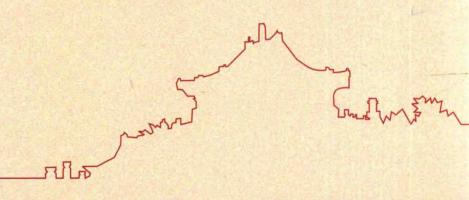
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Changing of Age Structure and Economic Growth of China: Theoretical Models and Policy Suggestions

李魁 著





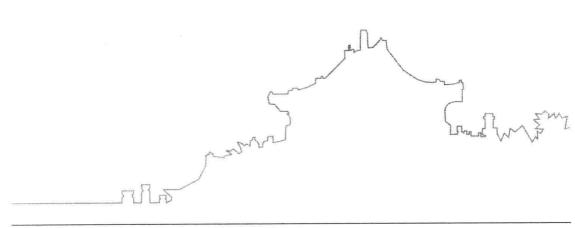
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总序

创新是一个民族进步的灵魂,也是中国未来发展的核心驱动力。研究生教育作为教育的最高层次,在培养创新人才中具有决定意义,是国家核心竞争力的重要支撑,是提升国家软实力的重要依托,也是国家综合国力和科学文化水平的重要标志。

武汉大学是一所崇尚学术、自由探索、追求卓越的大学。美丽的珞珈山水不仅可以诗意栖居,更可以陶冶性情、激发灵感。更为重要的是,这里名师荟萃、英才云集,一批又一批优秀学人在这里砥砺学术、传播真理、探索新知。一流的教育资源,先进的教育制度,为优秀博士学位论文的产生提供了肥沃的土壤和适宜的气候条件。

致力于建设高水平的研究型大学,武汉大学素来重视研究生培养,是我国首批成立有研究生院的大学之一,不仅为国家培育了一大批高层次拔尖创新人才,而且产出了一大批高水平科研成果。近年来,学校明确将"质量是生命线"和"创新是主旋律"作为指导研究生教育工作的基本方针,在稳定研究生教育规模的同时,不断推进和深化研究生教育教学改革,使学校的研究生教育质量和知名度不断提升。

博士研究生教育位于研究生教育的最顶端,博士研究生也是学校科学研究的重要力量。一大批优秀博士研究生,在他们学术创作最激情的时期,来到珞珈山下、东湖之滨。珞珈山的浑厚,奠定了他们学术研究的坚实基础;东湖水的灵动,激发了他们学术创新的无限灵感。在每一篇优秀博士学位论文的背后,都有博士研究生们刻苦钻研的身影,更有他们的导师的辛勤汗水。年轻的学者们,犹如在海边拾贝,面对知识与真理的浩瀚海洋,他们在导师的循循善

诱下,细心找寻着、收集着一片片靓丽的贝壳,最终把它们连成一串串闪闪夺目的项链。阳光下的汗水,是他们砥砺创新的注脚;面向太阳的远方,是他们奔跑的方向;导师们的悉心指点,则是他们最值得依赖的臂膀!

博士学位论文是博士生学习活动和研究工作的主要成果,也是学校研究生教育质量的凝结,具有很强的学术性、创造性、规范性和专业性。博士学位论文是一个学者特别是年轻学者踏进学术之门的标志,很多博士学位论文开辟了学术领域的新思想、新观念、新视阈和新境界。

据统计,近几年我校博士研究生所发表的高质量论文占全校高水平论文的一半以上。至今,武汉大学已经培育出 18 篇"全国百篇优秀博士学位论文",还有数十篇论文获"全国百篇优秀博士学位论文"。位于"独名奖",数百篇论文被评为"湖北省优秀博士学位论文"。优秀博士结出的累累硕果,无疑应该为我们好好珍藏,装入思想的宝库,供后学者慢慢汲取其养分,吸收其精华。编辑出版优秀博士学位论文文库,即是这一工作的具体表现。这项工作既是一种文化积累,又能助推这批青年学者更快地成长,更可以为后来者提供一种可资借鉴的范式亦或努力的方向,以鼓励他们勤于学习,善于思考,勇于创新,争取产生数量更多、创新性更强的博士学位论文。

武汉大学即将迎来双甲华诞,学校编辑出版该文库,不仅仅是为百廿武大增光添彩,更重要的是,当岁月无声地滑过 120 个春秋,当我们正大踏步地迈向前方时,我们有必要回首来时的路,我们有必要清晰地审视我们走过的每一个脚印。因为,铭记过去,才能开拓未来。武汉大学深厚的历史底蕴,不仅仅在于珞珈山的一草一木,也不仅仅在于屋檐上那一片片琉璃瓦,更在于珞珈山下的每一位学者和学生。而本文库收录的每一篇优秀博士学位论文,无疑又给珞珈山注入了新鲜的活力。不知不觉地,你看那珞珈山上的树木,仿佛又茂盛了许多!

李晓红

中文摘要

不同年龄段人口的经济行为具有"异质性"。老年人口、少儿人口和劳动年龄人口的生产行为、储蓄行为、消费行为、投资行为等存在显著差异。那么,年龄结构变动必然通过影响一系列中介变量最终传递到经济增长上来。年龄结构变动所带来的影响是多方面、多层次、多维度的,既包括经济方面的影响,也包括社会方面的影响;既包括宏观层面的储蓄、消费、投资、经常项目差额等的影响,也包括微观层面的家庭结构变化、子女抚养、老年赡养等的影响。一个国家或地区属于"幼年型"、"成年型"还是"老年型"与这个国家的经济增长存在密切关系。但是,关于年龄结构变动与经济增长之间关系的全面系统研究,在国内仍然相对缺乏和薄弱。深入探讨年龄结构变动所引起的经济效应以及系统研究其传导机理,对于年龄结构明显变动以及即将发生重大转折背景下的中国经济增长具有重要政策含义。

年龄结构变动过程中,劳动力抚养负担减轻会形成一个有利于经济增长的极为重要的"结构性红利"——人口红利。人口红利是21世纪中国跨越式发展的动力,是全面建设小康社会的战略机遇期,是未来中国经济增长的源泉。探讨人口红利对经济增长的影响具有重要的理论价值和实践意义;探究如何充分地获取年龄结构变动所带来的这种结构性优势,对于中长期经济持续快速增长具有重要启示;如何利用人口红利积累的社会经济基础来应对未来的人口老龄化和人口负债也是亟需研究的重要课题。

论文着力探讨年龄结构变动以及因之带来的人口红利的宏观经济效应。内容主要围绕以下几方面展开:第一,构建年龄结构变动作用于经济增长的传导机制——储蓄(投资)机制、居民消费机制

以及净出口(经常项目差额)机制。第二,建立年龄结构与经济增长的宏观分析框架。一方面从国际视角分析"东亚奇迹"中人口转变的作用,另一方面构建空间面板模型分析人口红利对中国经济增长的影响以及其"外溢效应"。第三,提出利用年龄结构变动促进经济增长的战略和对策,主要围绕"后人口红利利用和挖掘战略"和"人口红利消减的替代与转换战略"两部分展开。全书共分为九章。

首先是导论。本章提出研究背景、研究意义以及探讨的问题, 阐述了研究思路、研究内容和框架设计,总结论文的创新之处,并 指出未来进一步的研究方向。

第一章是理论支撑和文献综述。首先本章对人口转变理论、生命周期理论、人口变动与经济增长理论进行了简要回顾。在此基础上,本章又分别从年龄结构作用于经济增长的理论研究、经验研究、最新进展以及研究评介等四个方面对国内外相关研究进行较为系统的梳理,为后文的深入分析提供基础和支撑。

第二章是研究基础。本章对年龄结构及人口红利的概念进行讨论和界定,对年龄结构变动情况以及这种变动作用于经济增长的内在机理做出初步探讨,提出了年龄结构变动作用于经济增长的"三条子传导机制"。

第三章分析年龄结构变动对储蓄率的影响。本章在引入年龄结构变量的生命周期储蓄函数基础上,采用两步系统 GMM 方法,通过工具变量解决变量的内生性影响,进而分析年龄结构变动对储蓄率的影响。经验研究发现,生命周期模型能够在一定程度上解释中国的高储蓄率。少儿抚养负担对储蓄率具有显著影响,并且在10%的水平上显著为负;老年赡养负担对储蓄率的影响为正,但并不显著;总抚养负担减轻带来的储蓄率提高主要是由快速下降的少儿抚养负担所引致。未来应密切关注抚养负担变化尤其是老年赡养负担变化如何影响居民储蓄以及因之可能发生的各种经济社会变化。

第四章分析年龄结构变动对居民消费率的影响。本章在提出 "三个假说"的基础上,利用我国30个省市区1990—2006年的面板 数据进行动态 GMM 估计。结果表明,少儿抚养负担对消费率存在显著影响,但老年赡养负担对消费率的影响并不显著。少儿抚养负担的减轻显著降低了东部和中部的消费率,但对西部地区的影响不显著。少儿抚养负担在全国水平上以及东、中部地区的快速下降是1990 年以来居民消费率持续向低振荡的重要原因之一。然而,随着少儿抚养负担下降空间的缩小,它对消费率的影响将逐渐趋弱,而老年赡养负担的变化对居民消费率的影响值得进一步关注。

第五章分析年龄结构对净出口贡献率的影响。本章首先提出年龄结构变动作用经常项目差额的"三阶段说"和传导机理,进而从国际面板数据和中国时序数据两个维度出发,采用混合估计、静态面板估计以及动态面板估计对年龄结构的这一影响进行实证。经验研究表明,抚养负担变化对经常项目变动具有显著的反向冲击,发达国家年龄结构对经常项目差额的影响主要通过老年赡养负担进行,而发展中国家(地区)和亚洲国家(地区)主要通过少儿抚养负担进行。长期而言,年龄结构变动带来的劳动力负担减轻将促使经常项目盈余。充分利用现有的经常项目盈余(贸易余额)或者说充裕的资本进行跨国投资,增加资本利得,是应对未来年龄结构老化的关键之举。

第六章分析了年龄结构变动对东亚经济增长的影响。首先通过构建人口转变指数刻画了东亚国家和地区人口转变的"不同步性"——三个梯队。在此基础上,引入空间矩阵 W 构建空间面板计量模型,对 1969—1996 年东亚经济起飞的历史数据进行经验分析。结果发现:人口转变显著地促使东亚经济起飞,而东亚的经济社会发展政策为利用人口转变创造了条件;少儿抚养负担和老年赡养负担变化均对东亚经济增长产生负作用,但在相同的变化幅度下,前者的影响小于后者。东亚经验对中国具有重要启示意义。

第七章对中国年龄结构变动和人口红利进行全面评价。本章评价了人口红利的动态性,并对区域之间、地区之间、国家之间的人口红利及抚养负担进行比较和预测,最后对人口红利的获取背景、经验以及不足等进行了探讨。

第八章对中国人口红利与经济增长的关系进行检验。基于

1990—2007 年 30 个省域单元的空间动态面板计量模型,本章分析了人口红利变化对经济增长的影响以及人口红利的"外溢效应"。结果发现,人口红利的显著增加促进了省域经济增长;东部存在显著的人口红利外溢,但中、西部的外溢效应不显著;从区际来看,东、中之间存在一定的空间"溢出效应",而其他区域之间均不显著。人口红利的出现显著促进了中国经济增长,但人口红利的"溢出"并未得到最有效的发挥。我国应创造人口红利的吸收条件,促进人口红利充分流动,适时选择延续人口红利。

第九章提出利用年龄结构变动促进经济增长的战略对策。一方面,应积极实施产业结构调整升级和经济增长方式转型战略、劳动力"全流通"与充分参与战略、老年市场参与战略、退休年龄延长战略、集中型抚养和赡养战略、人口红利应对人口负债战略,充分利用和挖掘"后人口红利"。另一方面,随着人口老龄化的发展,人口红利终将消失,应推进实施劳动力质量优势转变战略、"第二次人口红利"获取战略、人口红利消逝与退休年龄延长和计划生育政策调整相协调战略。

关键词: 经济增长; 年龄结构; 人口红利; 储蓄率; 居民消费率; 抚养负担; 人口红利外溢

Abstract

The economic behaviors of population groups of different ages are 'heterogeneous'. The production behavior, saving behavior, consumption behavior and investment behavior are significantly different between the senior, junior population group and work force. The variations of age structure will surely pass on to economic growth through a series of intermediate factors. The impacts of these variations are multi-dimensional, and on different aspects and levels, including economic impacts and social impacts; also include impacts on macro levels such as savings, consumption, investment and current account balance and impacts on micro levels such as family structure variation, children raising and aged parents support. Whether a country/region is 'juvenile' or 'adult' or 'aged' depends on the relationship with the economic growth of the country/region. However, systematic researches on the relationship between China's age structure variation and economic growth are still insufficient. We need to make thorough analysis and research on the economic effects of the age structure variation, especially the conducting mechanism between age structure variation and economic growth.

During the process of population age structure variation, the decrease of dependency load will form a very important 'structural dividend' to economic growth—the demographic dividend. Demographic dividend is the driving power of China's development in 21st century, the opportunity for building 'well-off society' and the headspring of future economic growth of China. There is much theoretical and practical value in researching the impact of demographic dividend on economic

growth. To fully exploit the structural advantage brought by age structure variation is an important inspiration for keeping the medium-and-long-term economic growing fast in future. How to use the social and economic foundation accumulated by demographic dividend to answer the future challenge of population ageing and demographic debt is also an important subject that needs to be researched.

Therefore, this thesis put emphasis on researching the age structure variation and the demographic dividend brought by it. The research is composed of the following parts: 1. Establish the conducting mechanism between population age structure variation and economic growth—saving (investment) mechanism, household consumption mechanism and net export (current account balance) mechanism. 2. Establish the macro analysis framework on population age structure and economic growth. Firstly we analyze the effects of population age structure variation in 'East Asia Miracle', then built the spatial panel model to analyze the impact of China's demographic dividend on economic growth and the 'spillover effect' of demographic dividend. 3. Put forward the strategy and policy suggestions about using age structure to promote the economic growth, including 'post demographic dividend exploitation strategy' and 'the replacement and transition strategy on the diminishing of demographic dividend. The whole thesis is composed of 9 chapters.

First is the introduction. This part explains the background of the research, research value and the subjects of the research. It also illustrates the methodology, the content and the framework of the research. Then we summarize the innovation of the thesis and propose the future research direction.

Chapter 1 is about the theory background and literature review. This chapter firstly gives a review to population transition theory, life cycle theory, population variation and economic growth theory. Then we give a systematic introduction about related researches at home and from abroad from 4 sides: the theoretic and empirical researches, the latest

developments and the evaluation.

Chapter 2 is the research foundation. This chapter defines the concept of population age structure and demographic dividend, gives a preliminary analysis on population age structure variation and the logical mechanism of its effect on economic growth, then presents the 'sub conducting mechanism' of the effect of age structure variation on economic growth.

Chapter 3 analyzes the impact of population age structure variation on household saving rate. On the basis of life-cycle saving rate function about population age structure variable, this chapter estimates with two-step system GMM method in which the endogenous effect of the variable is solved with instrumental variable, then analyzes the impact of population age structure variation on saving rate. Empirical research indicates that life-cycle model can explain the saving rate in China to some extent. The dependency load of raising children is significant to saving rate. The effect is negative on the level of 10%; The effect of the dependency load of aged people is positive but not significant; The saving rate increase caused by the decrease of general dependency load are mainly due to the fast decrease of the dependency load of raising children. In the future the dependency load (especially of aged people) variation should be closely monitored, so is its impact on saving rate and other social and economic changes.

Chapter 4 analyzed the effect of population age structure on house-hold consumption rate. On the basis of the 'three hypotheses', we use dynamic GMM estimator based on the data of 30 provinces of China from 1990 to 2006 to build provincial panel. The results suggest that the burden of raising children significantly reduces the rate of consumption, but the aged people dependency burden on it is not significant. It is also found that the reducing of the burden of children significantly drops the consumption rate in the eastern and central regions, but has little impact in the western region. The fast decrease of children raising burden in the

middle, eastern region and on nation level is an important reason for the continuously downward oscillation of household consumption rate since 1990. However, as the extent of the children raising burden decrease is diminishing, its impact on consumption rate will gradually get weaker, and the effect of the variation of aged people burden on consumption rate is worthy of further attention.

Chapter 5 analyzes the impact of age structure on net export. In this chapter, we first present the 'three phases' of how age structure variation affects the current account balance and its conducting mechanism. Then we estimate the impact of age structure with the methods of mixed estimation, static panel and dynamic panel. The results show that dependency ratio variation significantly affects the current account negatively. However, the impact of age structure on current account in developed countries is mainly through the elderly dependency while it is primarily through the children dependency in developing countries (regions) and Asian countries (regions). The labor load alleviation brought by age structure variation affects the current account surplus by greatly stimulating net export. Fully exploiting the current account surplus (trade surplus) by invest internationally is of great strategic importance to answer the challenge of the ageing of population.

Chapter 6 analyzes the impact of age structure variation on the economic growth of East Asia. First we illustrate the demographic transition of the nations and regions of East Asia by establishing the demographic transition index. On basis of the index we build the spatial panel model and empirically analyzes the take-off of East Asia from 1969 to 1996. The results show that the demographic transition significantly promotes the take-off of East Asia, while the economic and social development policies in East Asia provide opportunities for the use of demographic transition effect. Both the dependency burden of children and the aged have negative effect on the economic growth in East Asia, but the influence of the former is weaker than the latter under the same range. The

experience of East Asia is of great value to China's future economic development.

Chapter 7 gives a full evaluation on China's age structure variation and demographic dividend. We evaluate the dynamic of demographic dividend, and then compare, predict the demographic dividend and dependency ration across regions and nations. At last we discuss the background, experience and lessons of the demographic dividend exploitation.

Chapter 8 analyzes the relationship between China's demographic dividend and economic growth. We build a dynamic spatial panel model with provincial data from 1990 to 2007 of 30 provinces and conduct empirical analysis. Some conclusions are found as follows. The demographic dividend promotes the provincial economic growth significantly. It also plays a significant role in the eastern, central and western regional economic growth, but there is obvious difference among them. The spillover of demographic dividend in the eastern is significant, but not in other regions. When observing among different regions, there are spillover effects in the eastern and central, while not significant in other regions. The demographic dividend promotes China's economic growth significantly but the 'spillover' of demographic dividend is not fully exploited. In the future we need to create favorable conditions to exploit demographic dividend, facilitate the flow of demographic dividend, and extend demographic dividend in time.

Chapter 9 is the policy suggestions on how to use age structure transition to promote economic growth. On one hand, we shall actively implement the strategy of industrial structure upgrade and transition of economic growth style. We also need to implement the 'full flow' and full participation of labor force strategy, aged citizen participation strategy, retirement age extension strategy, collective children raising and aged citizen support strategy and demographic dividend to tackle demographic liability strategy, fully exploit 'post demographic dividend'. On the oth-

er hand, with the development of population aging, population dividend will finally vanish. We need to implement labor quality advantage transition strategy, 'second demographic dividend' strategy and the strategy to coordinate the demographic dividend vanishing with retirement age extension and adjustment in birth control policy.

Key words: economic growth; age structure; demographic dividend; savings rate; household consumption; dependency load; spill-over of demographic dividend

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