Decomposition of $var(u_i)$

$$
\begin{aligned}
var(u_i) &= var(1/2\, u_s + 1/2\, u_d + m_i) \\
&= var(1/2\, u_s) + var(1/2\, u_d) + var(m_i) \\
&\quad + 2\,cov(1/2\, u_s, 1/2\, u_d) \\
&\quad + 2\,cov(1/2\, u_s, m_i) \\
&\quad + 2\,cov(1/2\, u_d, m_i) \quad \} = 0 \\
&= 1/4\, var(u_s) + 1/4\, var(u_d) + var(m_i) \\
&\quad + 1/2\, cov(u_s, u_d)
\end{aligned}
$$