Financijska matematika – osnovne formule

$$
\begin{aligned}
A(n) &= C_0(1+i)^n \\
\left(1+\frac{i^{(p)}}{p}\right)^p &= 1+i \\
i^{(p)} &= p\Big((1+i)^{1/p}-1\Big) \\
v &= \frac{1}{1+i} \\
\delta &= \ln(1+i) \\
\mathrm{e}^{\delta} &= 1+i \\
v(t) &= \mathrm{e}^{-\delta t} \\
d &= \frac{i}{1+i} \\
i &= \frac{d}{1-d} \\
v &= 1-d \\
d^{(p)} &= p\Big(1-(1+i)^{-1/p}\Big) \\
\frac{1}{d^{(p)}}-\frac{1}{i^{(p)}} &= \frac{1}{p} \\
a_{\overline{n}|} &= v+v^2+\cdots+v^n = v\frac{1-v^n}{1-v} = \frac{1-v^n}{i} \\
\ddot{a}_{\overline{n}|} &= 1+v+\cdots+v^{n-1} = \frac{1-v^n}{1-v} = \frac{1-v^n}{d} \\
\ddot{a}_{\overline{n}|} &= (1+i)a_{\overline{n}|} \\
\ddot{a}_{\overline{n}|} &= 1+a_{\overline{n-1}|} \\
a_{\overline{\infty}|} &= \lim_{n\to\infty} a_{\overline{n}|} = \frac{1}{i} \\
\ddot{a}_{\overline{\infty}|} &= \lim_{n\to\infty} \ddot{a}_{\overline{n}|} = \frac{1}{d} \\
S_{\overline{n}|} &= \frac{(1+i)^n-1}{i} \\
\ddot{S}_{\overline{n}|} &= \frac{(1+i)^n-1}{d} \\
m|a_{\overline{n}|} &= a_{\overline{n+m}|}-a_{\overline{m}|} \\
m|\ddot{a}_{\overline{n}|} &= \ddot{a}_{\overline{n+m}|}-\ddot{a}_{\overline{m}|} \\
(Ia)_{\overline{n}|} &= \frac{\ddot{a}_{\overline{n}|}-nv^n}{i} \\
(I\ddot{a})_{\overline{n}|} &= \frac{\ddot{a}_{\overline{n}|}-nv^n}{d} \\
a^{(p)}_{\overline{n}|} &= \frac{1}{p}v^{1/p}+\frac{1}{p}(v^{1/p})^2+\cdots+\frac{1}{p}(v^{1/p})^{np} = \frac{1-v^n}{i^{(p)}} \\
a^{(p)}_{\overline{n}|} &= \frac{i}{i^{(p)}}a_{\overline{n}|} \\
\ddot{a}^{(p)}_{\overline{n}|} &= \frac{1}{p}\sum_{k=0}^{np-1}(v^{1/p})^k = \frac{1-v^n}{p[1-v^{1/p}]} = \frac{1-v^n}{d^{(p)}} \\
\ddot{a}^{(p)}_{\overline{n}|} &= \frac{d}{d^{(p)}}\ddot{a}_{\overline{n}|} \\
\lim_{p\to\infty} a^{(p)}_{\overline{n}|} &= \lim_{p\to\infty}\ddot{a}^{(p)}_{\overline{n}|} = \frac{1-v^n}{\delta}
\end{aligned}
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