**Řízení finančních a bankovních rizik – vybrané vzorce:**

**Metody měření finančních rizik:**

|  |  |
| --- | --- |
|  |  |

$$VaR= \sqrt{X^{T}×C ×X } × \sqrt{T}$$

|  |  |
| --- | --- |
| $$C= \left|\begin{matrix}\begin{matrix}\begin{matrix}1\\k\_{2,1}\end{matrix}\\k\_{3,1}\end{matrix}&\begin{matrix}\begin{matrix}k\_{1,2}\\1\end{matrix}\\k\_{3,2}\end{matrix}&\begin{matrix}\begin{matrix}\begin{matrix} k\_{1,3}& …&k\_{1,n}\end{matrix}\\\begin{matrix} k\_{2,3}& …&k\_{2,n}\end{matrix}\end{matrix}\\\begin{matrix} 1& …& k\_{3,n}\end{matrix}\end{matrix}\\…&…&\begin{matrix}…& …& …\end{matrix}\\k\_{n,1}&k\_{n,2}&\begin{matrix}k\_{n,3}&…& 1\end{matrix}\end{matrix}\right|$$ | $$X=\left|\begin{matrix}VaR\_{1}\\VaR\_{2}\\\begin{matrix}VaR\_{3}\\\begin{matrix}…\\VaR\_{n}\end{matrix}\end{matrix}\end{matrix}\right|= \left|\begin{matrix}konst. × σ\_{1} × V\_{01}\\konst. × σ\_{2} × V\_{02}\\\begin{matrix}konst. × σ\_{3} × V\_{03}\\\begin{matrix}…\\konst. × σ\_{n} × V\_{0n}\end{matrix}\end{matrix}\end{matrix}\right|$$ |

**Modely měření úvěrového rizika:**

|  |  |
| --- | --- |
| $$DPT=krátk. dluhy+\frac{1}{2}dlouh. dluhů$$ | $$DD=\frac{E\left(V\_{1}\right)-DPT}{σ}$$ |

|  |  |
| --- | --- |
| $$p\_{1}= \frac{1+ i\_{1}}{1+ k\_{1}}$$ | $$p\_{1}^{\*}=1- p\_{1}$$ |

**Transfer úvěrového rizika:**

$$Platba ze swapu=F+ \frac{P\_{T}- P\_{0}}{P\_{0}}$$

**Měření tržního rizika:**

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**Výnosnost banky:**

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| --- | --- |
| $$ROA= \frac{zisk}{celková aktiva}$$ | $$ROE= \frac{zisk}{celkový kapitál}$$ |

|  |  |
| --- | --- |
| $$RAROC= \frac{zisk-EL}{CaR \left(nebo UL\right)}$$ |  |

|  |  |
| --- | --- |
| $$WACC= r\_{D }\left(1-t\right)× \frac{D}{A}+ r\_{E} × \frac{E}{A}$$ | $$r \geq oc+el+i+ \left(WACC-i\right) × \frac{CaR}{E}$$ |