

## A heading

### Slide 1

One thing this example illustrates is how the `article` style option is good for printing slides two-up, for distribution to a seminar audience or class, or just for proofreading.

**Definition:**  $p$  (weakly) first-order stochastically dominates  $q$  if for every  $\bar{z} \in Z$ ,

$$p(z \leq \bar{z}) \leq q(z \leq \bar{z})$$

## Problems with stochastic dominance as a DT

### Slide 2

$z$	$p(z)$
\$999	.01
\$1,000,000	.99

$z$	$q(z)$
\$1,000	1

### Candidate Theory #3: Expected utility

#### Slide 3

Let  $Z$  be an arbitrary set of outcomes. Let  $u : Z \rightarrow R$  be a utility representation of the DM's preferences over the elements of  $Z$  as certain outcomes. (I.e.,  $u(y) \geq u(z)$  iff  $y \geq z$ .)

### Expected utility & the St. Petersburg Paradox

#### Slide 4

This can get around even St. Petersburg Paradox, because we don't require that utility be linear in money:

Prize	\$2	\$4	\$8	\$16	...
$u(z) = \log_2(z)$	1	2	3	4	...
Prob.	1/2	1/4	1/8	1/16	...

Expected utility is  $\sum_{k=1}^{\infty} k/2^k = 2$ , and so lottery gives same expected utility as getting \$4 for sure.