



# Intergenerational Redistribution Policies of the 1990s and 2000s in Japan: Analysis Using Generation Accounting

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# Background of this paper

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- It is well known that the Japanese birthrate is declining very quickly and its population is aging very fast.
- In 2008, the birthrate was 1.37, while the ratio of elderly people to the entire population was 22.1%.
- This situation is causing an imbalance of the financial burden among generations, which many have attributed to a pay-as-you-go social security system.
- Useful way of quantifying this imbalance is the generational accounting method .



## Purpose of this paper

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- This paper analyzes the intergenerational redistribution policies of the 1990s and 2000s in Japan using generation accounting.
- This paper uses generational accounting to assess the extent of intergenerational redistribution not only at one point but also along a time series.



# Purpose of this paper

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- Previous studies have used generational accounting to estimate intergenerational burden imbalance between the present and the future generation for many countries.
- however, many of these studies have estimated those at one point.
  
- This paper uses generational accounting to assess the extent of intergenerational redistribution not only at one point but also along a time series.
- This enables retrospective viewing and allows us to consider the types of intergenerational redistribution policies that were actually taken.



## Purpose of this paper

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- Moreover, this paper uses both old and new population projections to calculate the lifetime net burden of the future generation.
- This makes it possible to investigate the effects of the downward revision of population projection on the lifetime net burden of the future generation.



# Estimation procedure

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- Our estimation procedures are basically same as Takayama, Kitamura, and Yoshida (1999) which conduct international comparison study of generational account.
- However, there is a different point: Takayaam, Kitamura and Yoshida (1999) estimate the extent of intergenerational redistribution at a certain point in time, on the other hand, this paper estimate those in time series.



# Data

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- “Annual Report on National Accounts”
- “Family Income and Expenditure Survey”
- “National Survey of Family Income and Expenditure”
- “Population Census”, and “Population Projections for Japan”
- The analysis period was from 1990 to 2007.



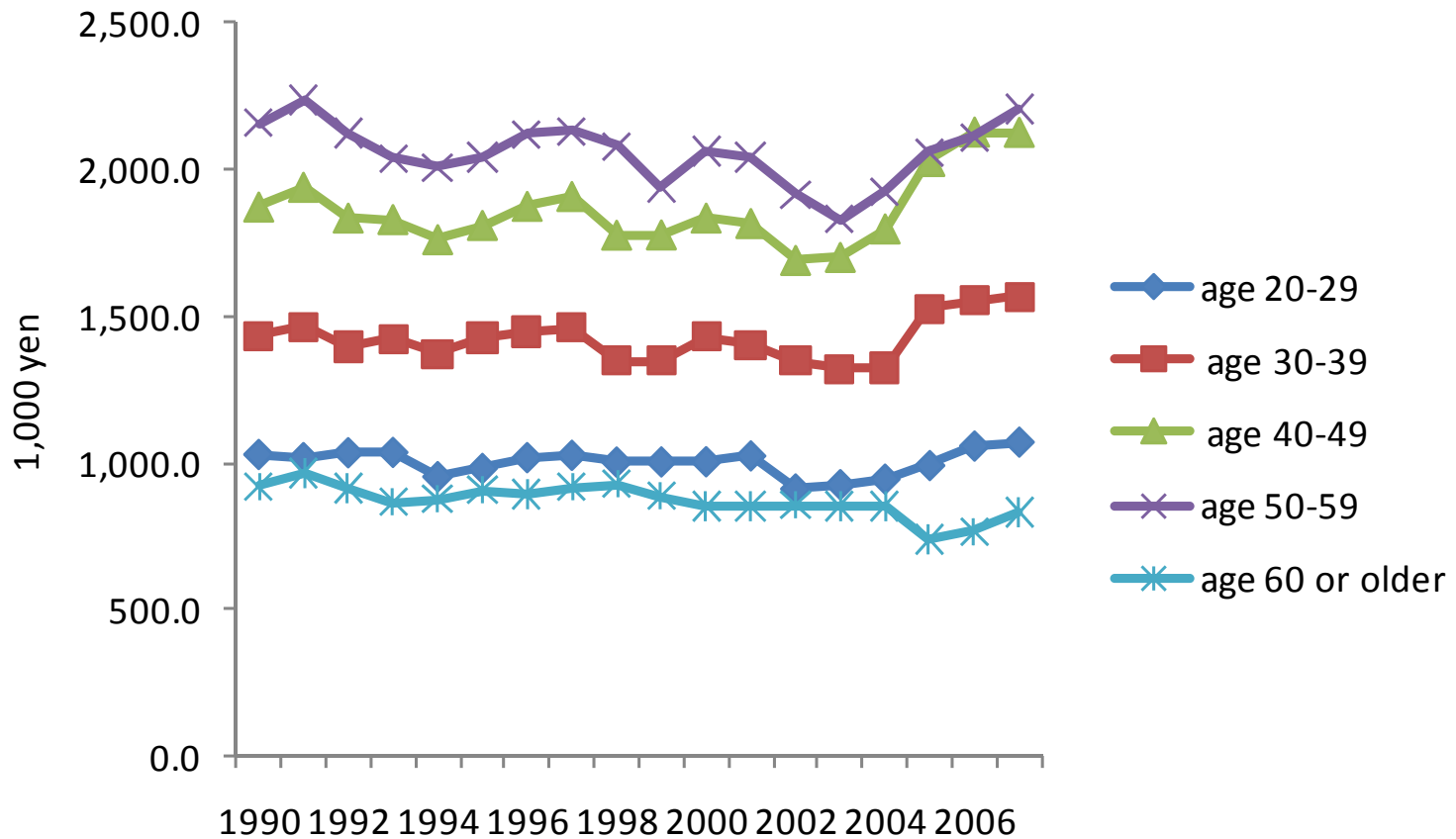
# Data

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- Due to data constraints in this survey, the existing generation is divided into five age brackets: 20 to 29, 30 to 39, 40 to 49, 50 to 59, and 60 or older.
- The National Survey of Family Income and Expenditure and Population Census are not conducted every year, so linear interpolation is performed for the years in which they were not conducted.
- Population Projections for Japan does not provide detailed prediction values for each age before 1990, making it difficult to estimate the future burden using the prediction values for the years before 1990; therefore, the analysis begins from 1990.
- Estimations are based on an economic growth rate of 2% and an interest rate of 4%.



# Figure 1: Burden Amounts per Person by Age Group





# Estimation results (Figure1)

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In the 1990s

- Burden amounts were constant in many age divisions, but slightly lower for those in their 50s.
- Direct tax revenue decreased in that decade, due to the reduction of income tax rates and the economic stagnation that resulted from the collapse of the bubble economy.
- On the other hand, social insurance premiums, which mainly consist of pension and medical insurance premiums, increased in every age division for every year throughout the 1990s.

\* The decrease in the direct tax burden offset the increase in social insurance premiums: therefore, burden amounts in many age division remained in the 1990s.



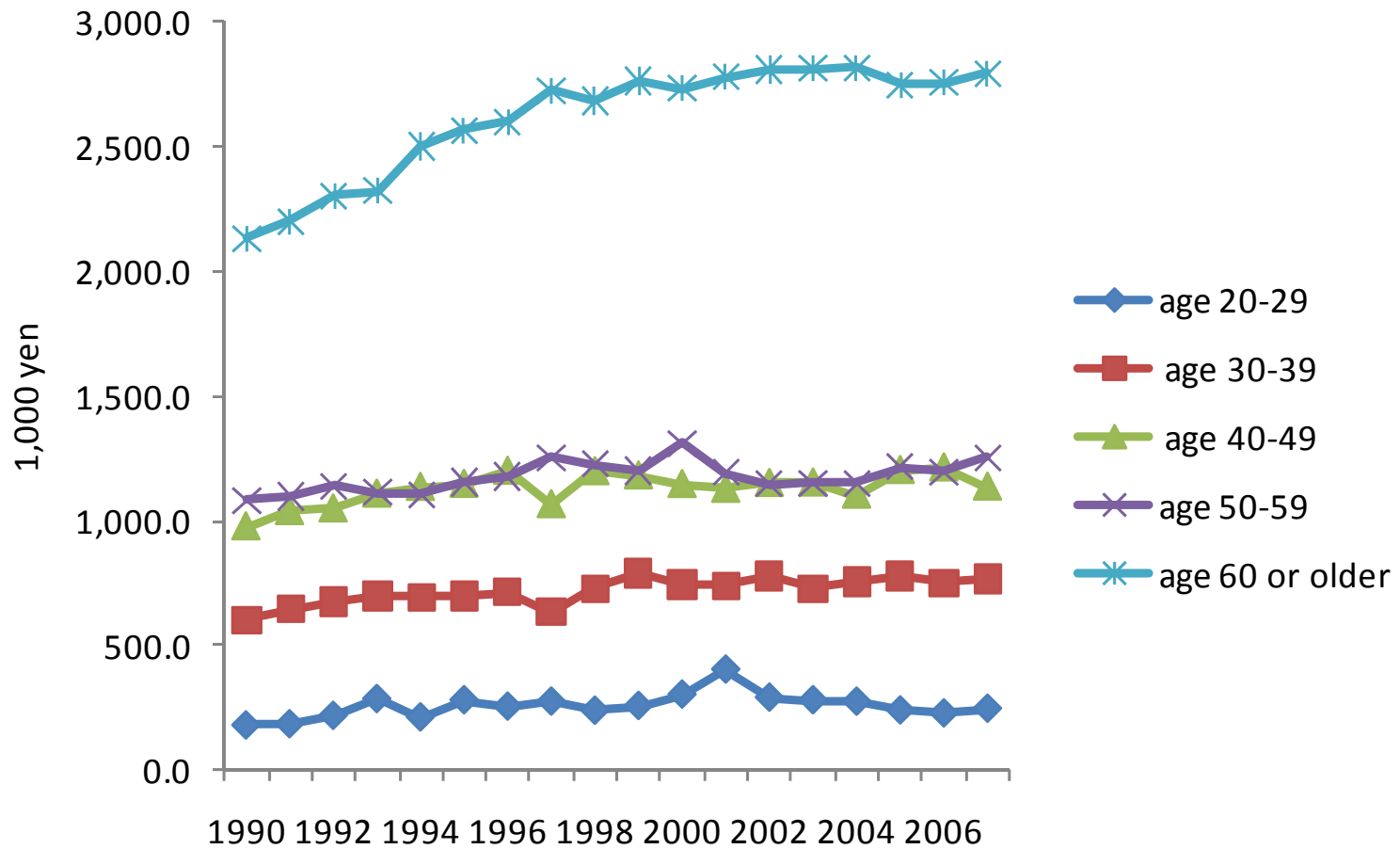
# Estimation results (Figure1)

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In the 2000s

- Burden amounts in most age divisions decreased slightly in the first half of the 2000s.
- In the latter half of the 2000s, however, burden amounts increased in all age divisions.
- Revenue from individual income tax and corporate tax increased in the latter half of the 2000s due to economic recovery.
- The public pension system was reformed in 2004 so that public pension premiums will increase every year until 2017.
- Those factors read to increase of burden amounts in the latter half of the 2000s.

# Figure 2: Benefit Amounts per Person by Age Group





## Estimation results (Figure 2)

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In the 1990s

- Benefit amounts for those aged 60 or older greatly increased in the 1990s.

- \* This is because the amount of pension benefit per person increased.

- Benefit amounts for other age divisions increased slightly, although these amounts were considerably smaller than those for people aged 60 or older.

- \* Government expenditure on such areas as education and other subsidies increased, albeit by small amounts, throughout the 1990s.



## Estimation results (Figure 2)

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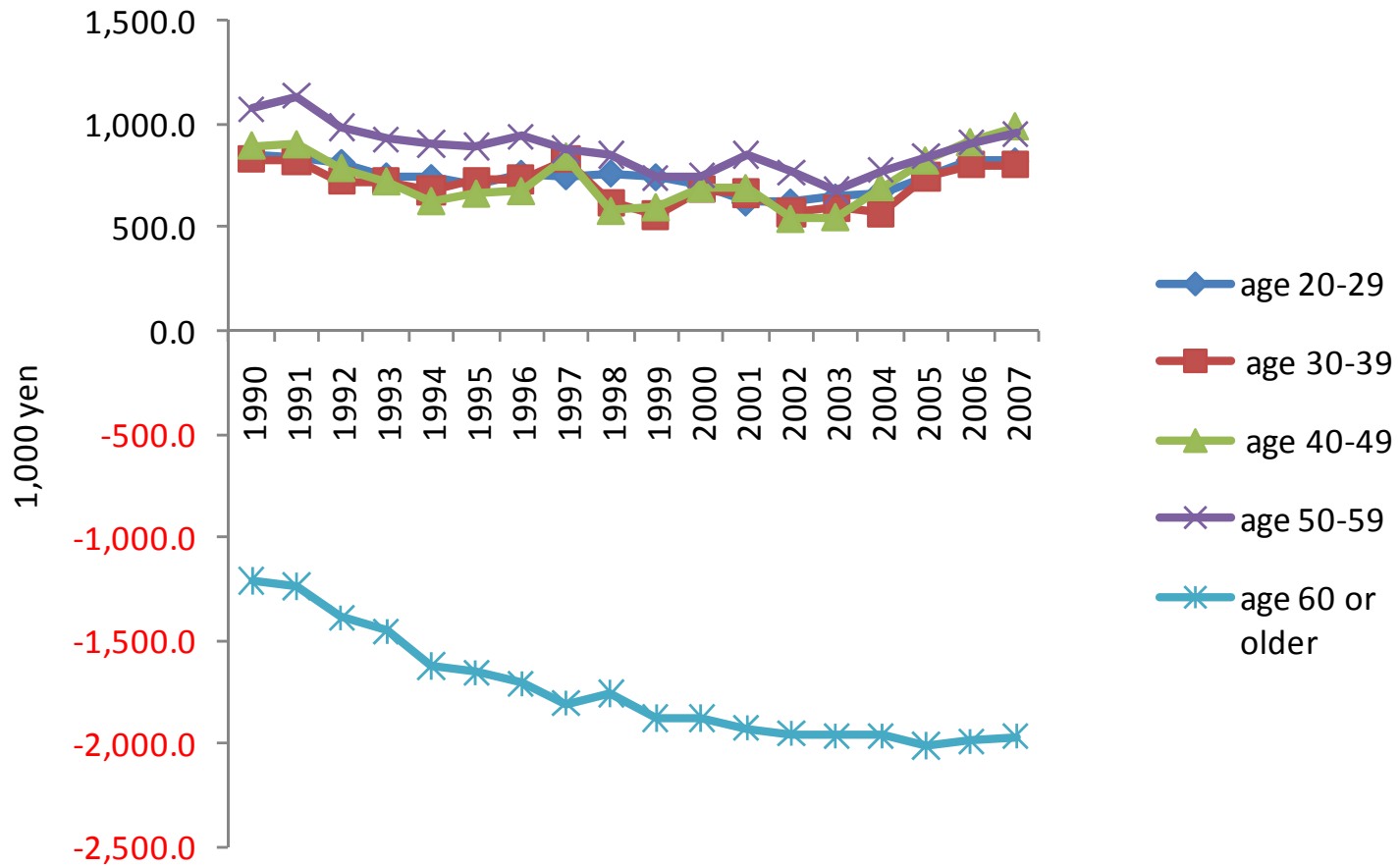
In the 2000s

- While benefit amounts for those aged 60 or older continued to increase in the 2000s, the rate of increase was smaller than it had been in the 1990s.

- \* The age at which one would become eligible to receive the fixed and income-related portions of public pension benefits was raised from 60 to 65 years old from 2001.

- Meanwhile, government expenditure and other subsidies remained constant in the 2000s; therefore, benefit amounts for the other age divisions remained constant in the 2000s.

# Figure 3: Net Burden Amounts per Person by Age Group





## Estimation results (Figure 3)

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- Net burden amount = burden amount – benefit amount

In the 1990s

- The generation of age 60 or older received net benefits, and net benefits greatly increased in the 1990s.
  - \* The benefits from the social security system, especially the pension, increased every year.
- Net burden amounts decreased somewhat in the other age divisions.
- This suggests that the net burden was transferred to the future generation because the increase in net benefits for those aged 60 or older was not covered by raising the net burden of the present generation in the 1990s.





## Estimation results (Figure 3)

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In the first half of 2000s

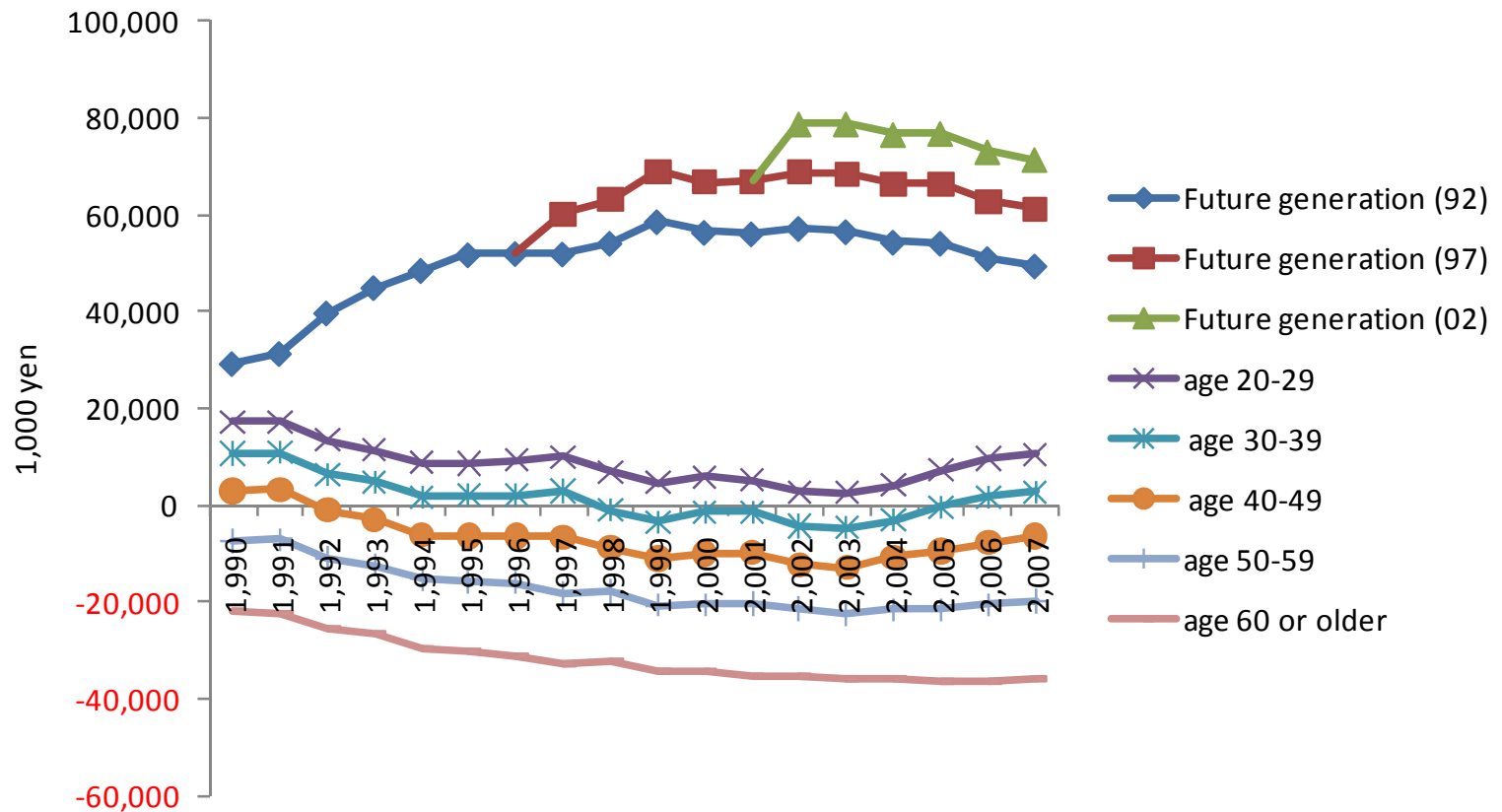
- The trends described above diminished during the first half of the 2000s.
- Increases in net benefits for those aged 60 or older were slight, decreases in the net burden for those in their 20s, 30s, 40s, and 50s were slight.

In the latter half of 2000s

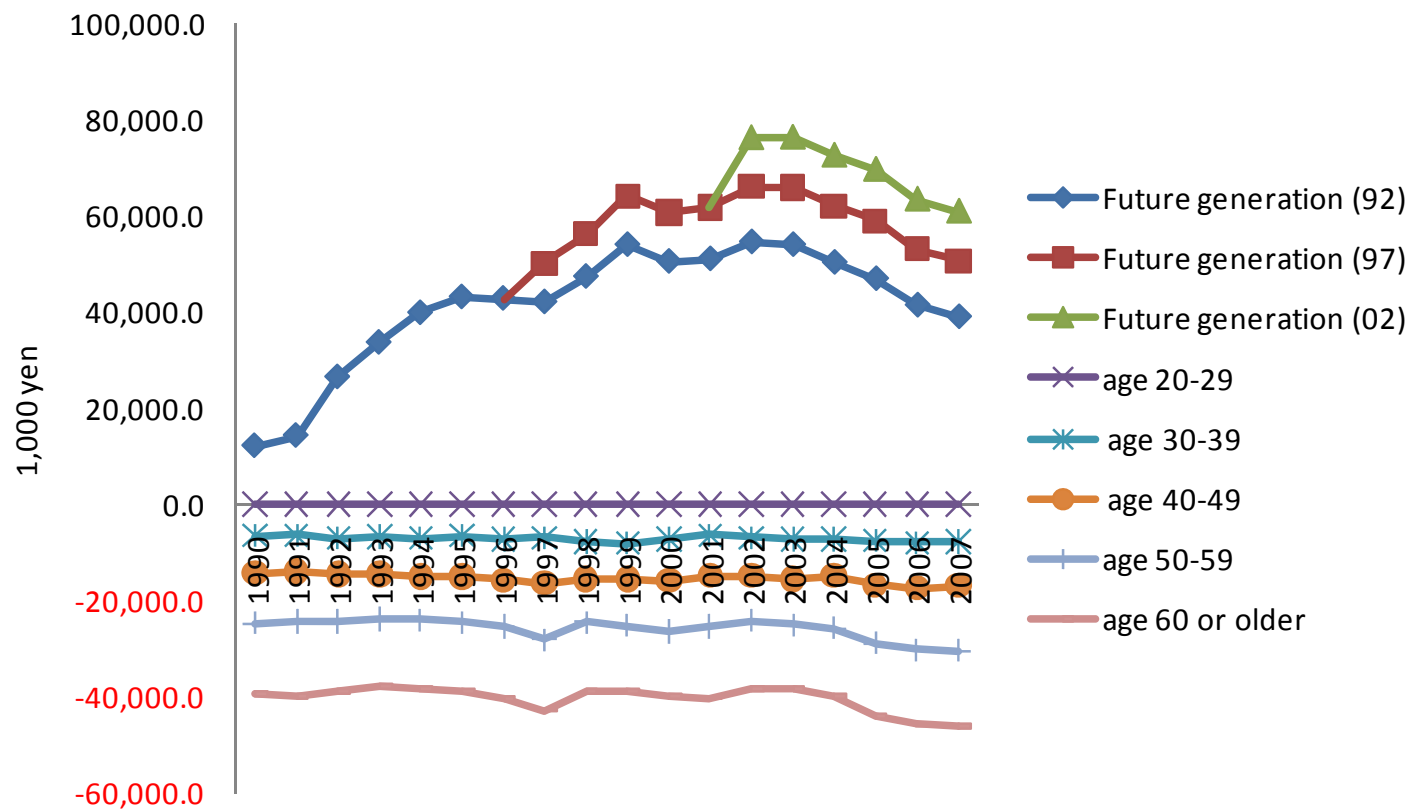
- The net burden increased in all age divisions, and the net benefit for those aged 60 or older remained constant.

\*This suggests that the net burden of the future generation was mitigated through a rise in the net burden of the present generation, in contrast to the direction taken in the 1990s.

# Figure 4: Lifetime Net Burden per Person by Age Group



# Figure 5: Lifetime Net Burden per Person Compared to That of Those in Their 20s





## Estimation results (Figure 4, 5)

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In the 1990s

- The lifetime net burden amount of the present generation, including the generation of age 20s, decreased every year, while the net burden amount of the future generations increased every year.

\* These results reveal that the policies adopted in the 1990s read to reduce the burden of the present generation, including those in their 20s, while transferring the burden to the future generation.



## Estimation results (Figure 4, 5)

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In the 1990s

- Moreover, analysis using both old and new population estimates shows that the downward revision of the 1997 population projections increased the lifetime net burden of the future generation by 15.7% in 1997, 16.3% in 1998, and 17.5 in 1999.



## Estimation results (Figure 4, 5)

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In the 2000s

- In the first half of the 2000s, the lifetime net burden of those in their 20s decreased, while that of future generation increased.
- However, the policy stance for intergenerational redistribution changed remarkably in the latter half of the 2000s.
- The lifetime net burden for those in their 20s, 30s, and 40s grew heavy while that of those aged 60 or older remained constant.
  
- When population projections made in 1992 and in 2002 are used, the downward revision of population numbers increased the lifetime net burden of the future generation by an average of 13.6%.



## Estimation results (Figure 4, 5)

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In the 2000s

- Figure 5 shows that the disparity in the lifetime net burden between those in their 20s and the future generation shrank from 2004 onwards.

- Moreover, the disparity of the burden between those in their 20s and those aged 60 or older increased, although that of the burden between those in their 20s and those in their 30s and 40s did not change during the latter half of the 2000s.



## Estimation results (Figure 4, 5)

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- This means that the decline in the lifetime net burden of the future generation was achieved by increasing the burden of those in their 20s, 30s, and 40s, not by reducing the lifetime net benefit of the retired generation.





## Conclusion remarks

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- The results show that the policies of the 1990s read to reduce the financial burdens of the present generation, including those in their 20s, by passing these burdens on to future generations.
- This stance lasted through the early half of the 2000s but changed remarkably in the latter half of that decade.
- However, the decline in the lifetime net burden of the future generation was achieved by increasing the lifetime net burden of those in the young generation, and not by reducing the remaining lifetime net benefit of the retired generation.



## Conclusion remarks

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- The population aged and the birth rate declined more than was expected, and this increased the lifetime net burden of the future generation by approximately 40%.
- This implies that it is difficult to control the intergenerational burden imbalance, which is created through practicing the pay-as-you-go system under circumstances of demographic uncertainty.