Figure S5  The evolution of multivariate maternal effects in a stochastically fluctuating environment, where the selective optimum $\theta_j(t-1)$ in the parental generation is correlated with $\theta_i(t)$ in the offspring generation. Panel A: the cross-correlation between optimum $\theta_2(t-1)$ and $\theta_1(t)$ is varied from $-1$ to 1, while the other cross-correlation $\text{cor}(\theta_1(t-1), \theta_2(t))$ is constrained between values 0 and $-0.1$. As a consequence, the cross-trait maternal effect $m_{12}$ from maternal trait $z^*_2(t-1)$ to offspring trait $z_1(t)$ evolves from negative to positive values, in line with the dominant cross-correlation. Panel B: now, the cross-correlation between optimum $\theta_1(t-1)$ and $\theta_2(t)$ is varied from $-1$ to 1, while the other cross-correlation is constrained to much smaller values. Again, we find that the corresponding cross-trait maternal effect $m_{21}$ from maternal trait $z^*_1(t-1)$ to offspring trait $z_2(t)$ evolves from negative to positive, in line with the cross-correlation. In both panels, the within-trait autocorrelations $\text{cor}(\theta_1(t-1), \theta_1(t)) = \text{cor}(\theta_2(t-1), \theta_2(t)) = \rho$ are set at $\rho = 0.1$. Parameters: $\mu = 0.01$, $\phi = 0$, $c = 0.1$, $\sigma_\varepsilon = 0.32$.  


Figure S5: