Croatia, as well as many western-economy based countries, is expecting long-term negative demographic trends when it comes to young and elderly ratio or natural increase ratio. Social policy objective in the context of pension system is supposed to be crucial factor in preserving social stability based on long-term sustainability, not on short-term solutions like abundant debt-funded pensions directly from national budget. Recent macroeconomic changes in Croatia, like structural unemployment because of inconsistent demand and supply on labor market as well as extinction of old and expansion of new business markets puts Croatian pension system in challenging economic surroundings. These surroundings identify a new way of approach on determining future macroeconomic projections and designing a better and more sustainable fiscal system of which pension system holds substantial part.

The study presents argumented thoughts on previous and recent analyses of Croatian pension system, mainly from the period after pension reforms in Croatia that is between 2002 and 2012. Authors of this study identify fundamental problems and present a new perspective considering the direction of possible future changes in the pension system, having in mind recent demographic and public finance trends in Croatian economy. Authors also present conceptual directions towards optimization of the pension system, with emphasis on specifically applicable models of optimization considering pension pillars and other social contributions that are obligatory in calculating brutto wages. In addition, this study presents interest groups like pensioners, insured workers, obligatory pension funds and government that would be affected by proposed models of optimization. Different approaches in creating motivational factors for pension system optimization had been analyzed and presented solutions have a built-in trade-off for every analyzed interest group. Presented models are to be considered for potential implementation or new reform that would improve pension adequacy rates without affecting fiscal sustainability of public finance in Croatia.

**Keywords:** Croatian Pension Insurance, Pension System Reforms, Demographic Changes, Sustainability, Optimization Level, PAYG.