

The role of demography in macroeconomic development after the financial crisis in Finland

Risto Vaittinen, ETK and Reijo Vanne, Tela

*10th International Symposium on Demographic Change and Policy
Responses, Beijing, 13-14.11.2014*

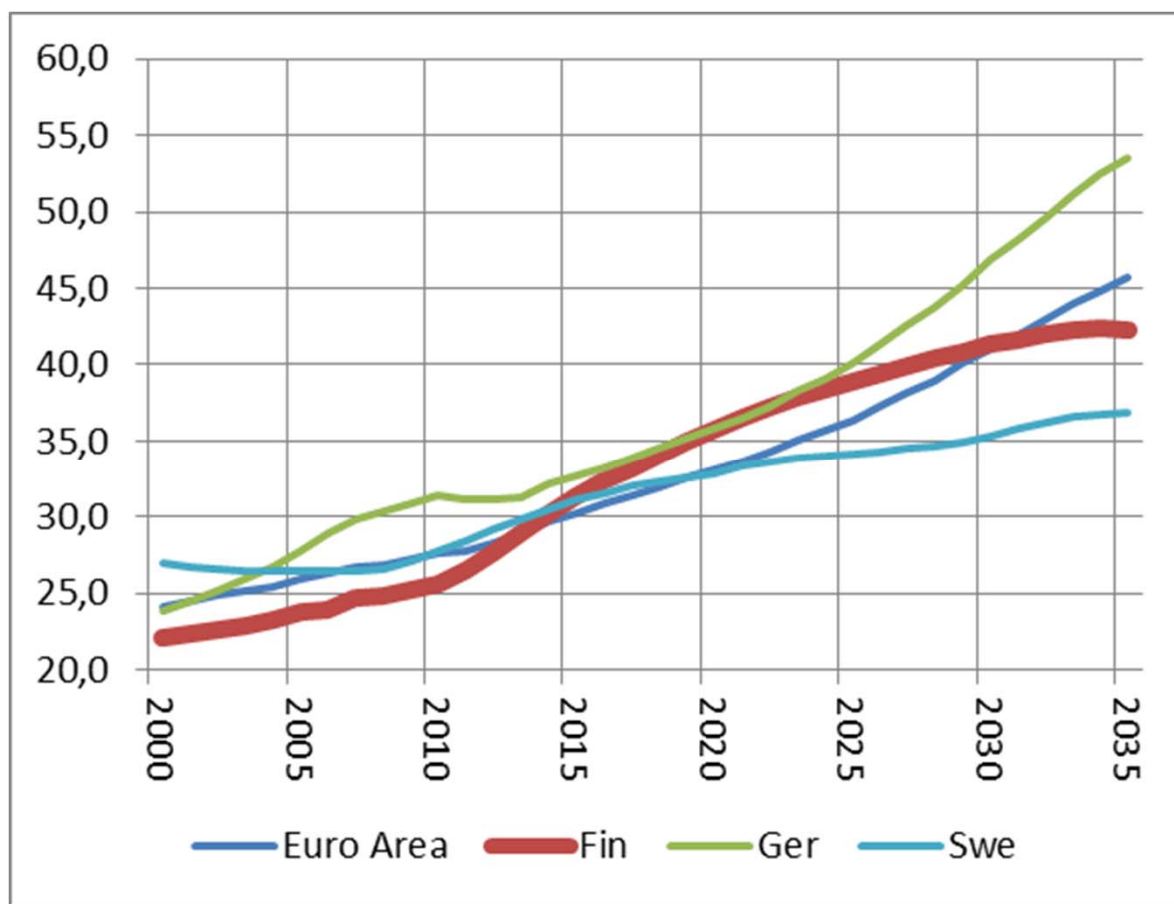


Finnish Centre for Pensions
ELÄKETURVAKESKUS

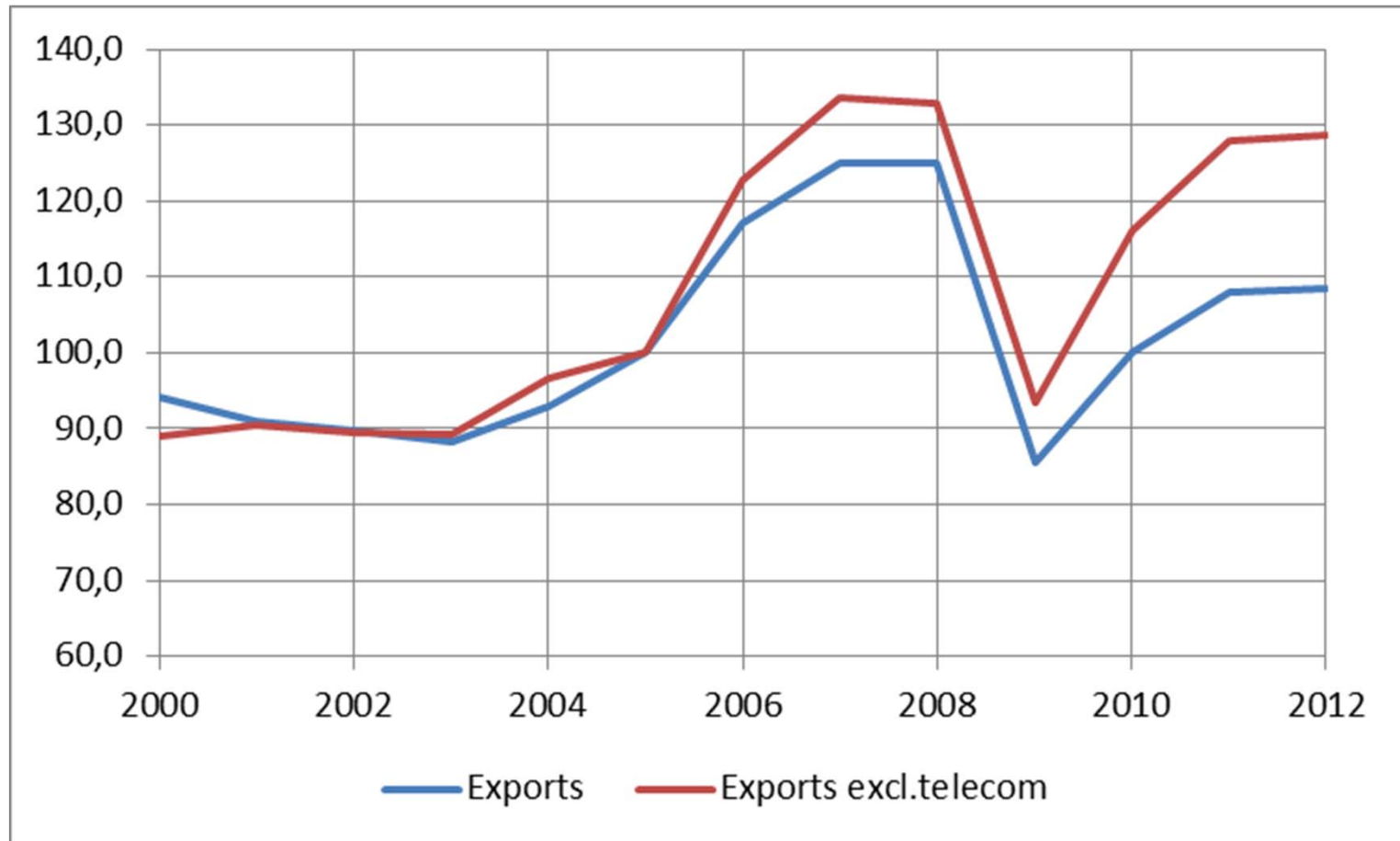
Finnish macroeconomic performance in European perspective

	GDP per capita		Labor productivity		Employment population ratio (%)		
	2000=100		2000=100				
	2008	2013	2008	2013	2000	2008	2013
Euro Area	111	107	109	113	43.5	45.6	43.5
Finland	124	119	119	117	44.4	48.6	47.7
Germany	110	116	113	115	47.8	49.0	51.2
Non-Euro EU	126	127	125	129	43.9	45.5	44.5
Sweden	122	128	119	123	48.2	50.5	50.9

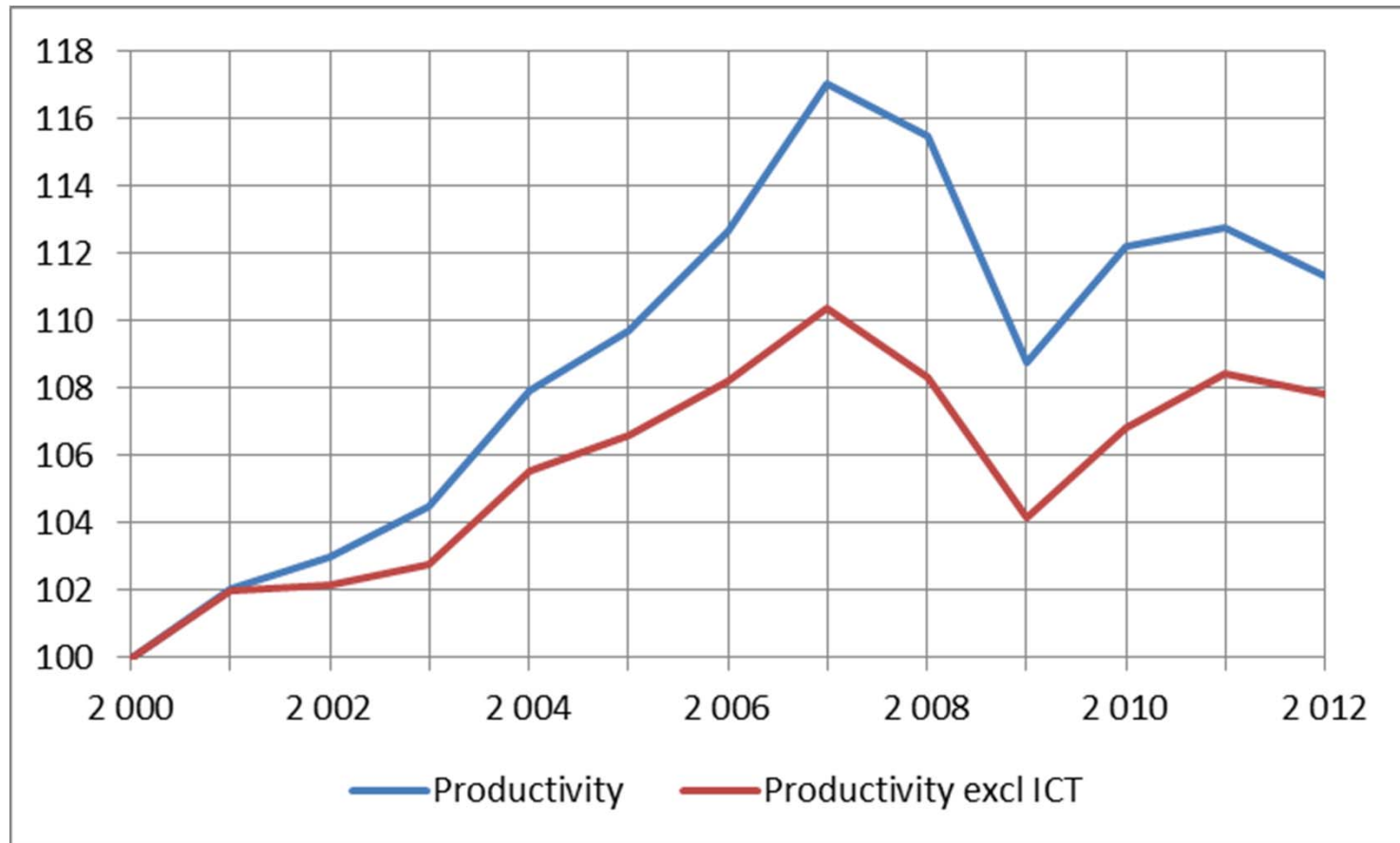
Employment has improved in a time of deteriorating old-age dependency



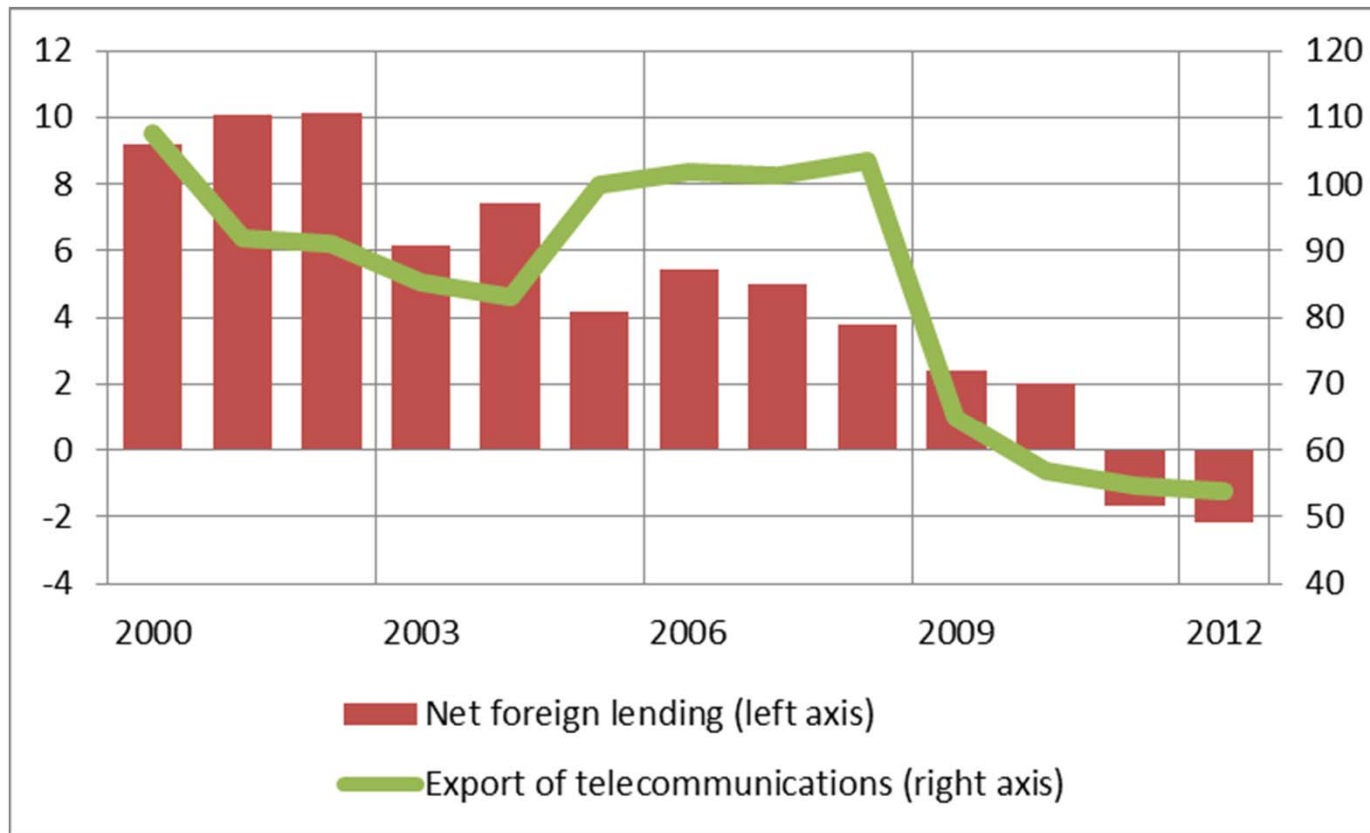
Exports and financial crisis



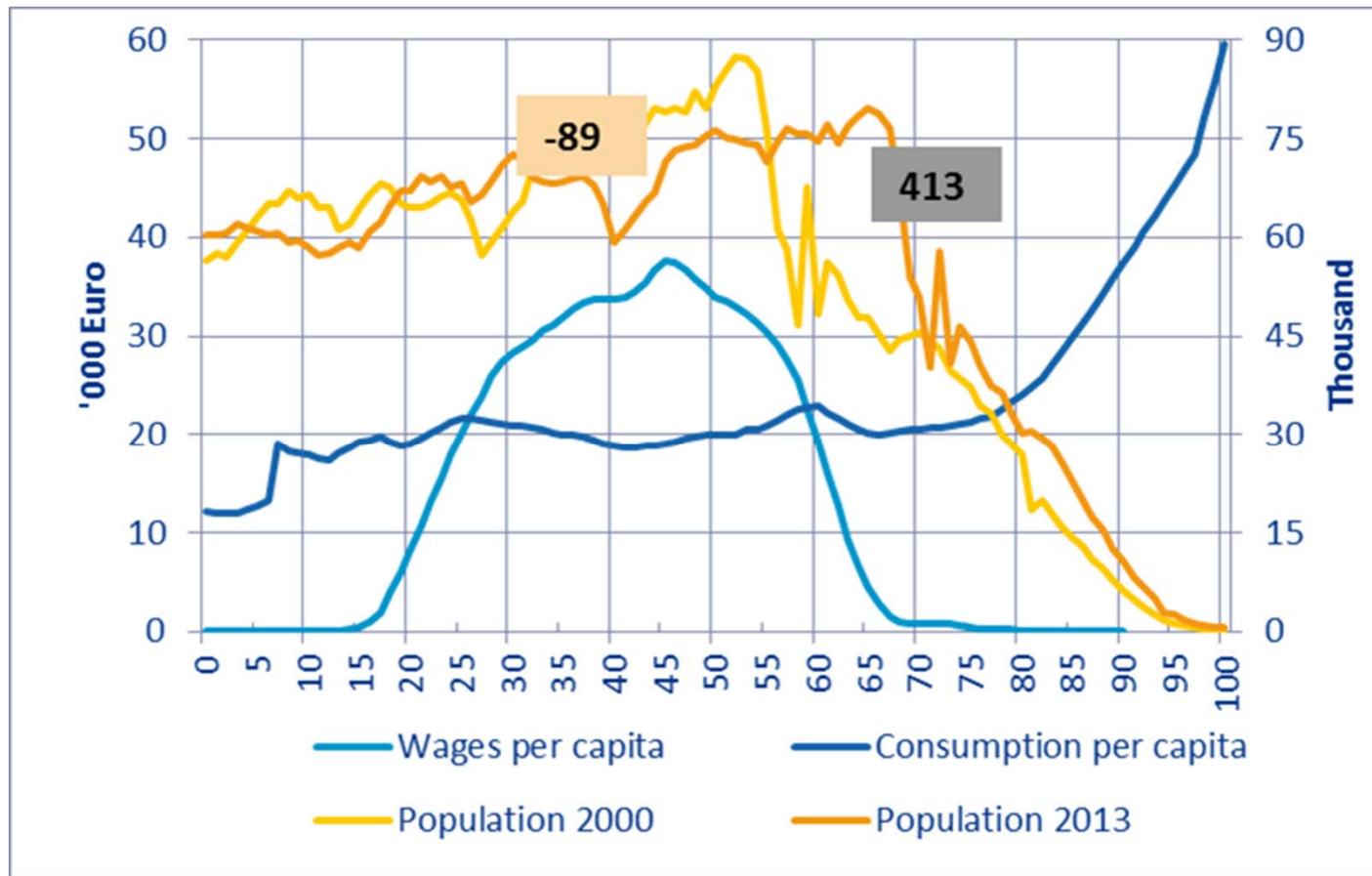
Productivity slowdown



External balance



Export-led story ignores changes in population age structure



External balance and economic support ratio

C: Consumption (private and public)

I: Investments (private and public)

X: Exports

M: Imports

Y: Income/Production

S: Savings (private and public)

$$C + I + X = Y + M$$

$$X - M = Y - C - I$$

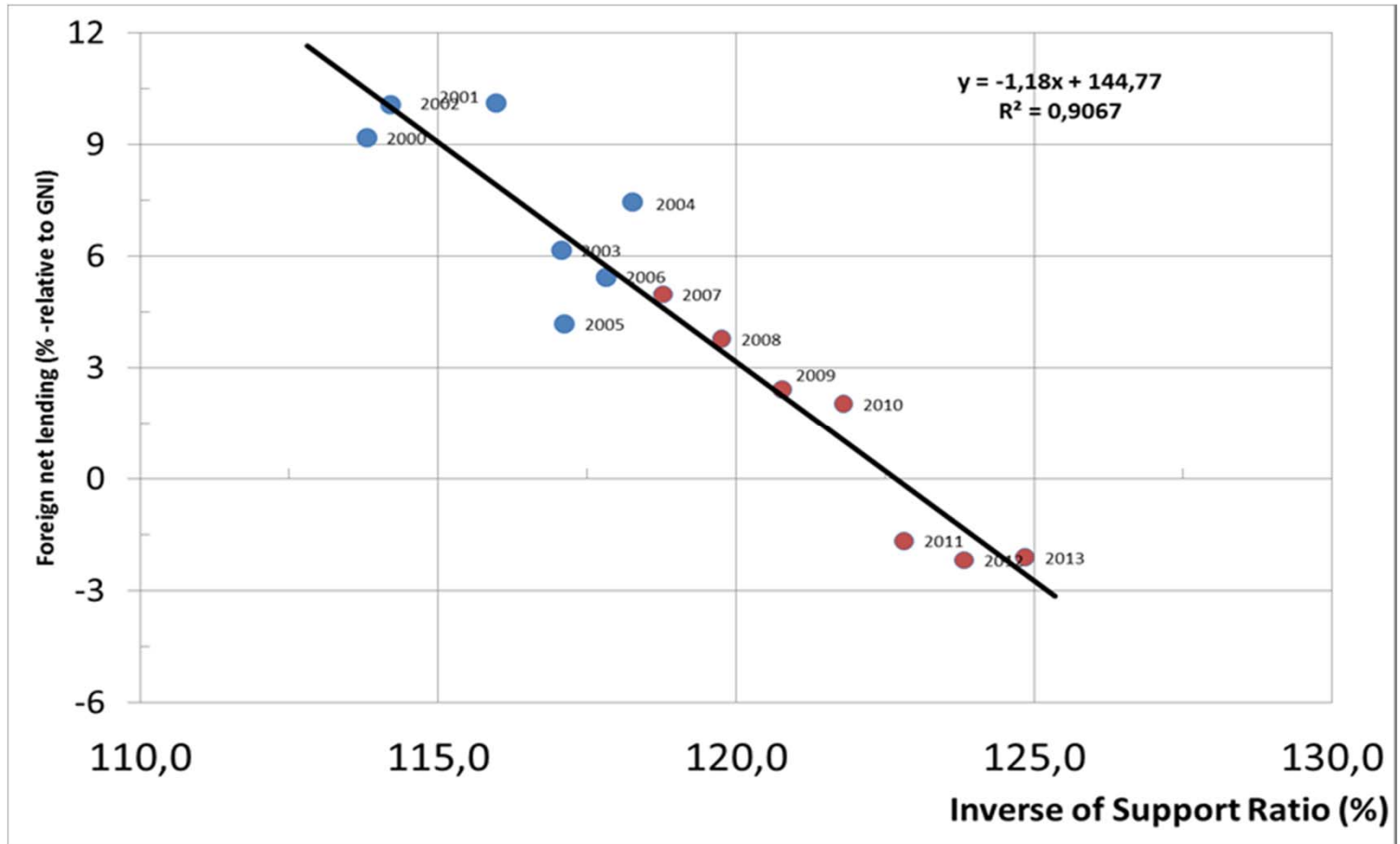
$$S = Y - C$$

$$X - M = S - I$$

$$\frac{S}{Y} = 1 - \frac{C}{Y} = 1 - \frac{W}{Y} \frac{C}{W}$$

$$\frac{X - M}{Y} = 1 - \frac{W}{Y} \frac{C}{W} - \frac{I}{Y}$$

Support ratio and external balance



Nature of external balance problem

$$\text{Income: } Y = pY_T(p) + Y_N(p)$$

$$\text{Expenditure: } E = pD_T(p, E) + D_N(p, E)$$

$$Y - E = p(Y_T(p) - D_T(p, E)) + (Y_N(p) - D_N(p, E))$$

$$p(Y_T(p) - D_T(p, E)) = Y - E + (D_N(p, E) - Y_N(p))$$

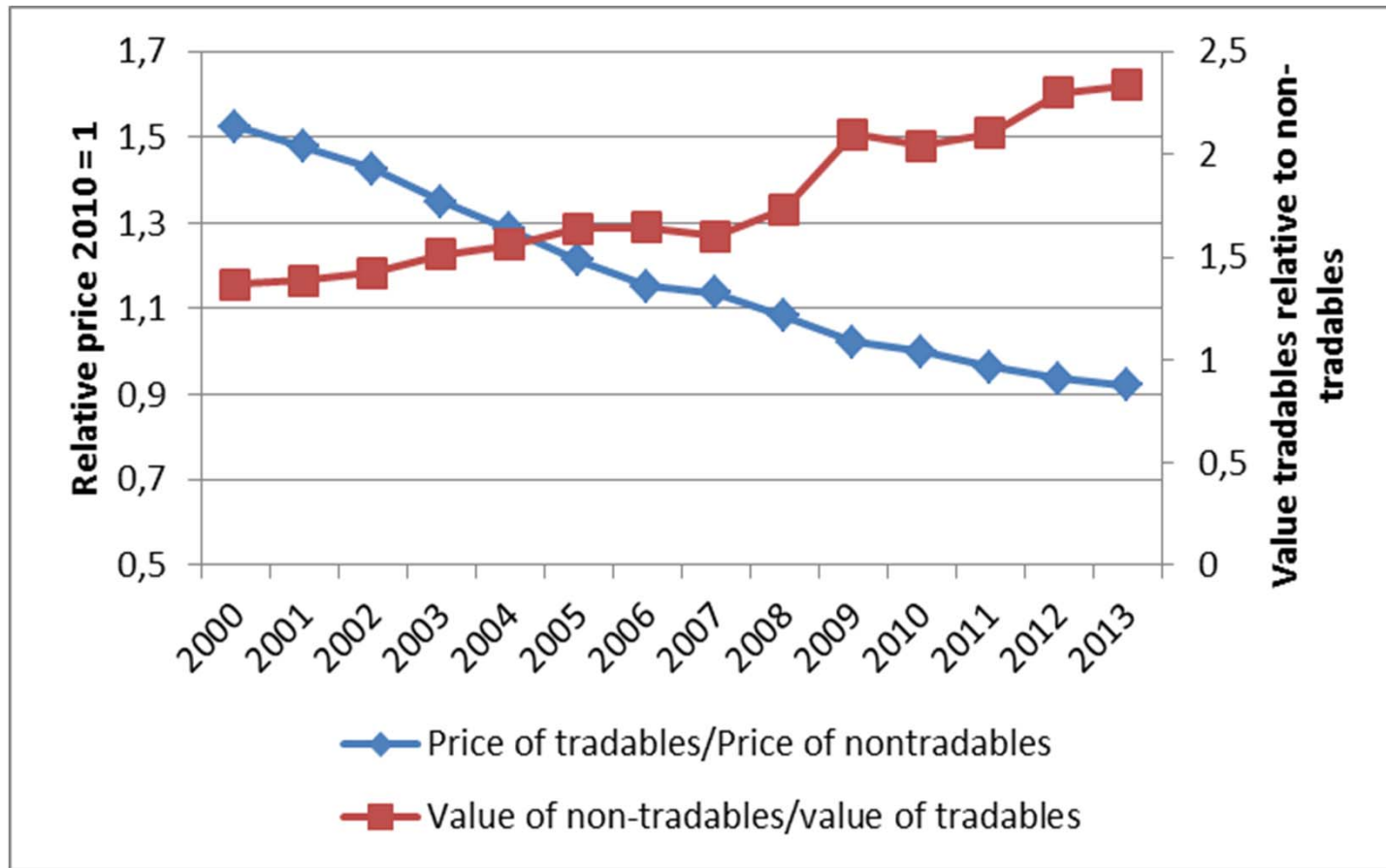
- It is useful to formulate the balance of trade as an outcome of differences in supply (Y) and demand (D) of tradable goods (T) and non-tradable services (N)
- Trade balance problem reflects either the imbalance between income and spending or disequilibrium in home markets



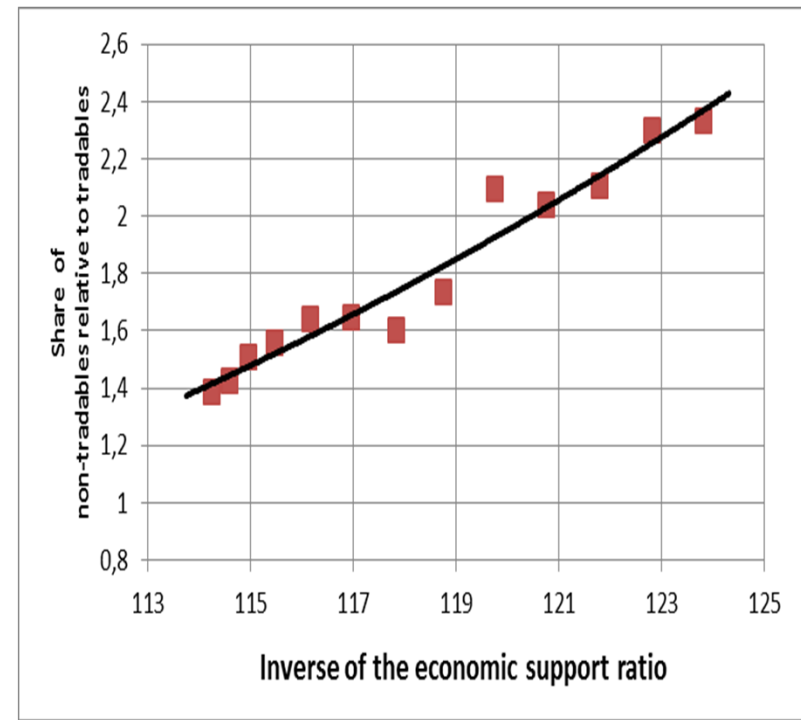
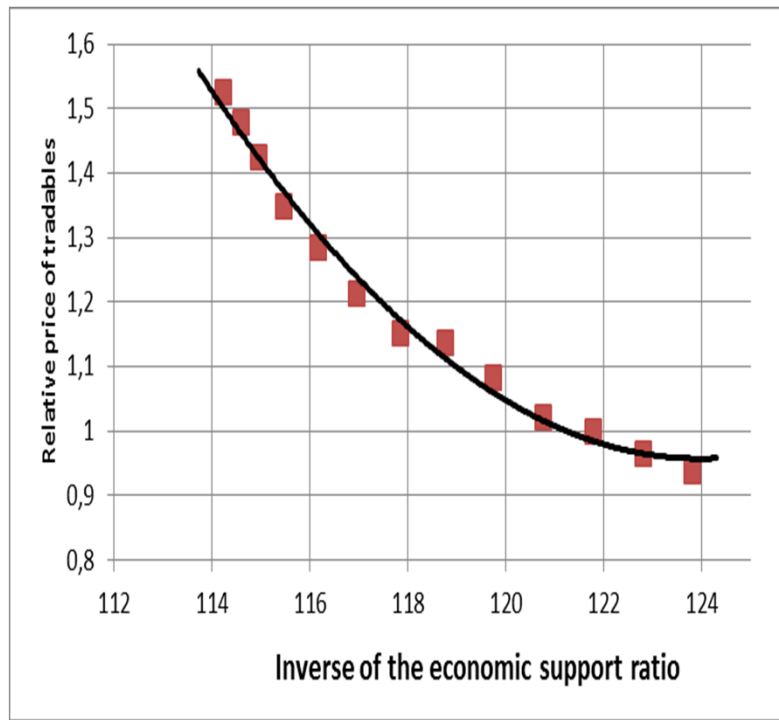
Aging and economic structure

- The young and the retired have a negative effect on the aggregate saving rate
 - This implies a higher level of demand for all goods at any given national income
 - Deterioration in external balance
- Compositional effect of aging
 - Elderly differ from the working-age population in the composition of their consumption. Their consumption is directed towards services that are non-tradable
 - Raises relative price of nontradables and shifts resources to non-tradable activities
- Wealth effect
 - Beyond any transfer of resources from workers, the elderly have accumulated wealth as a source of income
 - Growing number of elderly add purchasing power without adding labor supply
 - Raises the demand for labor relative to its supply and raises non-tradable prices

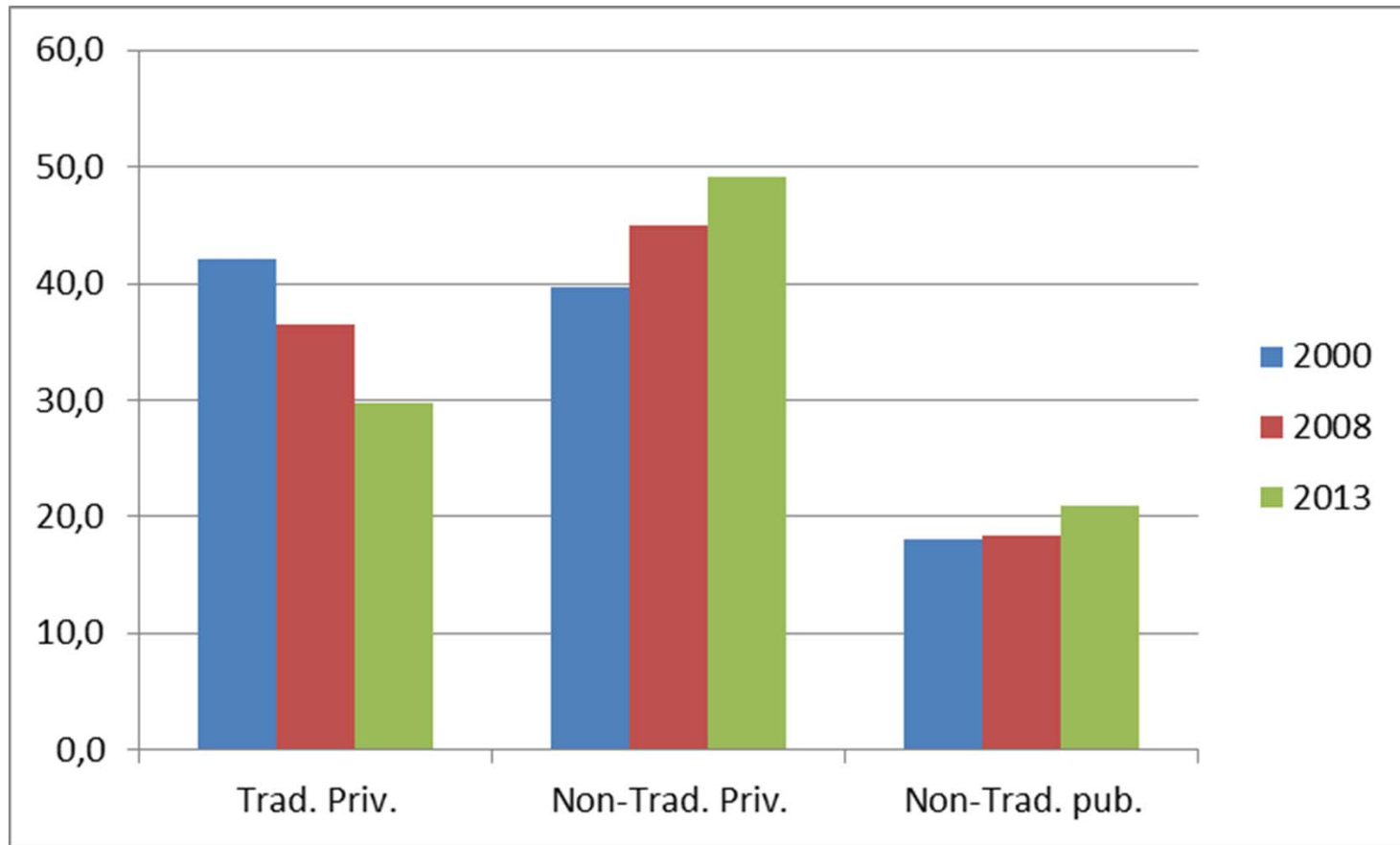
Structural change in the Finnish economy, 2000–2013



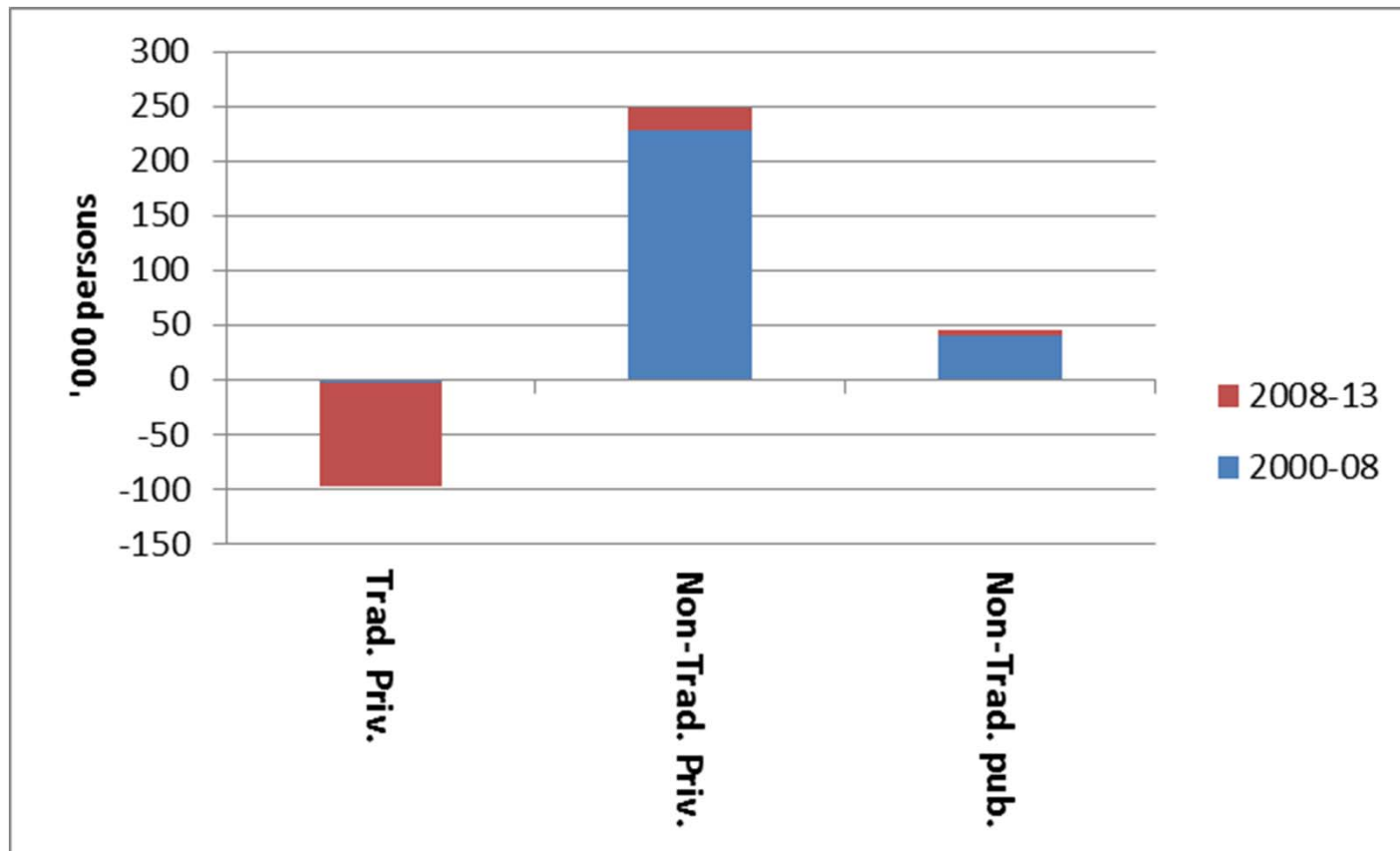
Aging and economic structure



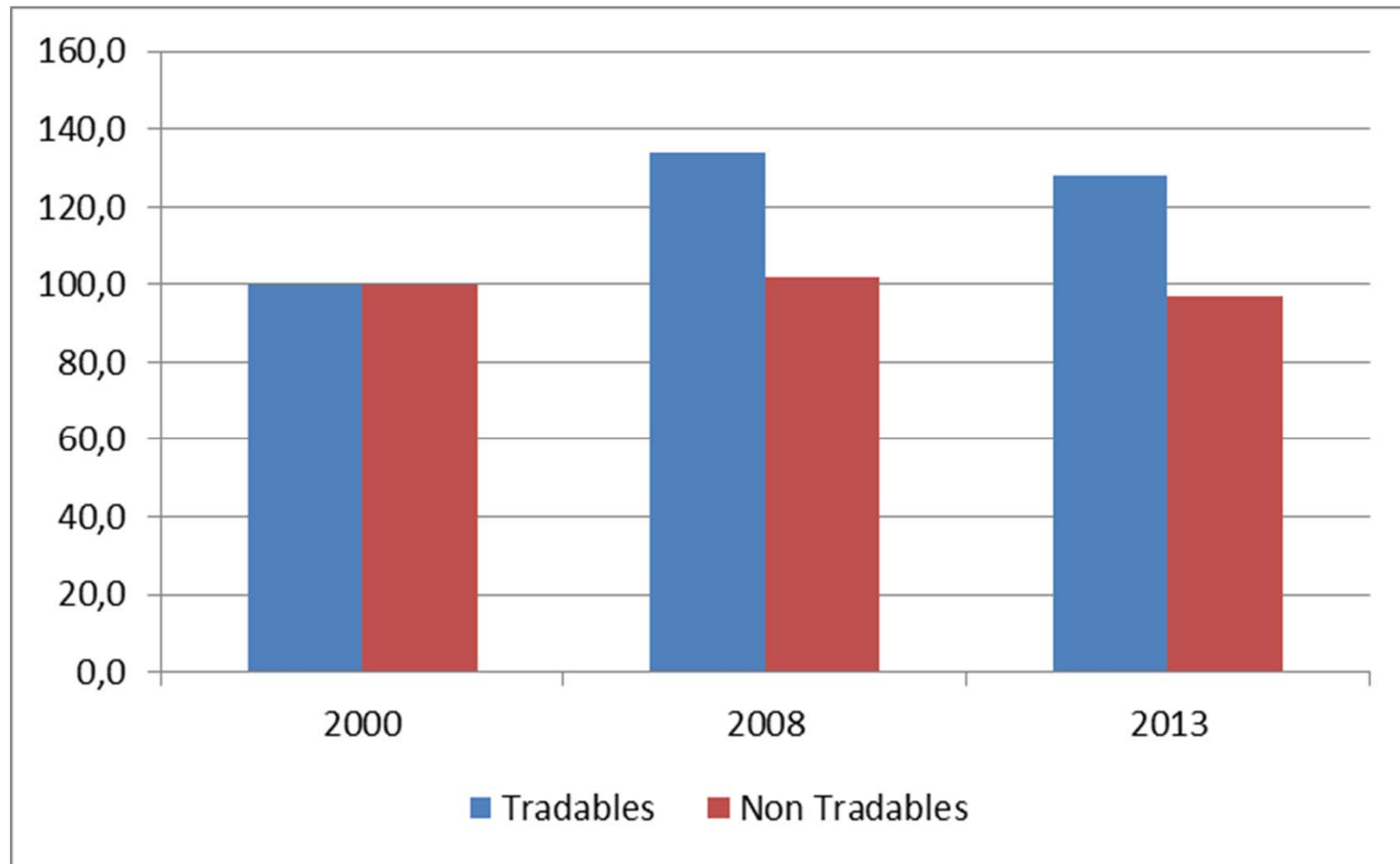
Share of output by sector before and after the crisis



Contribution of institutional sectors to the change in employment



Labor productivity before and after the crisis





Conclusions

- The change in population age structure has already had a significant impact on macroeconomic development in Finland
- Deterioration in the external balance has at least partly been a natural response to aging
- Net borrowing is not sustainable forever
 - Increase labor supply = Increased revenue from surplus-producing age in life cycle
 - Diminish consumption
 - Combination of both
- Acceleration in productivity growth helps to make the transition in income and consumption profiles less painful