Abstract. When pension systems are contrasted it is common to use simplified demographic models, such as overlapping generation models with time-invariant mortality. Breaking with this tradition, we show that for a population with increasing longevity, the pay-as-you-go (PAYG) system may be more advantageous than a funded system (FS). Increasing longevity favours the PAYG system because for the workers living longer at retirement than current retirees, it is less costly to fund others’ current pensions than their own. At present, the effect amounts to around 15 per cent in terms of the dependency ratio, or six more years at work in the FS, or 1 per cent per annum in terms of the real interest rate. In most developed countries the effect substantially exceeds that of the usually studied biological interest rate.