticket* for rural youth to gain an urban *hukou* status and for holding a professional, managerial or government position (Yueng 2013). The economic returns to colleges (including vocational and academic colleges) are estimated to be substantially larger than the returns to high schools (Li et al. 2012), and furthermore, the returns to education for females are even higher than those for males as documented in many studies (Ren and Miller 2012a, Ren and Miller 2012b, Wang 2013). Hence, gender-balanced public spending on education, especially on the tertiary education, would contribute to reducing gender gaps in labor market outcomes, and also in the entitlement to health insurance and pension benefits at later ages in the future.

In general, despite gender inequality persists or even deteriorates in some arenas since China's market-oriented reforms, as reflected in a faster decline in female labor force participation than that of males and in the lack of representation among leaders of government and state-owned enterprises, the gender-neutral pattern of public transfers for the young cohorts documented in this study offers promising signs for future gender equality. Recently, China's State Council has announced a goal to build a fair, unified and standardized pension system for its whole population before 2020. Following many years of delay, China took a firm step forward in 2014. Forty million civil servants can no longer count on a definite pension program with a high replacement rate, financed out of the general fiscal revenue. They are required to contribute 8 percent of their monthly salary into the state pension fund, and their pension payouts now depend on the length of employment, the amount of contribution, and the comparison of pre-retirement salary with local urban average wage. Their pension scheme now resembles the program for the urban enterprise workers. Such a policy shift helps narrow the gender gap in pension benefits, which is particularly pronounced among the current old cohorts.

Our study, while presenting abundant evidences on benefit incidences of public transfers by gender, should be interpreted with caution. First, both our data and the NTA method require a variety of assumptions in the calculations. Accordingly, the results should be taken as indicative rather than definitive. Second, public transfers for health care are determined by both supply and demand factors. Male elders are found to receive more health care transfers than female peers, but it is unclear whether this is due to their higher demand for medical services. Even though older women enjoy higher chances of survival, they are a vulnerable group with higher risks of cognitive impairment and functional disability (Zeng et al. 2003, Zhang 2006). Hence, if female elderly have a stronger demand than males, then the real gender inequality in health care transfers is even more severe than revealed in this paper. Third, this paper only investigates the inflows of public transfers while it does not take into account of outflows, such as taxes and social security contributions. Male elderly receive more pension benefits and health care transfers at present, but they also paid higher taxes and premiums when they were working. In that sense, the higher benefits received by male elderly are, to some extent, a delayed remuneration for their contributions in the past, and thus gender gap at old ages is actually smaller. However, it should be noted that the contributory component of urban enterprise employee pension was not introduced until 1997, and of civil servants pension was newly inserted in 2014, thus the current older cohorts are largely beneficiaries of a pay-as-you-go system. Nevertheless, a careful examination of age distributions of public transfer outflows by gender is warranted to present a complete picture of gender gap in net public transfers.

As noted, gender stratification persists in all societies and complete gender equality is not achieved overnight. With growing advantage in female educational attainment and a gradual unification of social security system, China can expect to have a smaller gender gap, at least in benefiting from public transfers, in the coming years.

Acknowledgments

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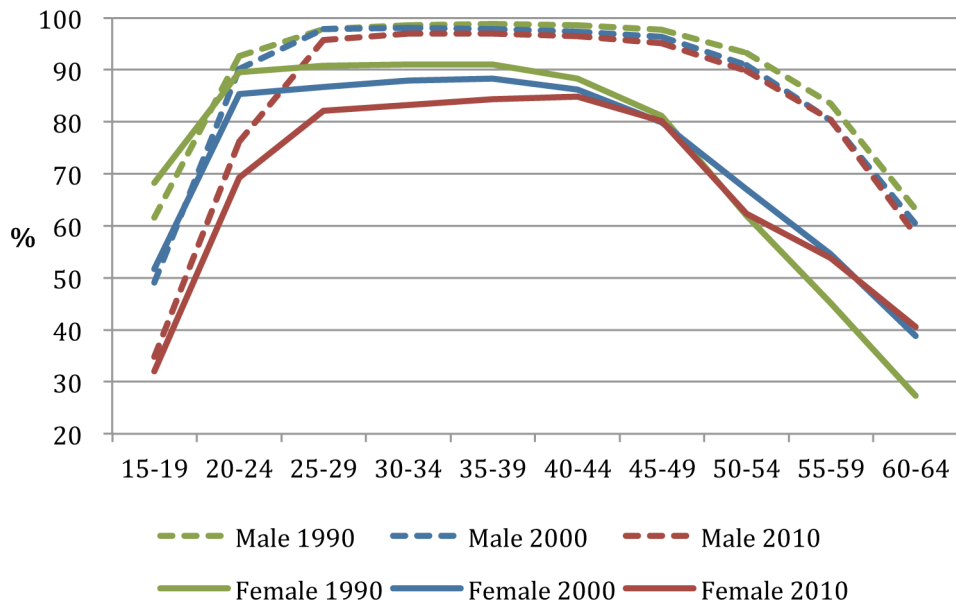


Figure 1. Labor force participation rate by gender and age, 1990–2010
Source: Authors’ calculations based on data from 1990, 2000, 2010 census.

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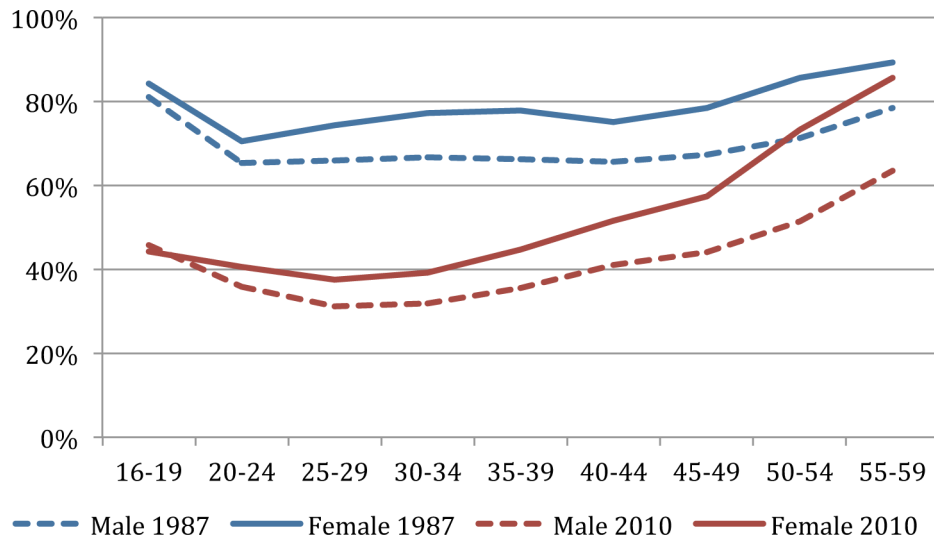


Figure 2. Share of labor force in farming by gender and age, 1987 and 2010
Source: Authors' calculations based on data from China Statistical Yearbook 1987 and 2010 census.

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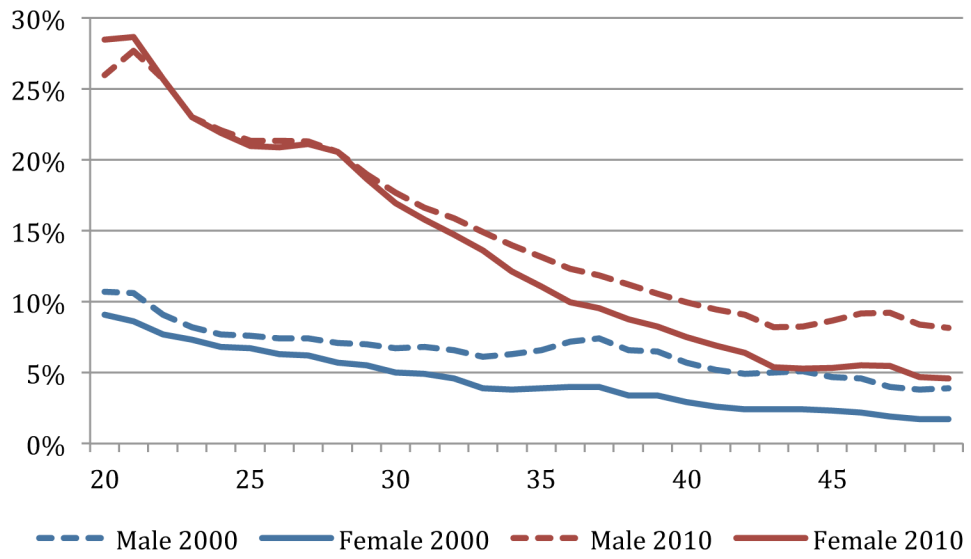


Figure 3.
 Share of those with college education by gender and age, 2000 and 2010
Source: Authors' calculations based on data from 2000 and 2010 census.

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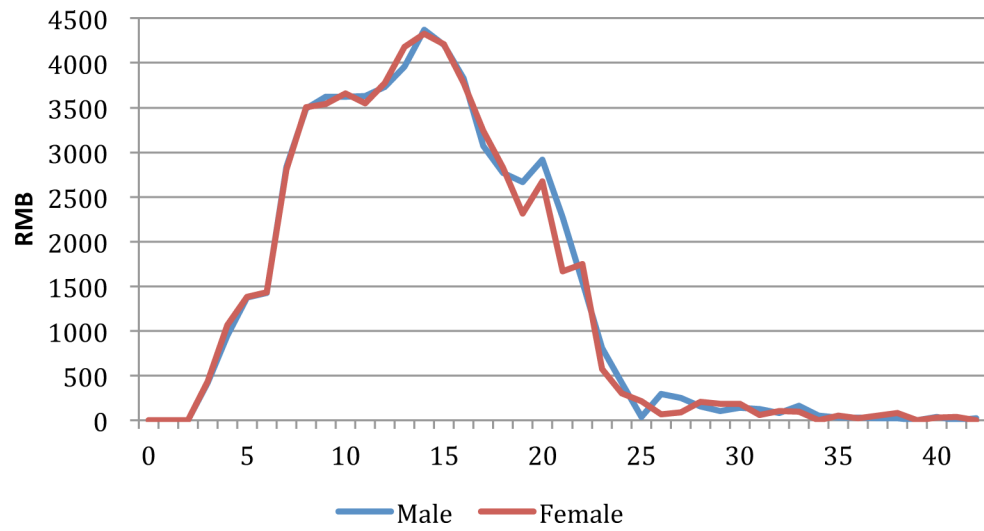


Figure 4.
Per capita public education transfers by gender and age, 2010
Source: Authors' calculations based on data from 2010 wave of China Family Panel Studies and government statistics.

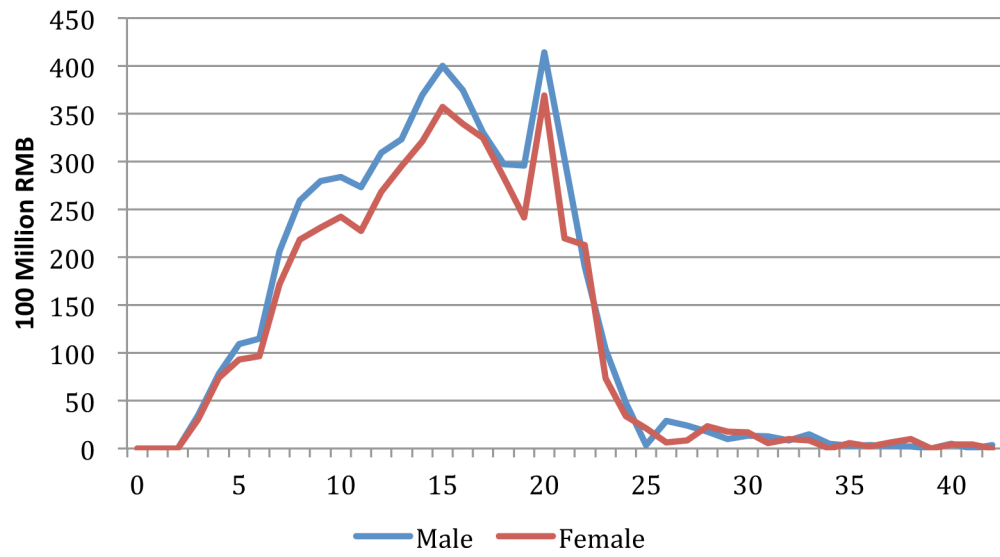


Figure 5.
 Aggregate public education transfers by gender and age, 2010
Source: same as Figure 4.

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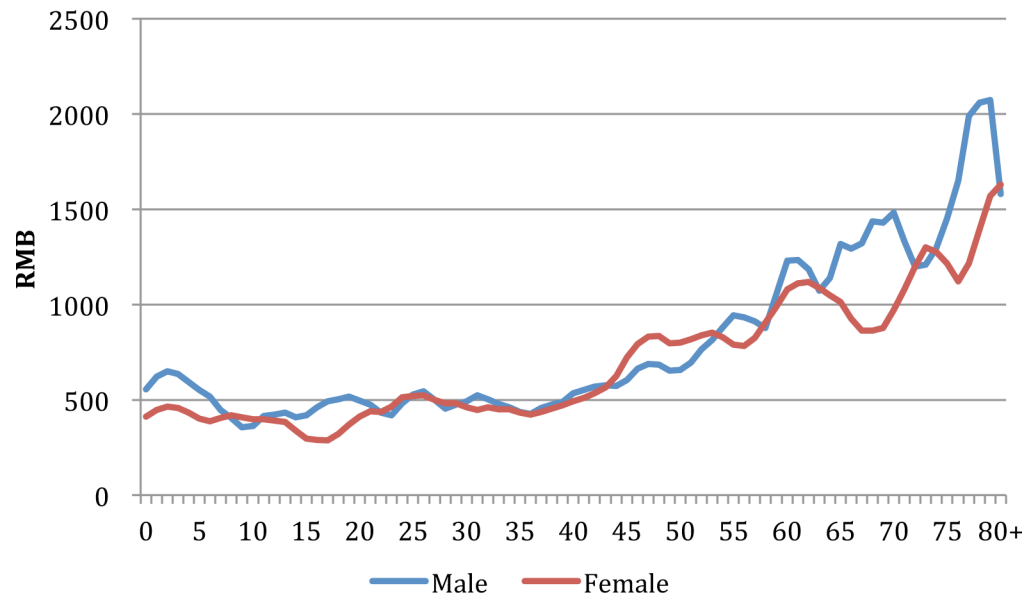


Figure 6.
 Per capita public health care transfers by gender and age, 2010
Source: same as Figure 4.

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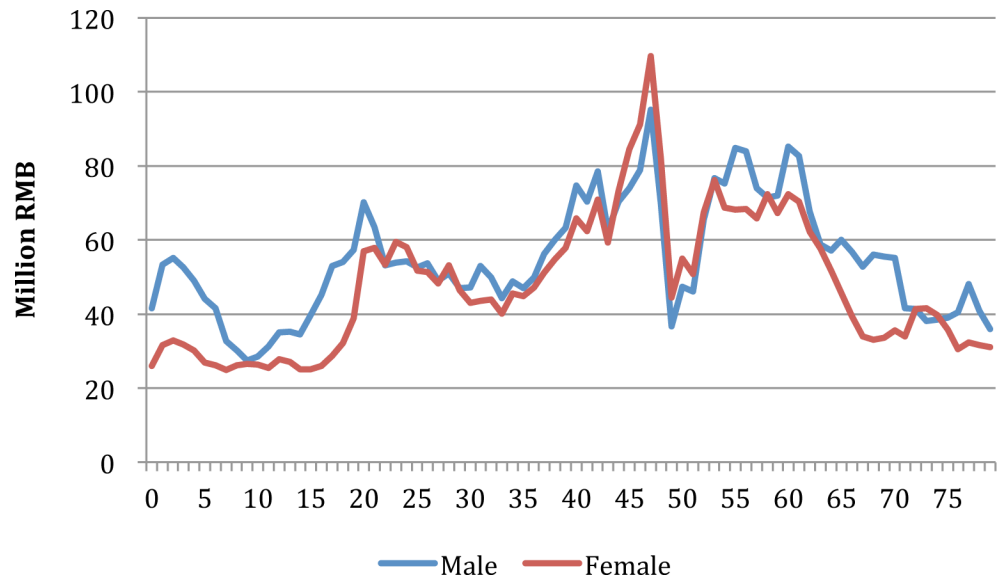


Figure 7.
 Aggregate public health care transfers by gender and age, 2010
Source: same as Figure 4.

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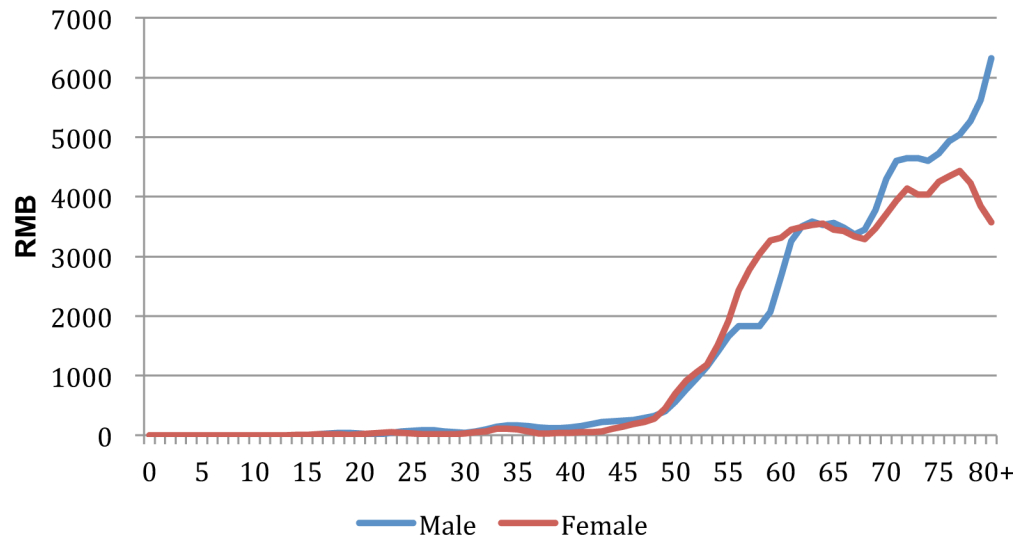


Figure 8.
 Per capita public pension transfers by gender and age, 2010
Source: same as Figure 4.

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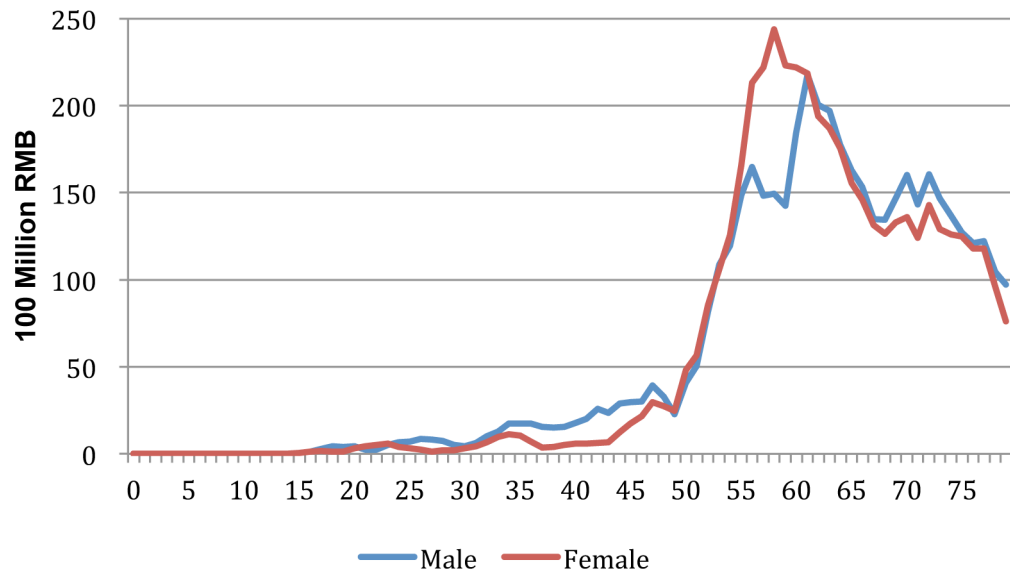


Figure 9.
 Aggregate public pension transfers by gender and age, 2010
Source: same as Figure 4.

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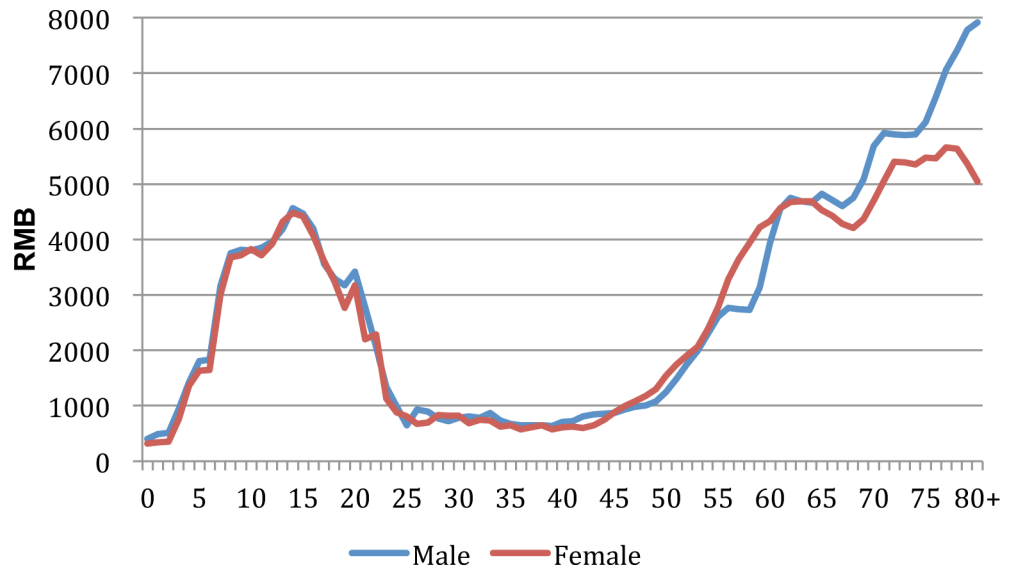


Figure 10.
 Per capita total public transfers by gender and age, 2010
Source: same as Figure 4.

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Table 1

CFPS sample distribution by gender and age group

Age group	Male	Female	Total
0–15	4736 (22.6%)	4224 (19.4%)	8960 (21.0%)
16–64	13943 (66.5%)	15080 (69.4%)	29023 (68.0%)
65+	2282 (10.9%)	2416 (11.1%)	4698 (11.0%)

Note: Percent distribution in parentheses.

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