

FIGURE 1. (New Harder Shortest Path) Methods must identify and then choose between a safe (red) path, and a risky (blue) path. For red arcs (safe path) $f^*(x) = 2$ for all x. For the blue arcs (risky path), $\mathbb{E}[Y|X] = f^*(X) = 4x$ if $0 \le x \le 0.55$ and $f^*(x) = 2.2$ otherwise. Other arcs are generated as before but shifted up by 2.2. Panel b) is analogous Fig. 4 of our paper.

n	noise	h	avg	std		n	noise	h	avg	st
1600	normal	0.001	0.048	0.004		1600	normal	0.001	0.004	0.00
1600	normal	0.025	0.047	0.004		1600	normal	0.025	0.003	0.00
1600	normal	0.158	0.046	0.004		1600	normal	0.158	0.002	0.00
1600	normal	0.398	0.047	0.009		1600	normal	0.398	0.003	0.00
1600	unif	0.001	0.070	0.006		1600	unif	0.001	0.004	0.00
1600	unif	0.025	0.070	0.006		1600	unif	0.025	0.004	0.00
1600	unif	0.158	0.069	0.006		1600	unif	0.158	0.002	0.00
1600	unif	0.398	0.070	0.012		1600	unif	0.398	0.004	0.00
(A) Hold-Out Cross-Val						(B) OOS				

FIGURE 2. (Dependence on h for Harder Shortest Path Experiment.) Method is robust to choice of h.



FIGURE 3. (Real Data Portfolio Optimization from [26]) Y_t is sampled randomly from 10 years of monthly returns from 12 Fama French Industry Sector portfolios. $X_t = Y_{t-1} + \mathcal{N}(0, .5\Sigma)$ with $\Sigma = \operatorname{cov}(X)$.