# Abstract

The aim of this diploma thesis is to describe of the process of mortality compression using indicators of life span and mortality compression in selected developed countries based on the data availability. Czechia and 11 developed countries from Europe and USA, Canada, Japan, Taiwan, Australia and New Zealand were selected. The source of the data is Human Mortality Database, where data are available mostly only from the 20th century and therefore part of the historical development is presented on the example of Sweden with data going from the year 1751. The most frequently mentioned and used indicators describing the variability of the age at death and the process of mortality compression and rectangularization of survival curve were used in this thesis. The main starting point was the assumption that the shift of deaths to a higher age manifests itself as compression of mortality. Compression of mortality means the concentration of deaths to a narrower age range, which reduces the variability of age at death, and makes the survival curve more rectangular. Selected indicators in this diploma thesis describe life expectancy, distribution (percentiles) of deaths in the life table, concentration of deaths and variability of age at death. Deaths are currently concentrated around modal age, but most people died in childhood in the past. Consequently, indicators of concentration of deaths are calculated from deaths around modal age. Specific indicators of mortality compression used in this thesis are, for example, C-family indicators that capture the age range with the highest concentration of deaths around the modal age. The analysis shows that shifting of deaths to higher ages has resulted in life expectancy growth, modal age growth, rectangularization of the survival curve and mortality compression in the long-term. The most significant changes occurred in the first half of the 20th century and shortly after World War II. In recent decades, shifting mortality has been observed in some countries without compression of mortality. In some years and short periods even an expansion of mortality can be observed. Examples of such developments include Japan, Taiwan and the USA.

## Key words

Compression of mortality, rectangularization, variability in age at death, modal age, C-family indicators, C50, moving rectangle, life expectancy.