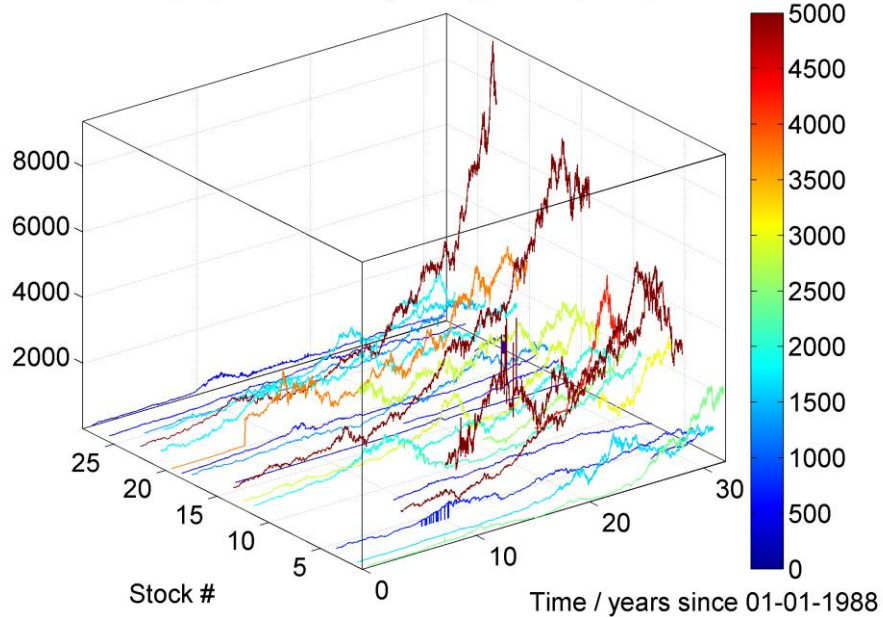
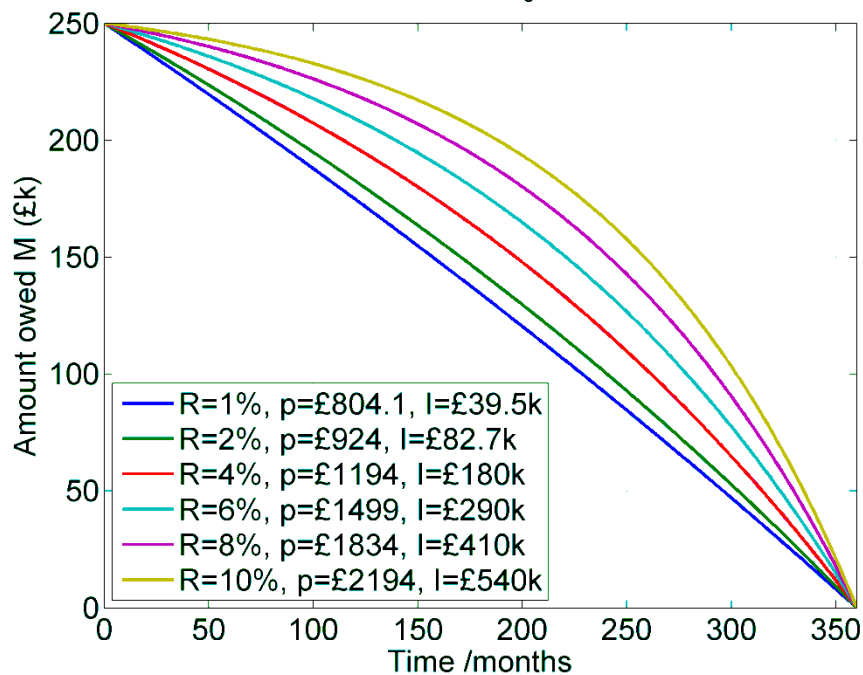


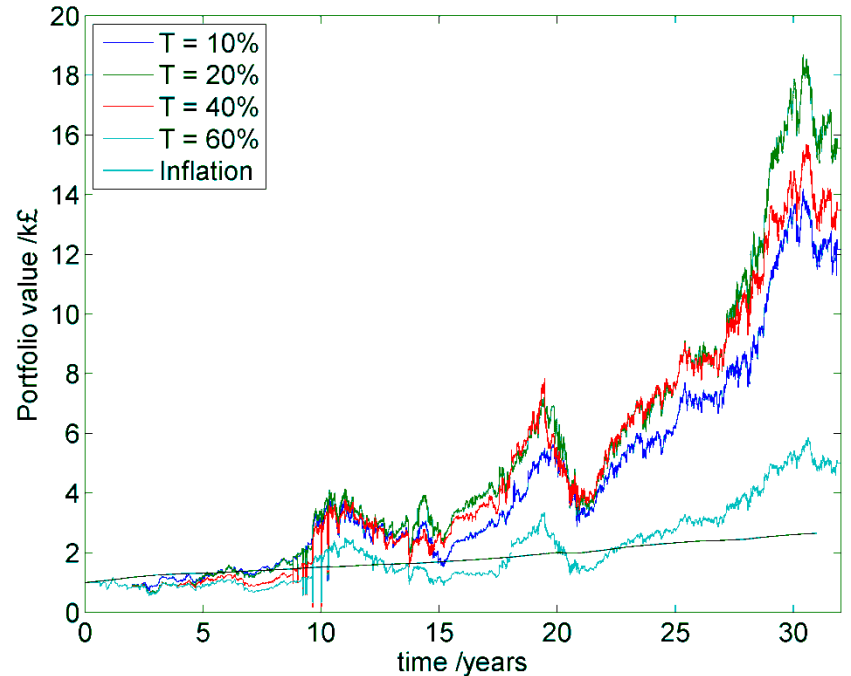
FTSE 100 historical record 01-01-1988 to 01-01-2020  
Colour proportional to daily average stock price /pence



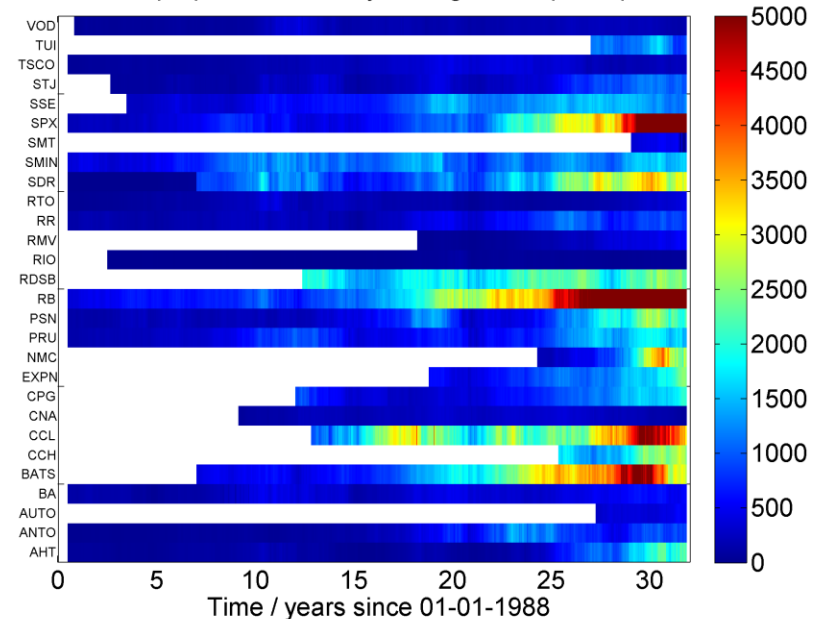
$N=30$  years,  $M_0=£250k$



Growth of £1000 from 01-01-1988 to 01-01-2020



FTSE 100 historical record 01-01-1988 to 01-01-2020  
Colour proportional to daily average stock price /pence



$$k = \frac{1}{12} \times \frac{1}{100} R \quad M_{n+1} = M_n (1 + k) - p$$

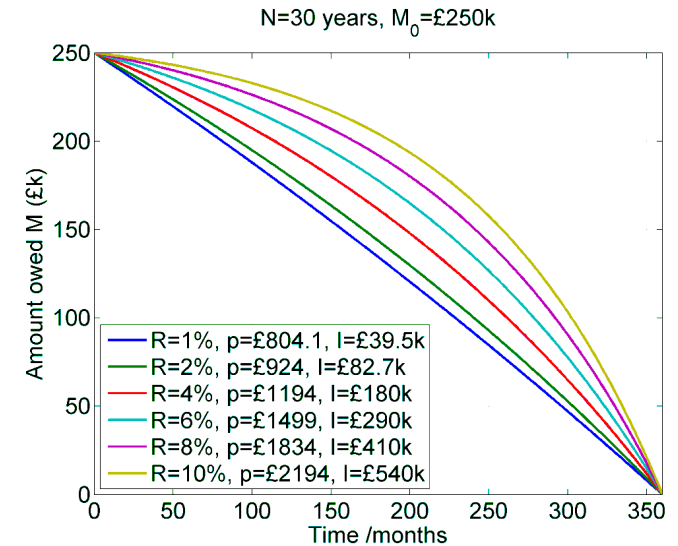
$$M_n = M_0 (1 + k)^n - p \sum_{j=1}^n (1 + k)^{j-1} \quad \sum_{j=1}^n x^{j-1} = \frac{1 - x^n}{1 - x}$$

$$M_n = (1 + k)^n \left( M_0 - \frac{p}{k} \right) + \frac{p}{k}$$

$$p = \frac{kM_0}{1 - (1 + k)^{-12N}}$$

$$k = \frac{1}{1200} R$$

$$\Gamma = \frac{I}{M_0} = \frac{12Nk}{1 - (1 + k)^{-12N}} - 1$$



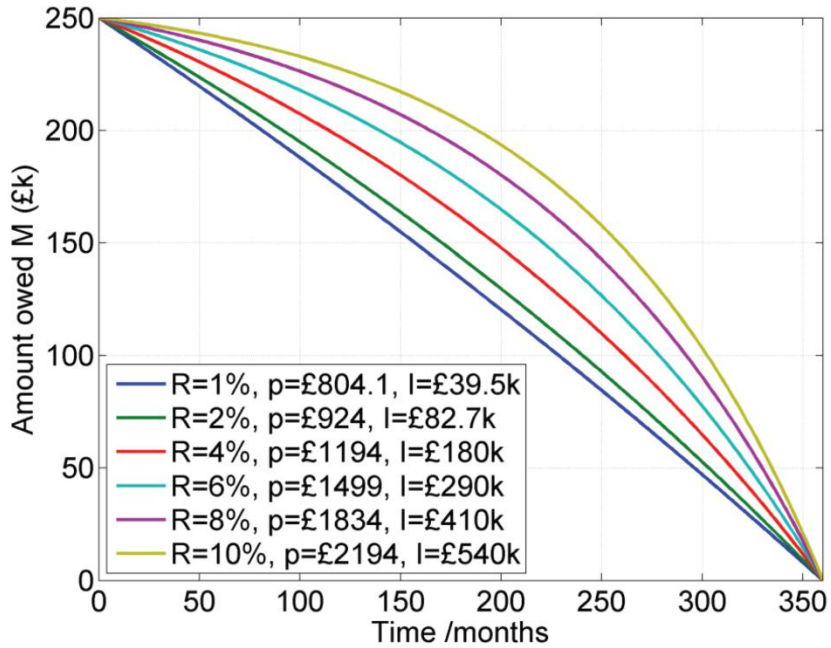
$$M_n = (1 + k)^n \left( M_0 - \frac{p}{k} \right) + \frac{p}{k}$$

$$p = \frac{kM_0}{1 - (1 + k)^{-12N}}$$

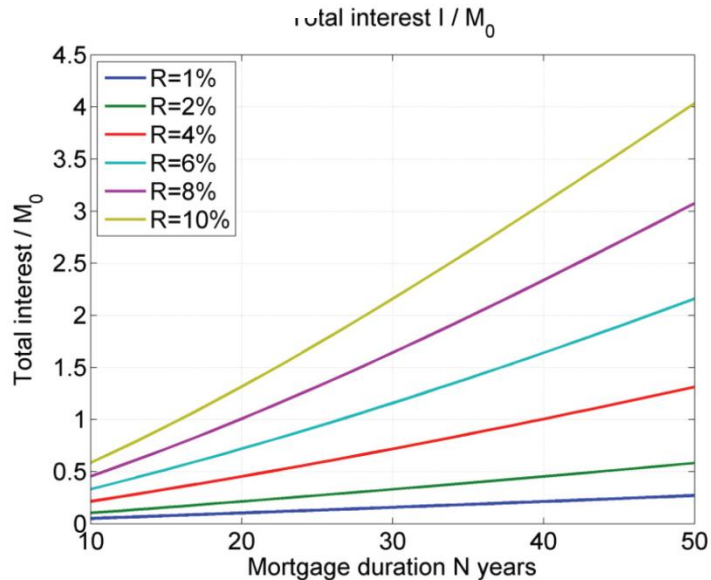
$$k = \frac{1}{1200} R$$

$$\Gamma = \frac{I}{M_0} = \frac{12Nk}{1 - (1 + k)^{-12N}} - 1$$

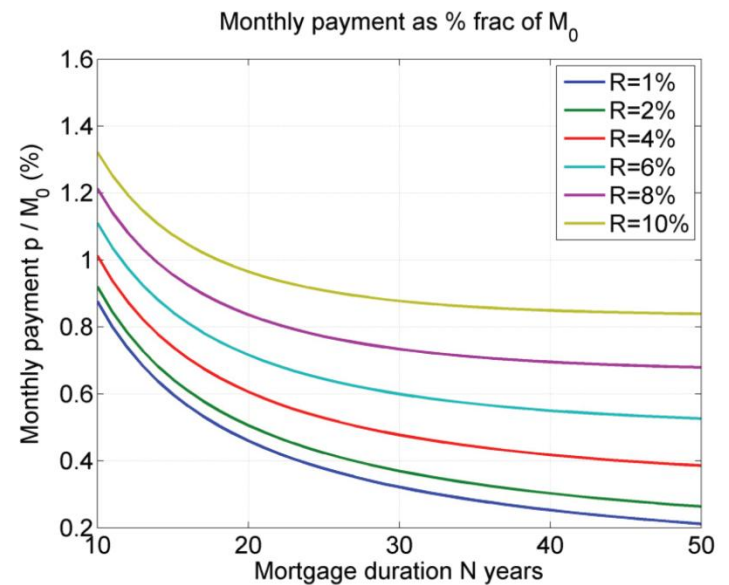
N=30 years, M<sub>0</sub>=£250k



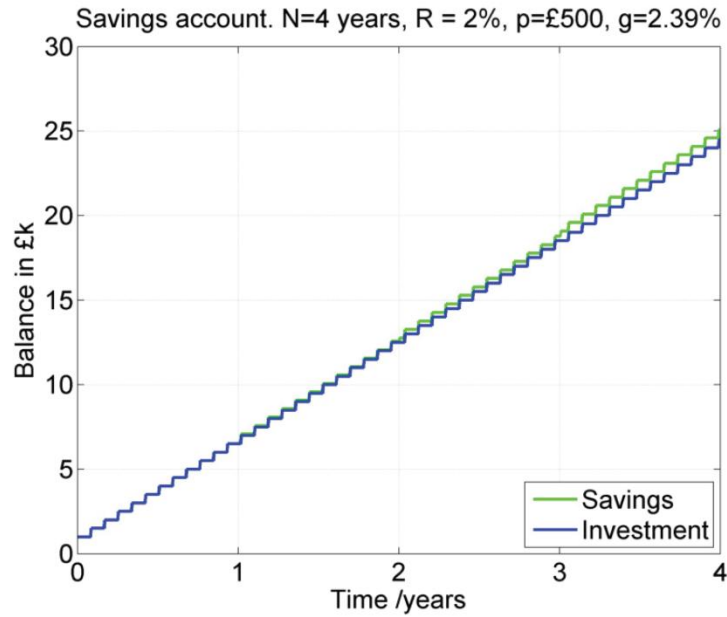
(a)



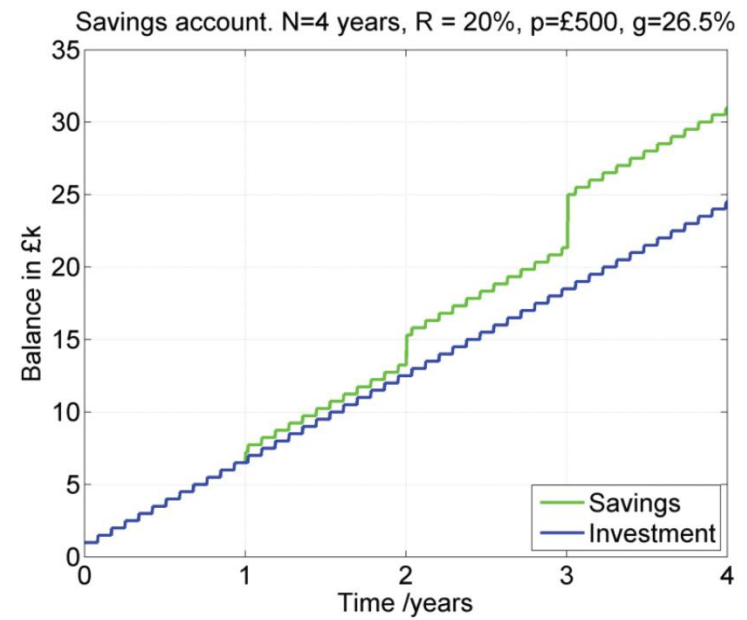
(b)



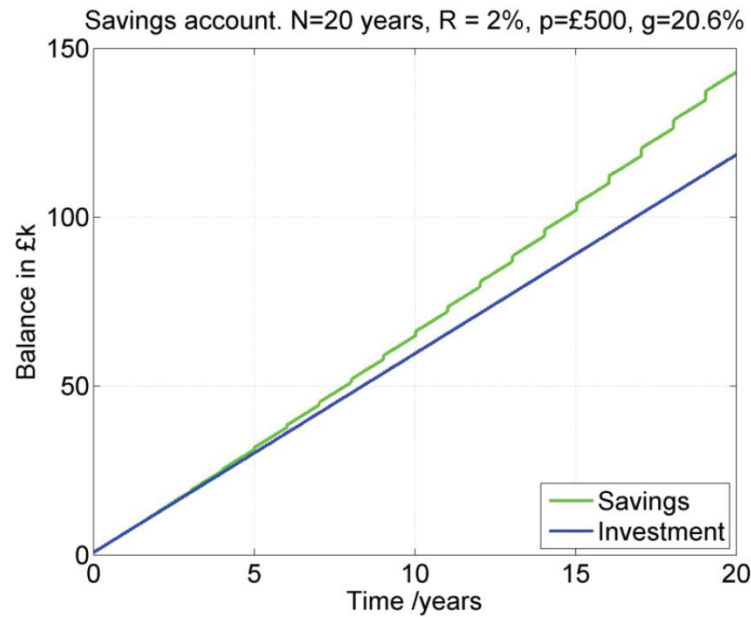
(c)



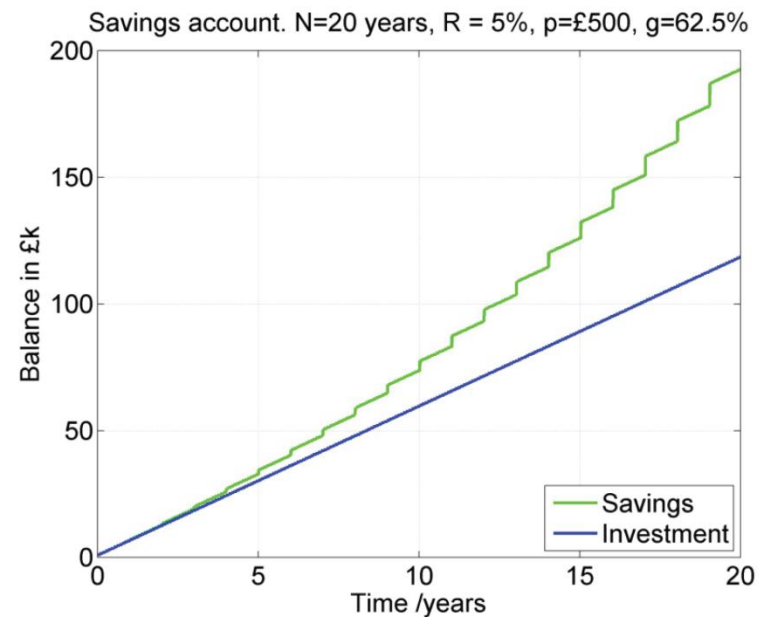
(a)



(b)

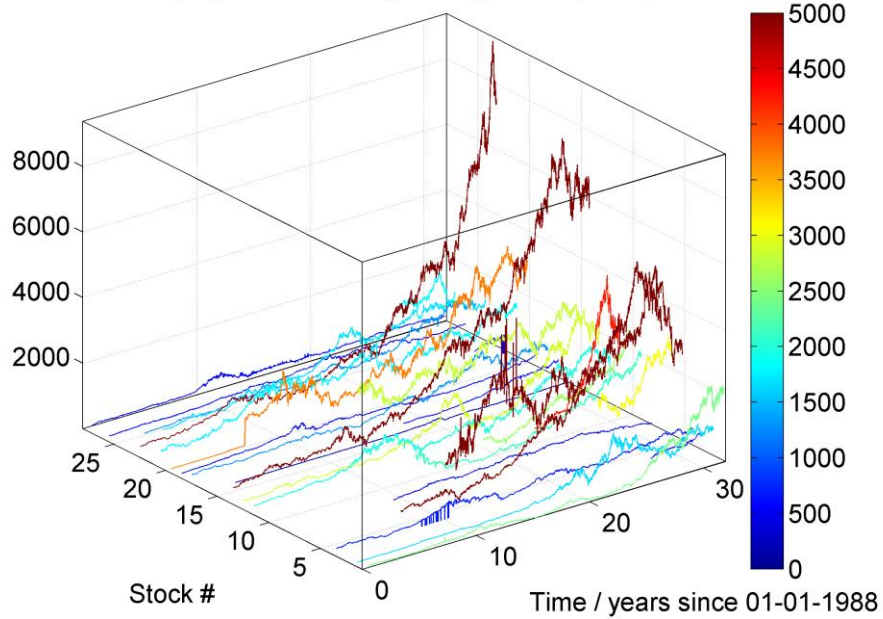


(c)

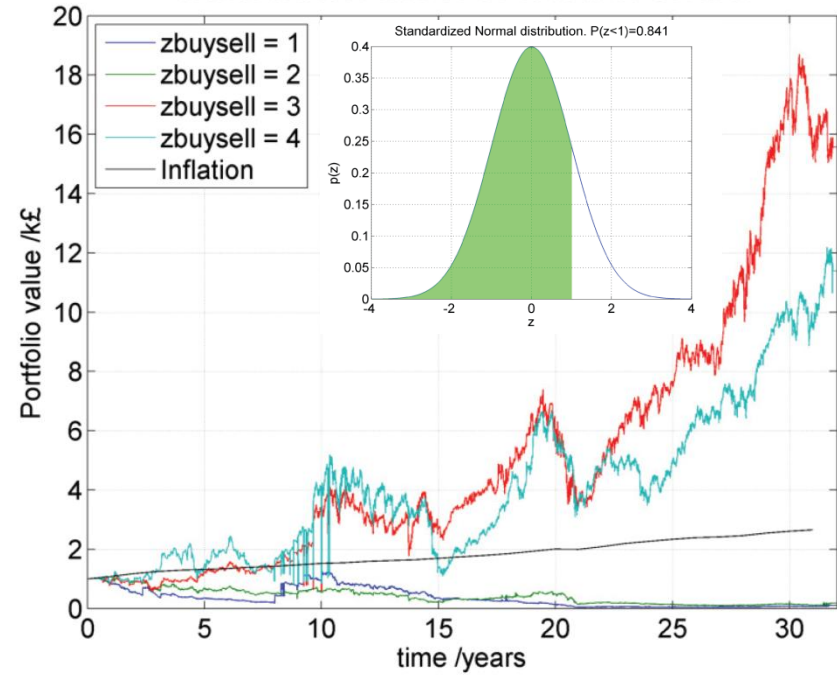


(d)

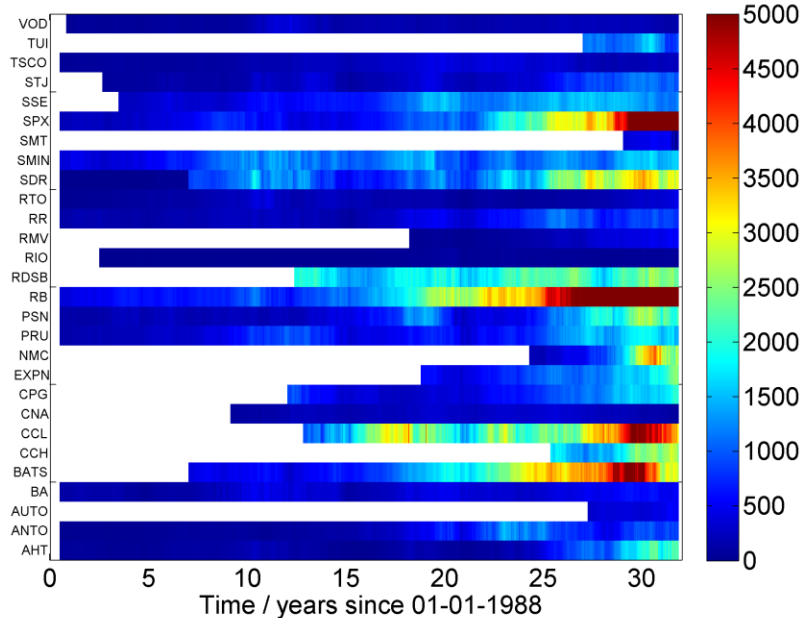
FTSE 100 historical record 01-01-1988 to 01-01-2020  
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Growth of £1000 from 01-01-1988 to 01-01-2020



FTSE 100 historical record 01-01-1988 to 01-01-2020  
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Growth of £1000 from 01-01-1988 to 01-01-2020

