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Abstract

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Socio-economic determinants and outcomes of health capital's accumulation among middle-aged and older people: Focusing on Japanese long-term care policy

by Rong FU

This dissertation investigates two health-related topics among middle-aged and older people. The first topic concentrates on the process of health capital accumulation. Specifically, I show how health capital is accumulated through investment process when people take health depreciation into account; and how socio-economic status would improve people's health in their later life. The second topic turns to a perspective of policy arrangements for middle-aged and old people with poor health and being in care needs. More concretely, I estimate how the public long-term care insurance (LTCI) benefits frail older people and their family caregivers in terms of stimulating the caregivers' labor force participation (LFP). Besides, I explore how moral hazard drives up public expenditures on LTCI. The findings have comprehensive insights into contributions and challenges the LTCI faces, providing valuable implications for policy arrangements. The dissertation is arranged as below.

After a general introduction of background and motivation of the thesis in chapter 1, I show the process of health capital accumulation by extending the Grossman health capital model in chapter 2. I relax the original assumption of exogenous health depreciation rate to model the direct and indirect channels through which people

improve their health through health investment. I confirm that the marginal cost of health supply decreases when the depreciation rate is an endogenous function of health investment and that the marginally reduced cost is greater for people in later life stages. I also find that the indirect channel—depreciation rate reduction—is more effective for people in good health; and the direct channel—the classical Grossman model—is more powerful for those in poor health.

Chapter 3 investigates the marriage protection and selection effects on health among middle-aged and old people. I utilize positive self-rated health to present subjective health status and lifestyle diseases to present objective health status. Using dynamic panel data approach to control for endogeneity issue, I find that being married does protect respondents' subjective health, in terms of a higher probability of self-ratings of "very good" or "good" health statuses. Nonetheless, I find that marriage deteriorated their objective health in terms of a higher probability of having lifestyle diseases. Regarding the selection effect, better subjective health selects people into marriage, but the influence is fairly modest. Objective health status also selects people into marriage, where the effect is positive for women but negative for men. The findings show relationship between marriage and health, which would have substantial implications for health-related policy arrangements for middle-aged and old people in Japan.

Chapter 4 shows benefits of social network involvement on improving mental health among middle-aged and old people. I apply the random-effects generalized least squares method to estimate the effect of one- and two-year lagged values for involvement in social networks on psychological distress. I utilize Kessler 6 (K6) to measure psychological distress and stratify social network involvement into three layers: inner (well-established friendship ties and participating in hobby activates), intermediary (neighborly ties), and outer (involvement in community activities). I find negative associations between all three layers and K6, with the strongest association being for the inner layer. I further observe that one-year lagged involvement in the inner and intermediary layers lead to lower K6. However, the protective influences of social networks generally diminish over time. In addition, the protection of social network involvement on mental health is stronger for women than for men, and involvement in social networks is especially important for improving mental health among people

with psychological distress. These findings are valuable for policymaking to prevent mental health deterioration.

Chapter 5 evaluates a spillover effect of the LTCI as a policy to stimulate family caregivers' LFP. I apply difference-in-difference propensity score matching method to estimate the spillover effect in two periods: before and after the introduction of the LTCI in 2000, and before and after its major amendment in 2006. The results show that the LTCI introduction has positive spillover effects on family caregivers' LPF, and the effects varies by gender and age. In contrast, the amendment generally has negative spillover effects on LFP of family caregivers. The findings highlight the importance of such spillover effect of LTCI, since expanding labor market supply to sustain the economy would be a priority for the aging world in the coming decades.

Chapter 6 documents the presence and magnitude of moral hazard in the LTCI market. I use 120-month claim records covering the entire market. By applying propensity score matching method, I extract subsample being as-good-as random for identifying the moral hazard. The results show an 0.98-million-yen higher lifetime costs of LTCI with respect to a reduction in co-payment rate from 10% to zero. Morally motivated insureds require a broader range of services and have a longer days of utilization than others. In addition, I confirm that the magnitude of moral hazard in LTCI is larger than what studies observed in health insurance markets. Great predictability of care needs, combination of unfavorable health and cautiousness of insureds, and the highly price-sensitive measurement for moral hazard are possible explanations. I also verify that moral hazard correlates positively with ex-ante health risks. The positive correlation indicates a larger moral hazard in public LTCI than what private LTCI observed, since mandatory enrollment may enlarge the ex-ante risks. I lay emphases on policies that guide insureds to have efficient service utilization. Policies reducing ex-ante health related risks would also be effective to restrict moral hazard.

The last chapter concludes and outlines the intended contributions of this dissertation.

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