Uncertainty in Cash Flows

James Woods

5/19/2016

Why Uncertainty and Sensitivity?

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- We really don't know

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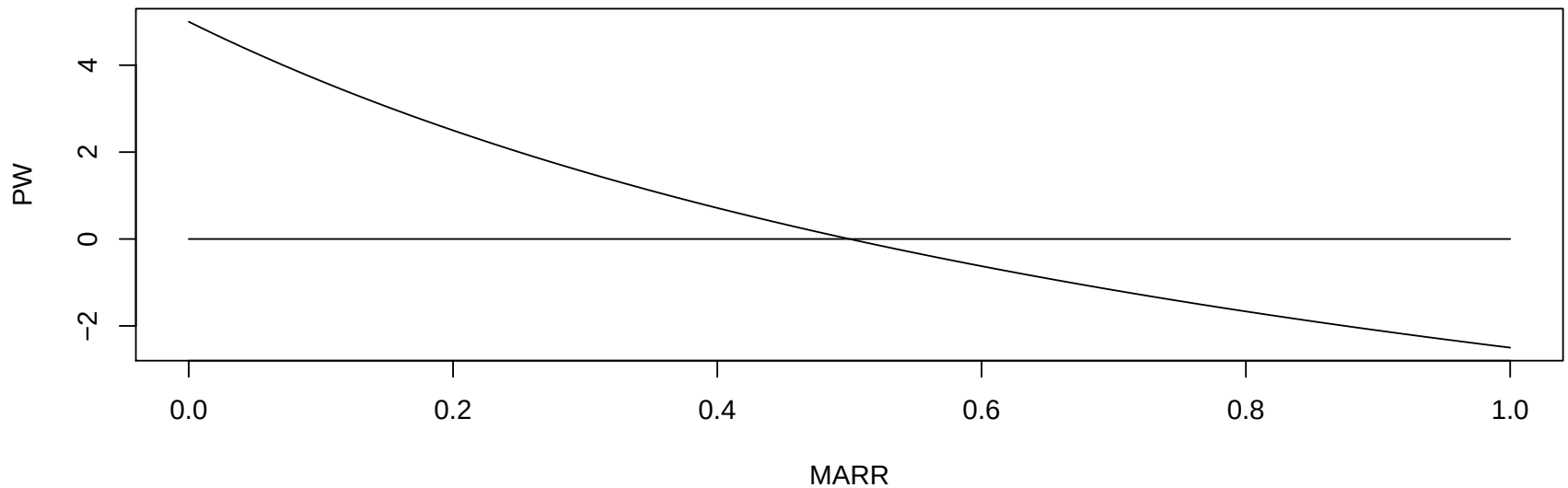

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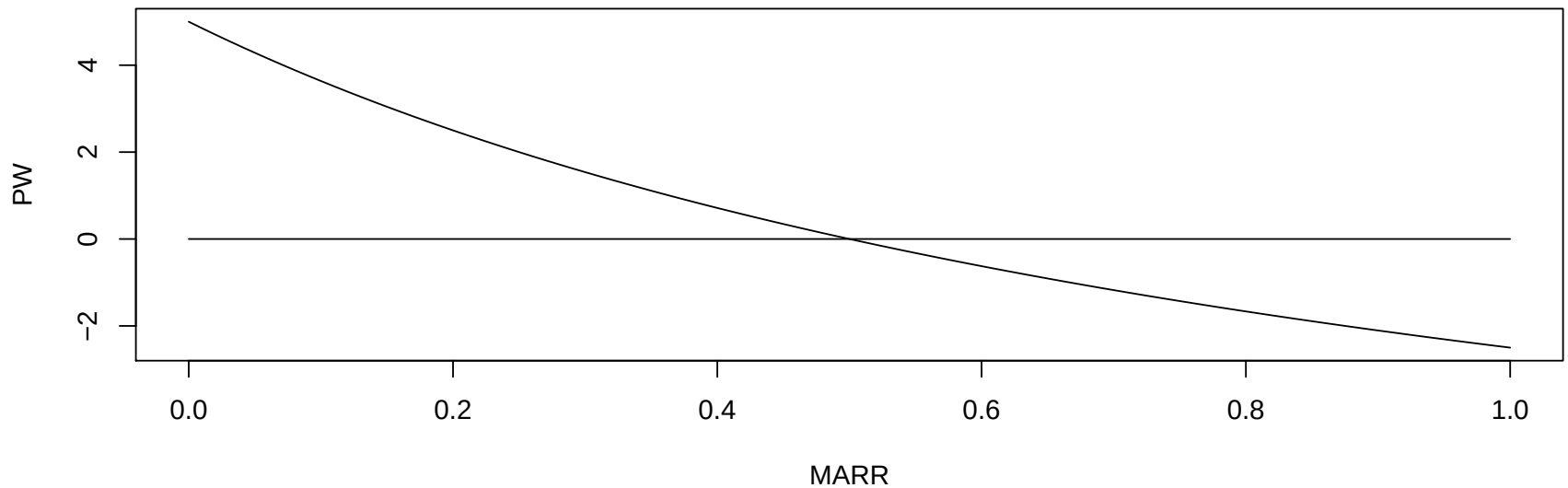

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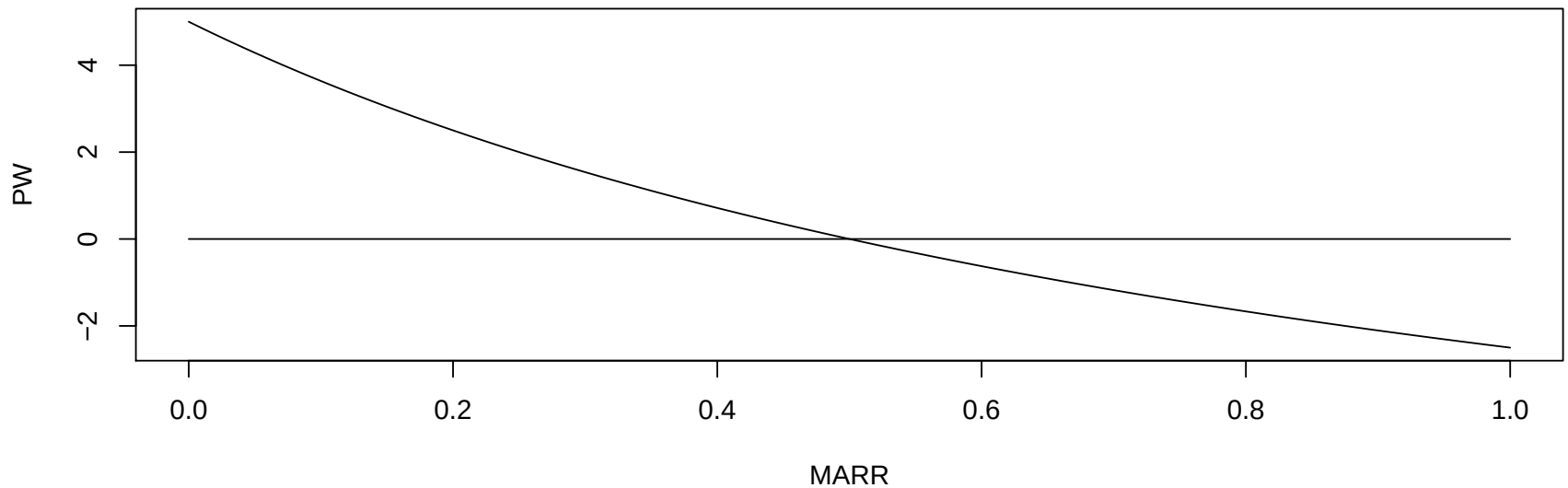

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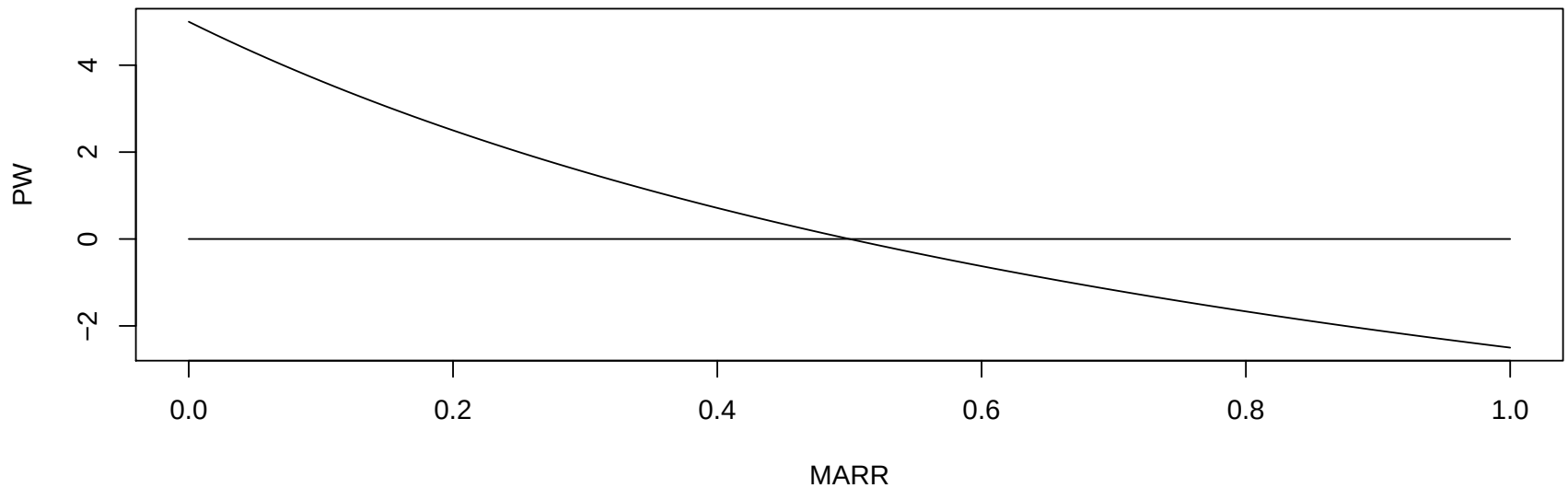

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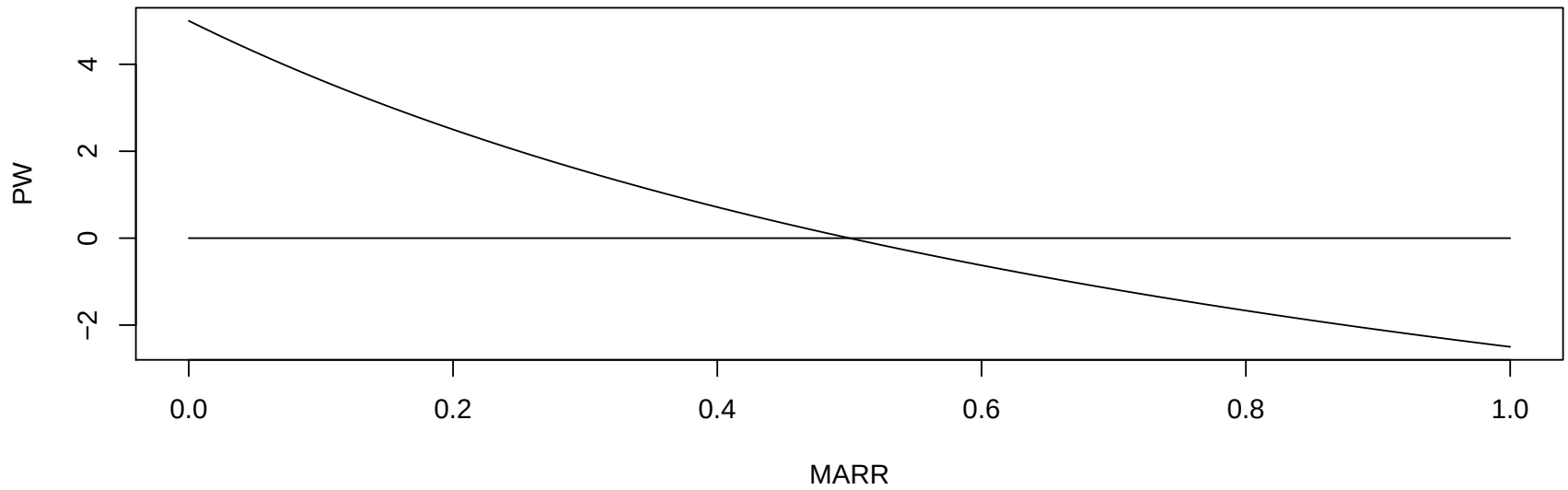

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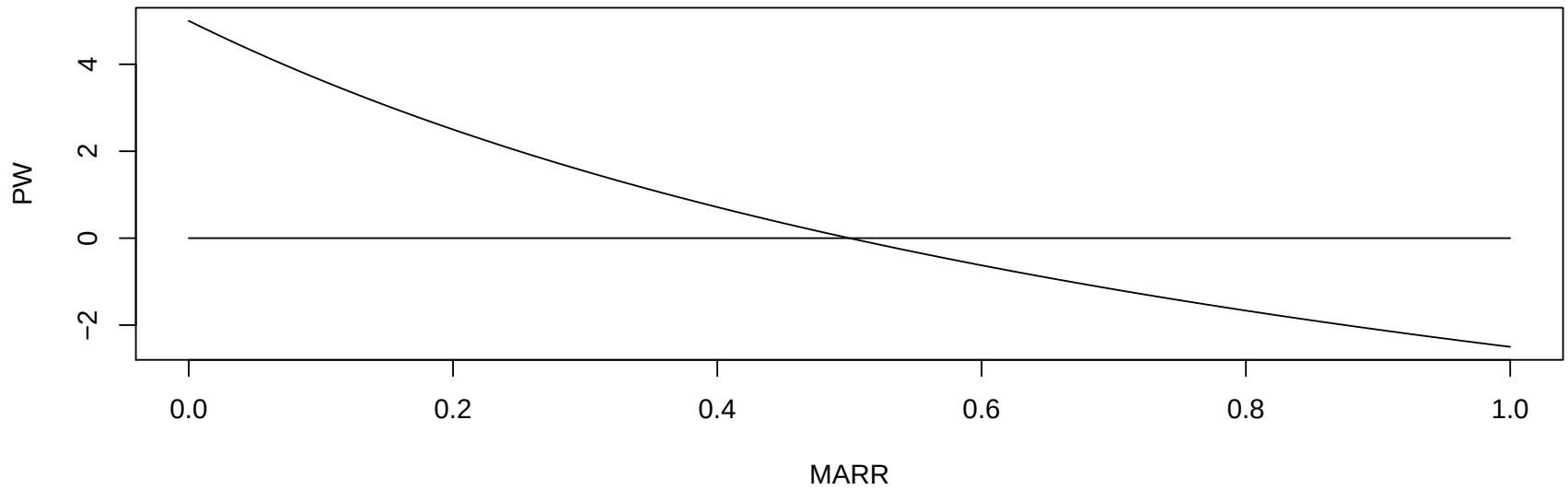

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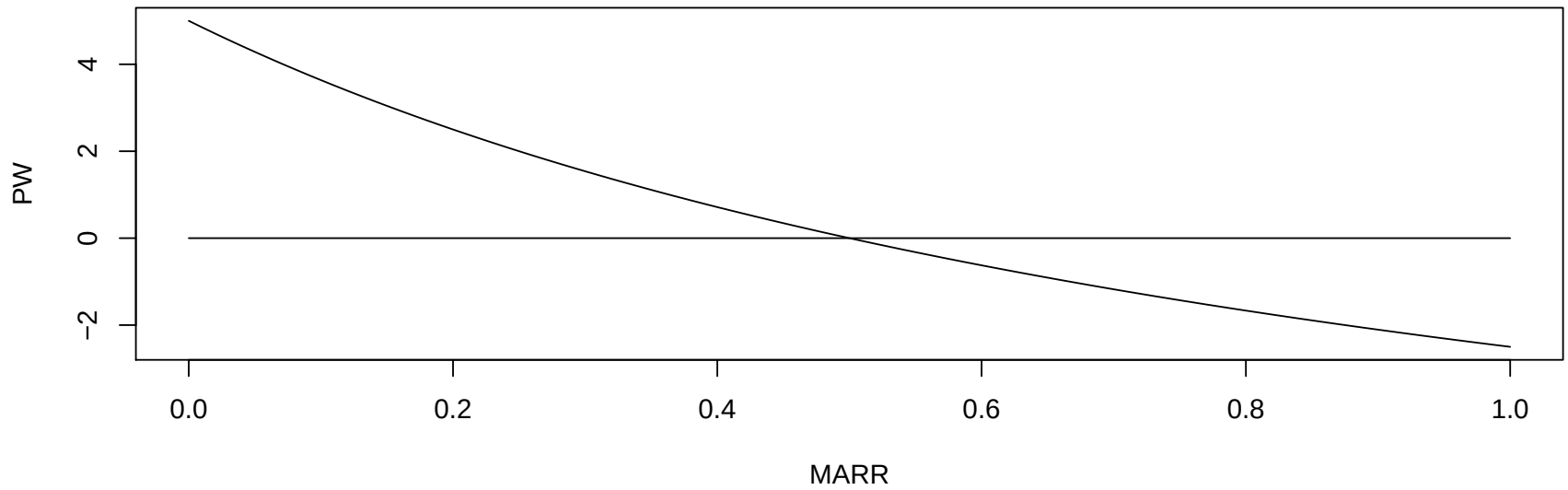

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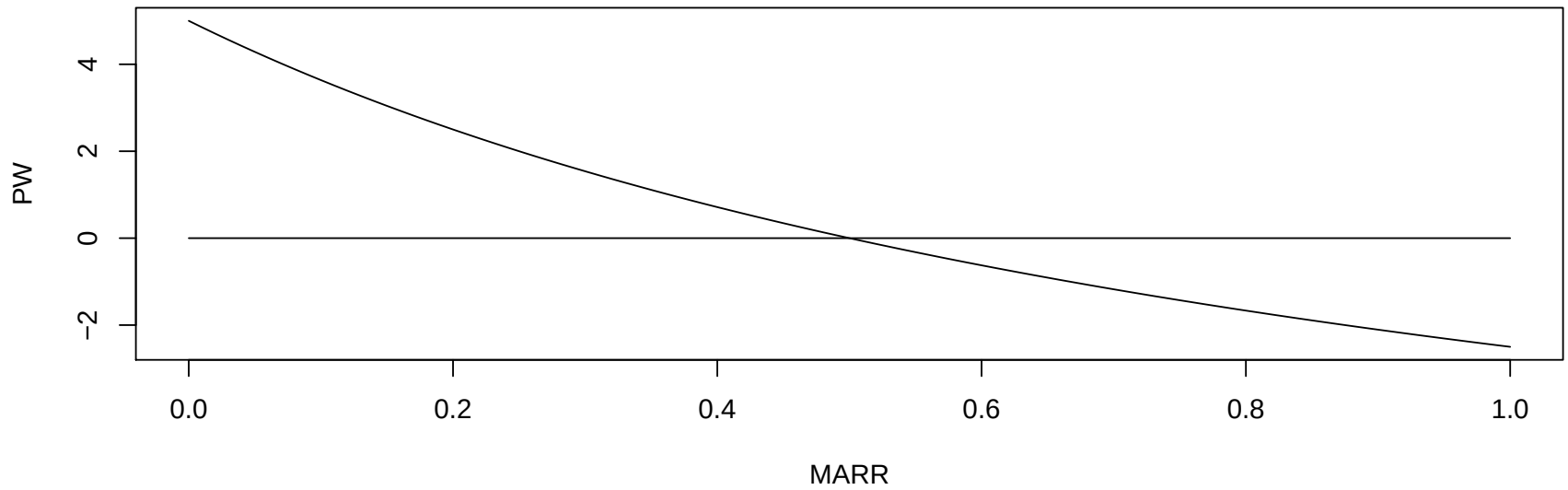

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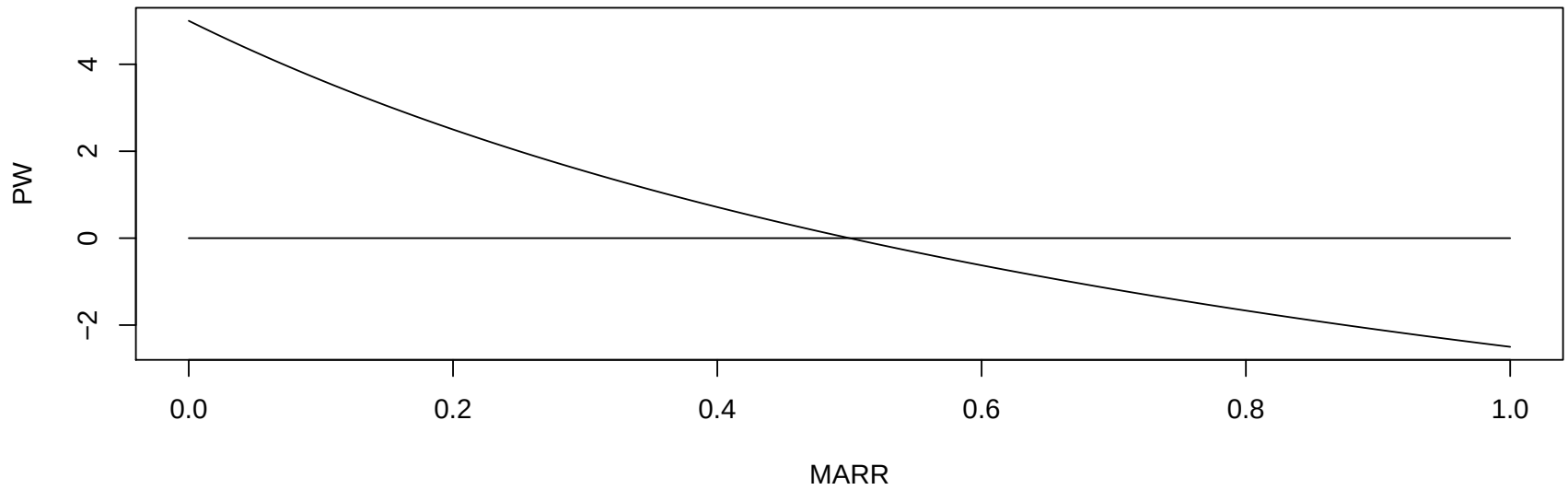

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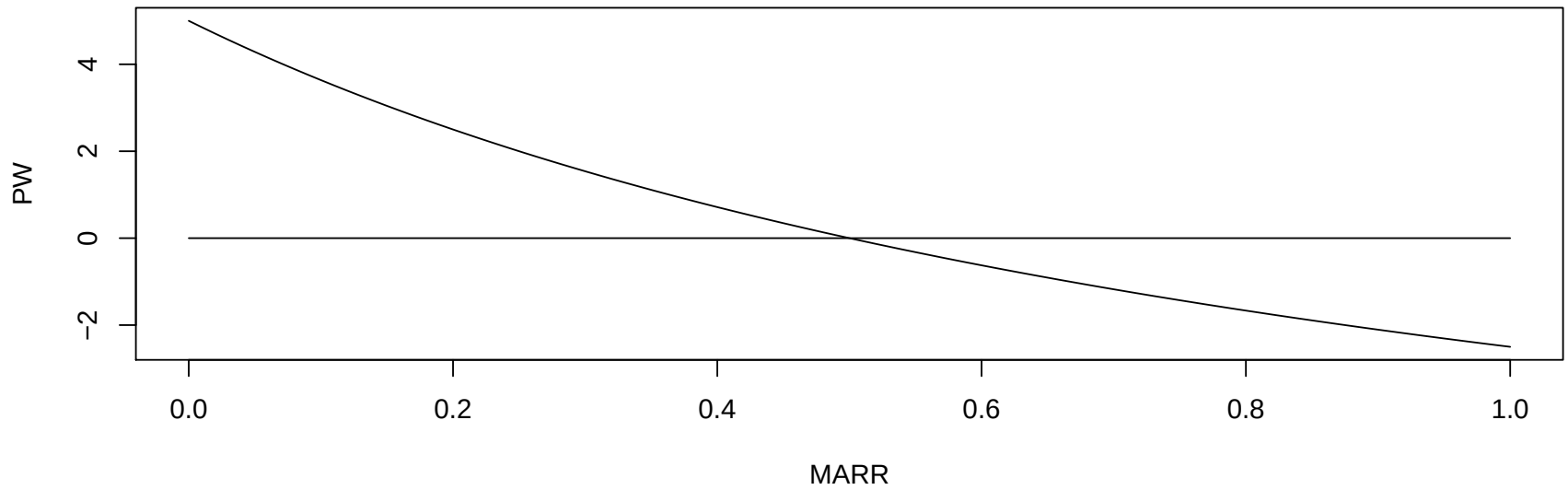

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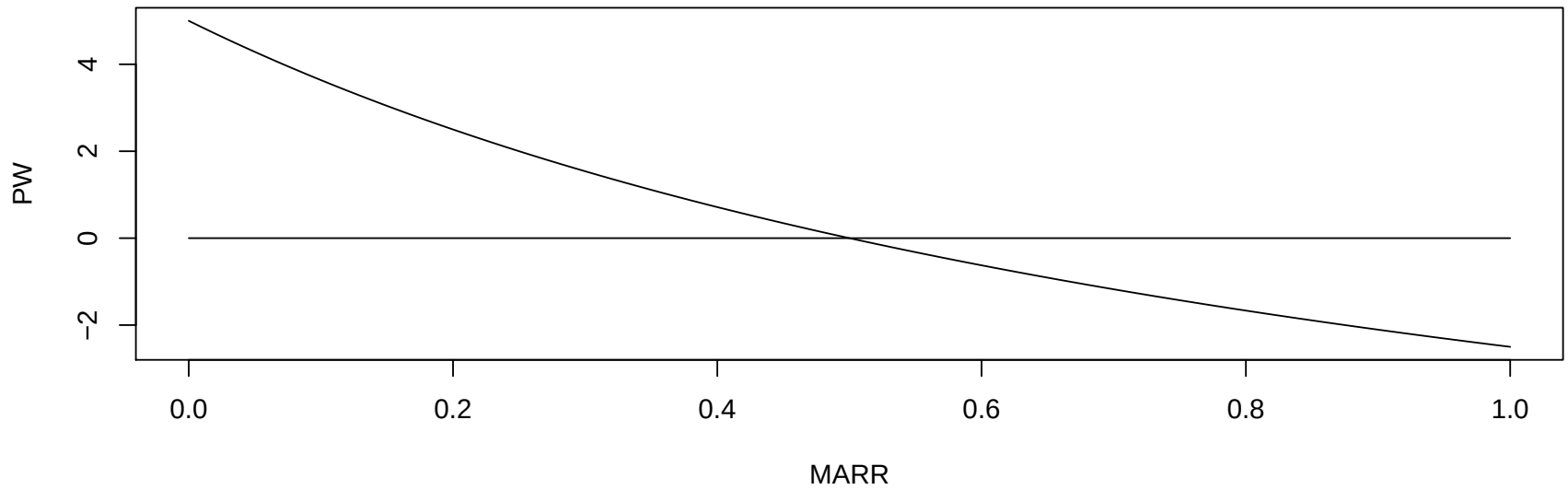

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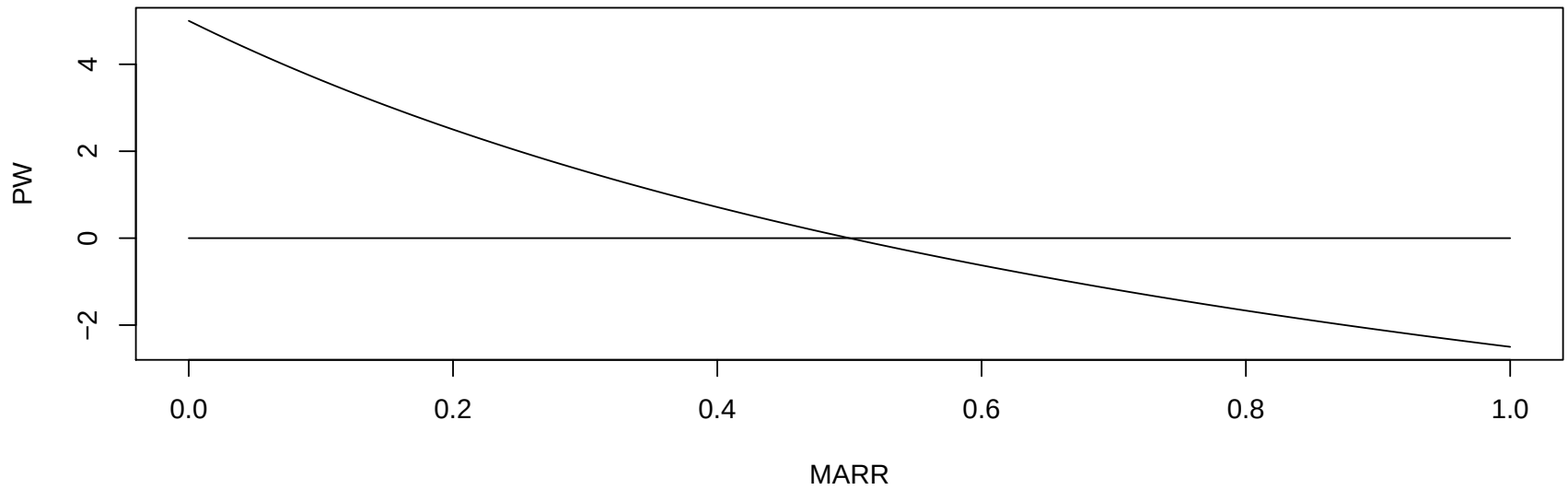

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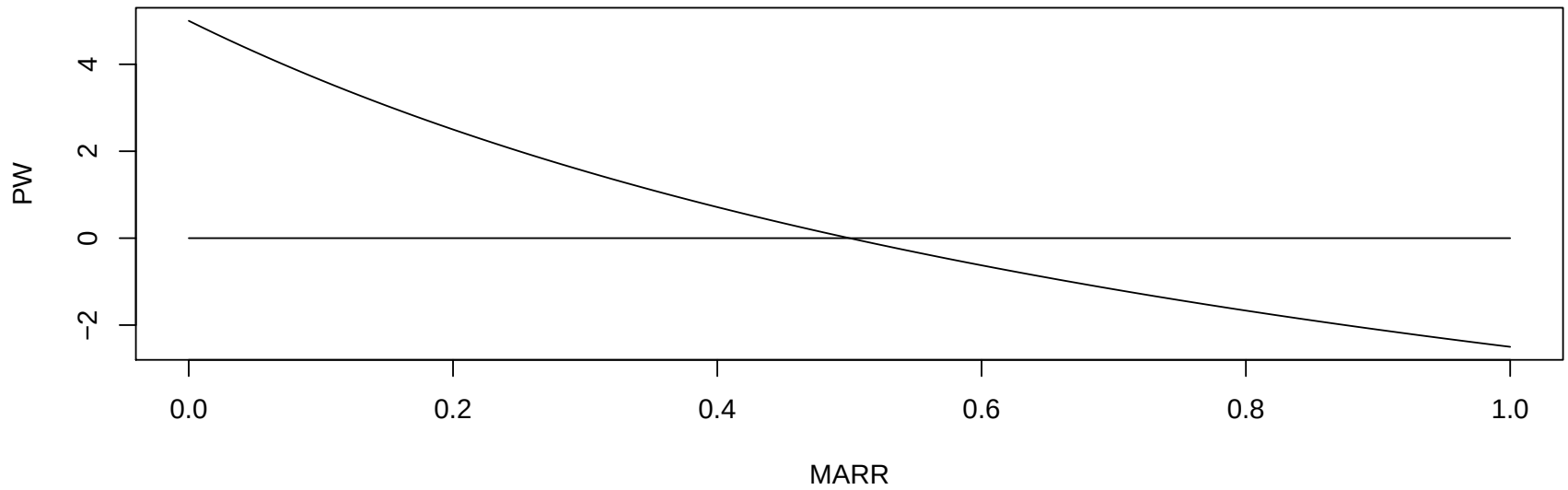

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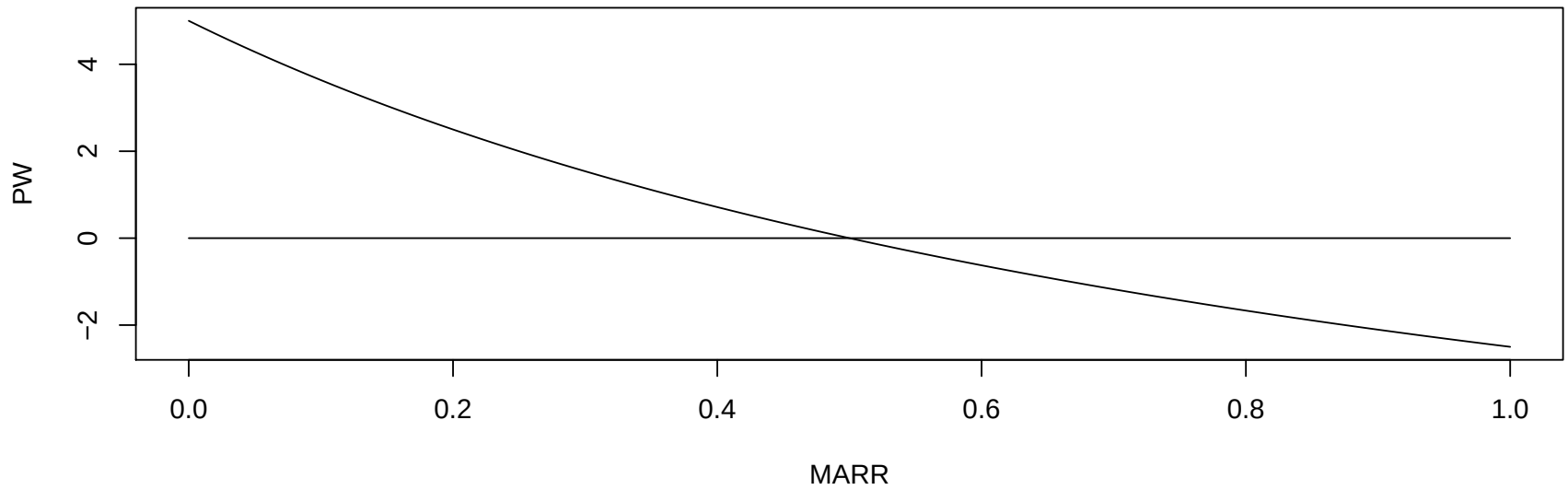

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Simple How To

PW Example

Consider a simple constant series that we can describe the present worth with factor notation:

$$P = C + A(P|A, i = r, N = n)$$

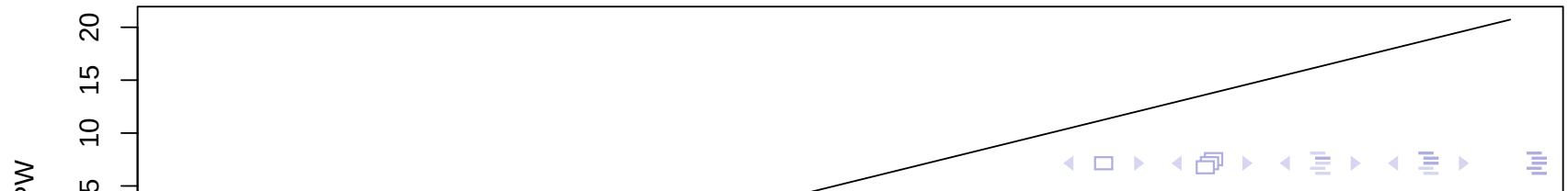
Lots of parameters to vary:

- A, the size of the constant benefits.
- r, the discount rate
- n, how long you get payments
- C, the inital cost

We warned you about r and n so lets vary just A

PW Figure

r = .1, n = 10, C = -10, $A \in [0, 5]$



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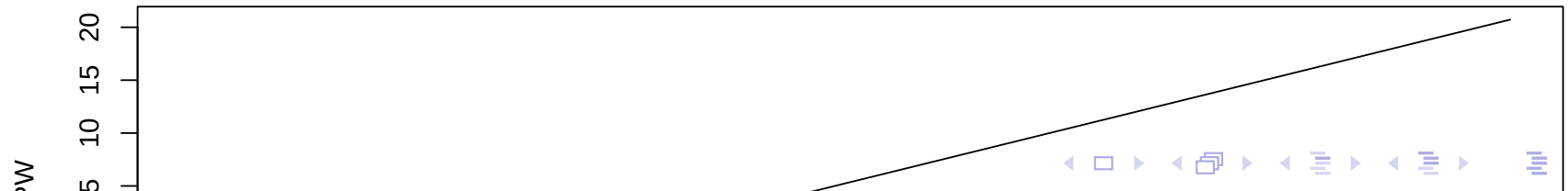

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Consider a simple constant series that we can describe the present worth with factor notation:

$$P = C + A(P|A, i = r, N = n)$$

Lots of parameters to vary:

- A, the size of the constant benefits.
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We warned you about r and n so lets vary just A

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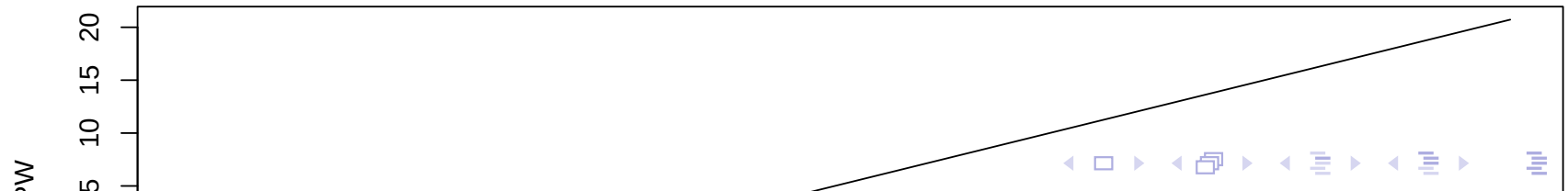

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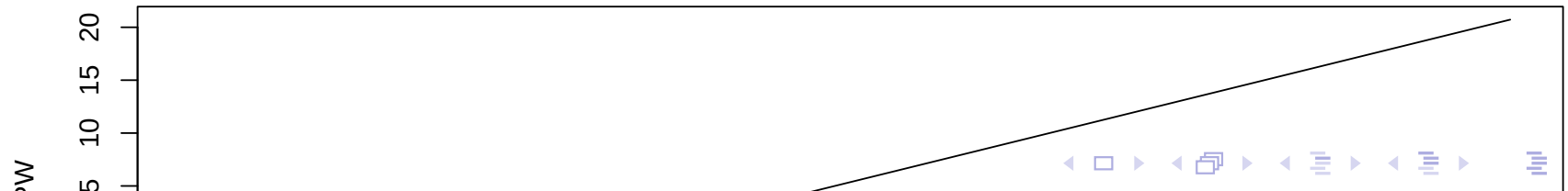

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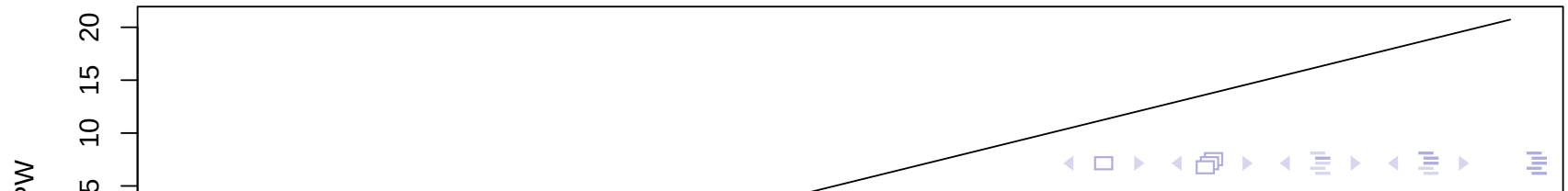

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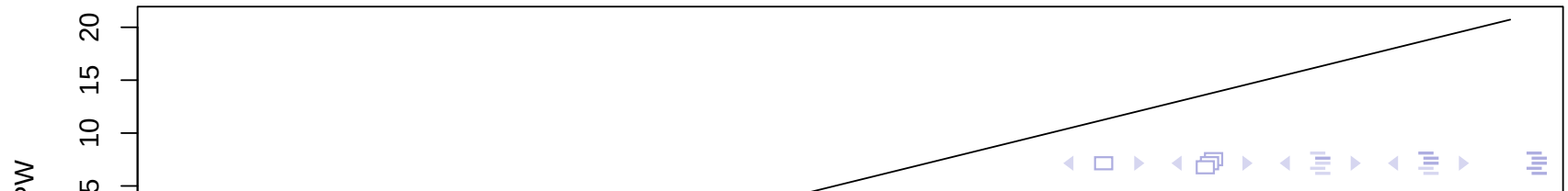

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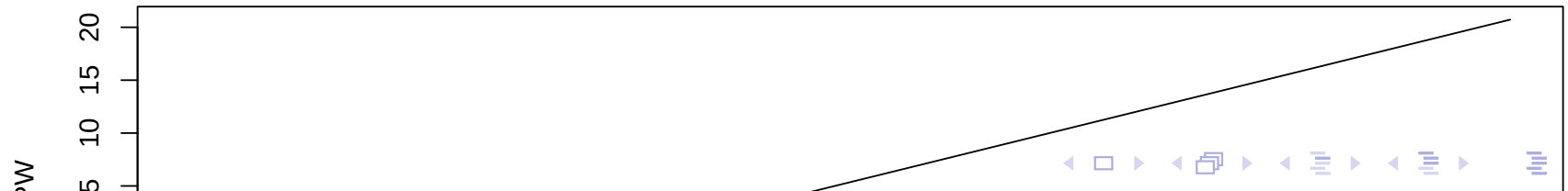

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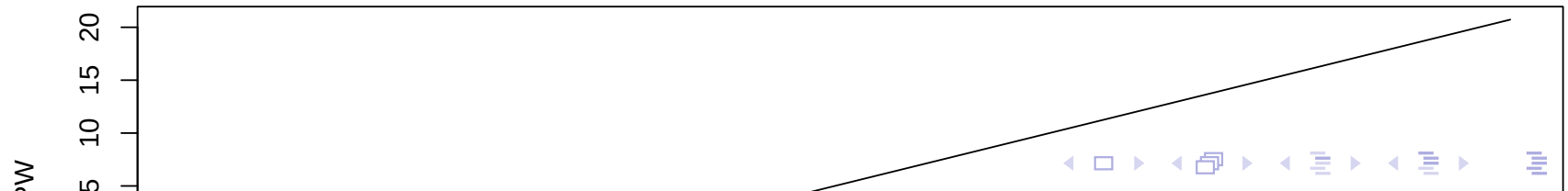

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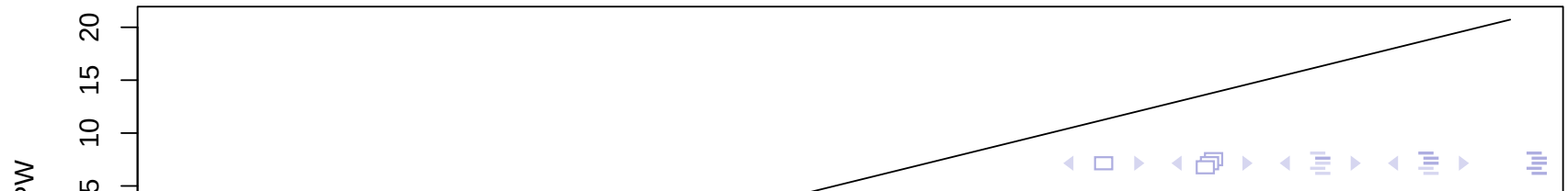

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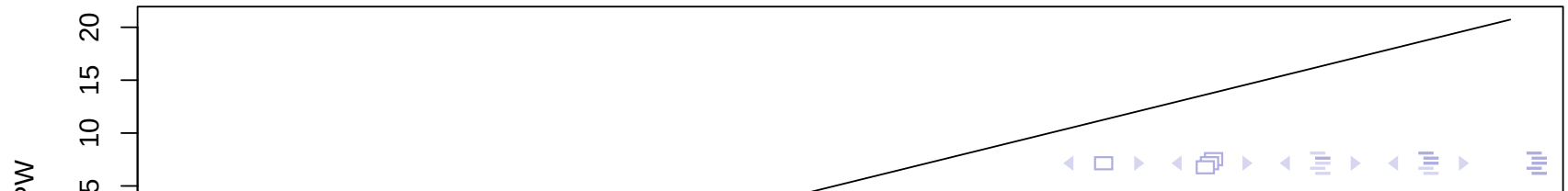

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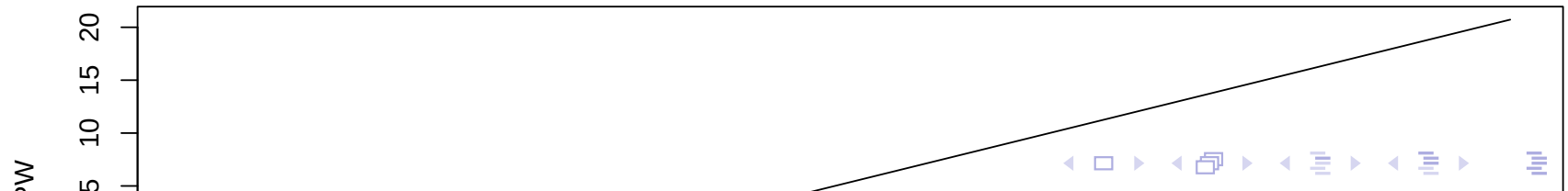

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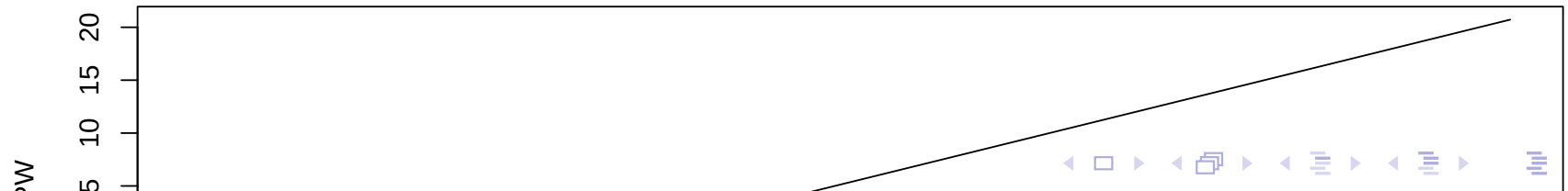

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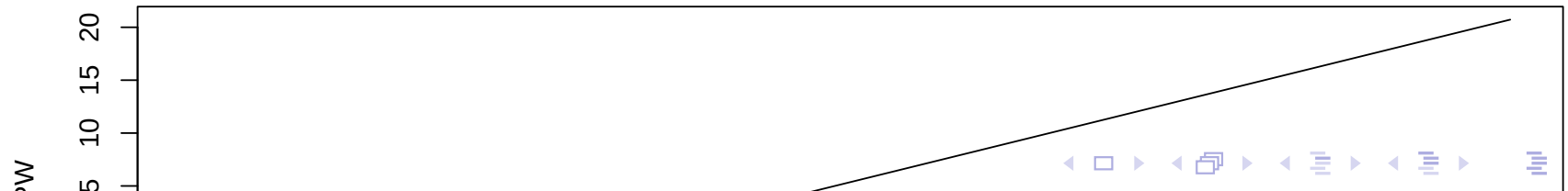

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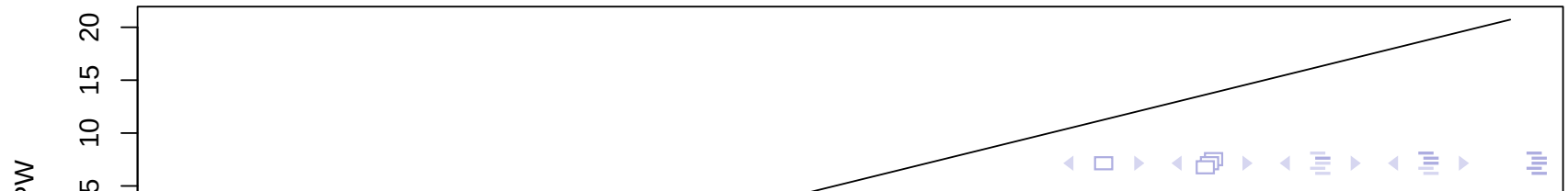

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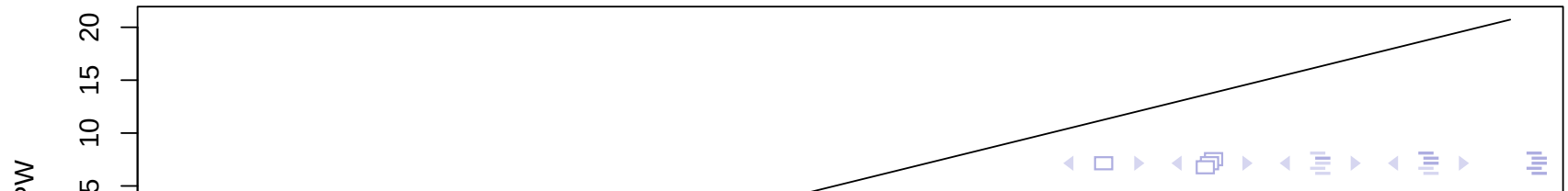

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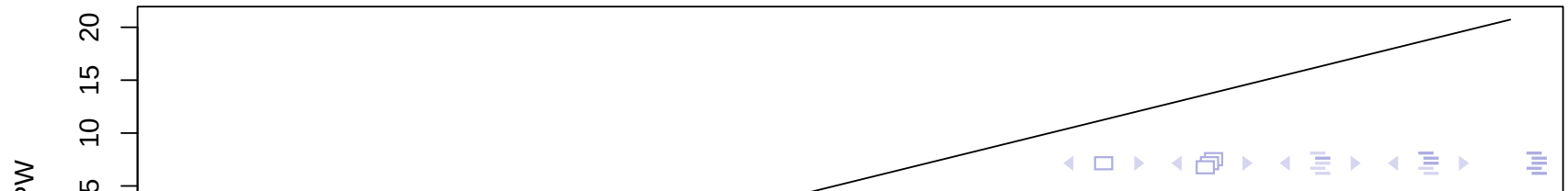

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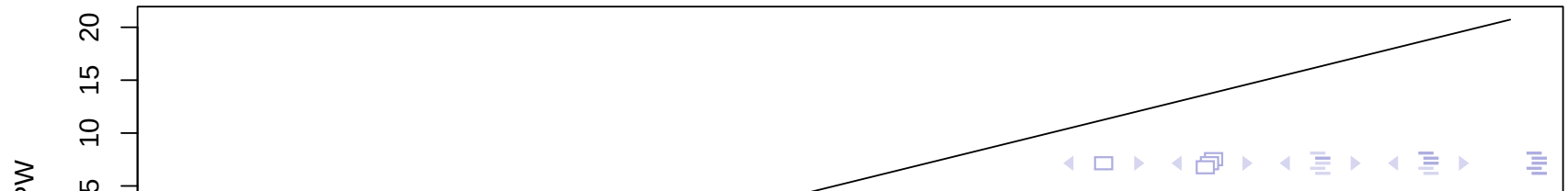

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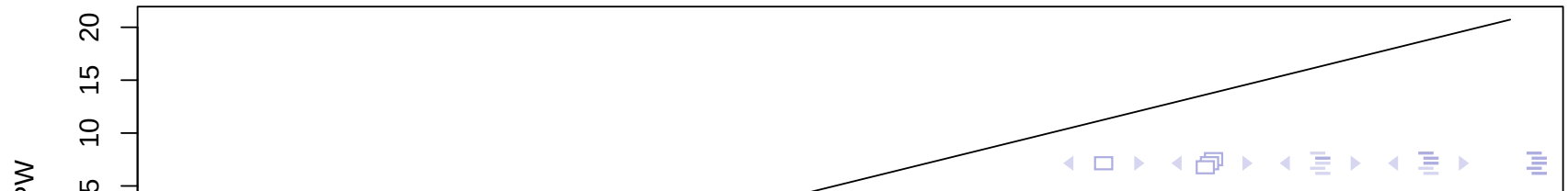

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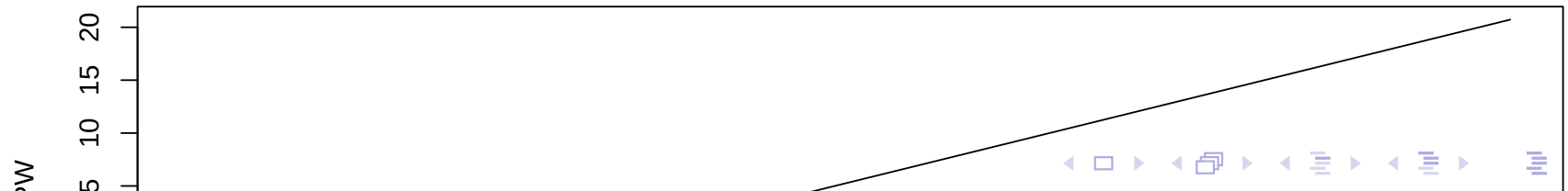

Priors for Sensitivity Analysis

- In the examples above we just picked bounds.

Single Person

Multi-Person

Joint Distributions

Priors for Sensitivity Analysis

- In the examples above we just picked bounds.
- Book gives some bad advice on how to pick the design points, bounds, in a sensitivity analysis, $\pm$ 20%.

Single Person

Multi-Person

Joint Distributions

Multiple Parameter Sensitivity

Spider Graphs

Monte Carlo Simulations

Interested in More?