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Toronto Health Economics and
Technology Assessment Collaborative

Investment and disinvestment of health technologies: the need for two cost-effectiveness thresholds

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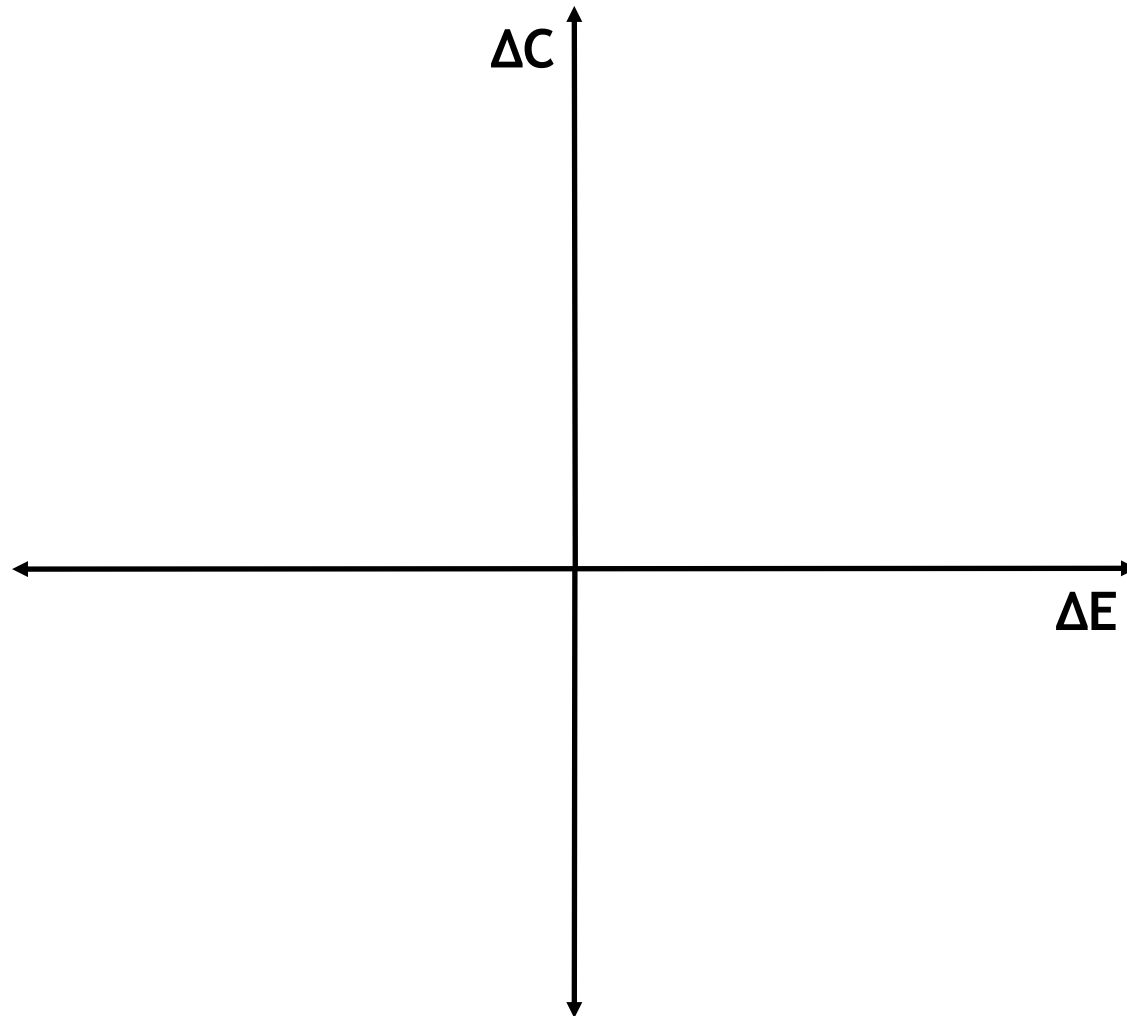
PEER Rounds, 24 August 2012

Summary

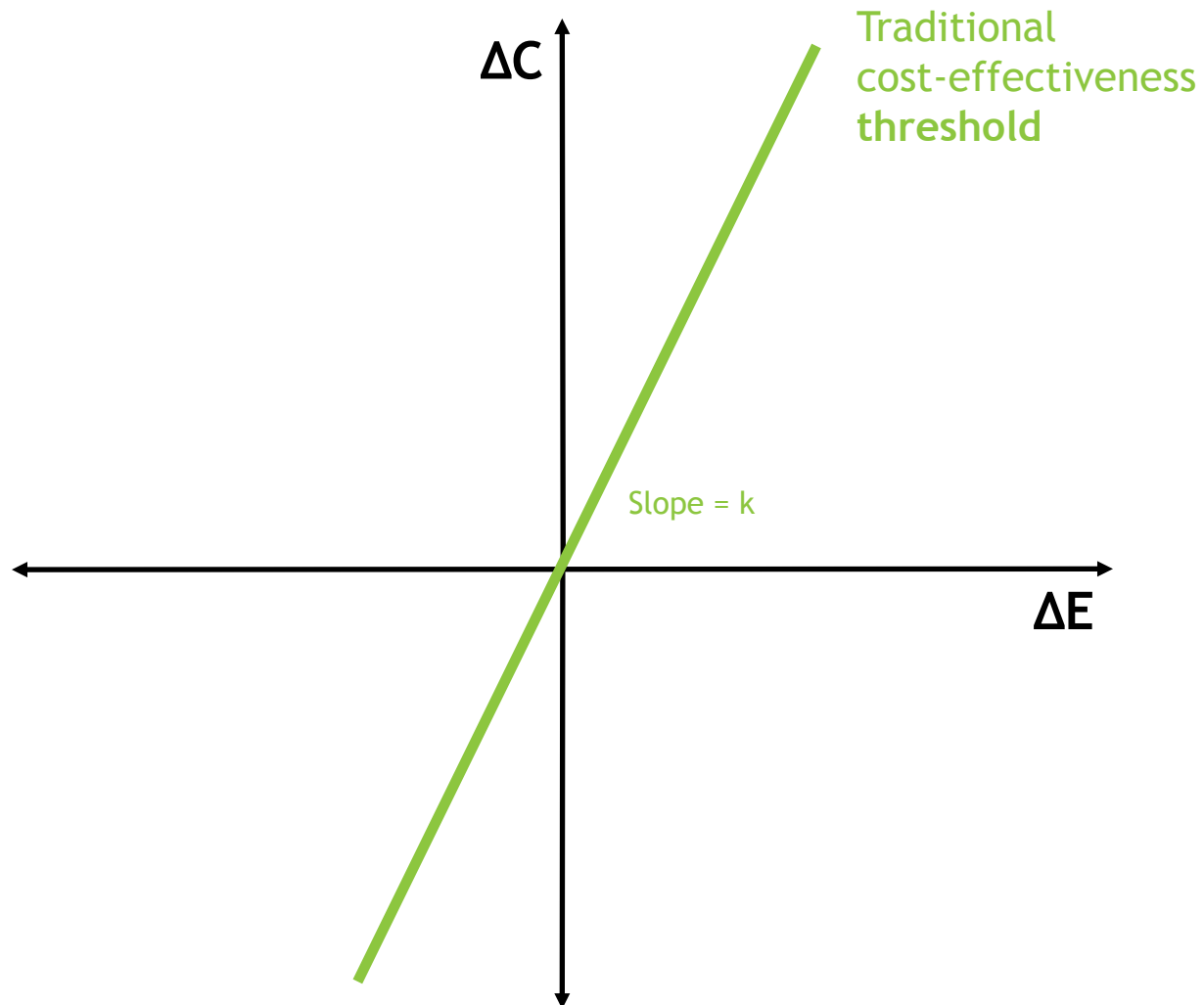
- A cost-effectiveness **threshold** has been adopted implicitly or explicitly by policy makers in numerous jurisdictions
- This paper argues that, under very weak assumptions, **separate** thresholds should be adopted for **investment** and **disinvestment** decisions



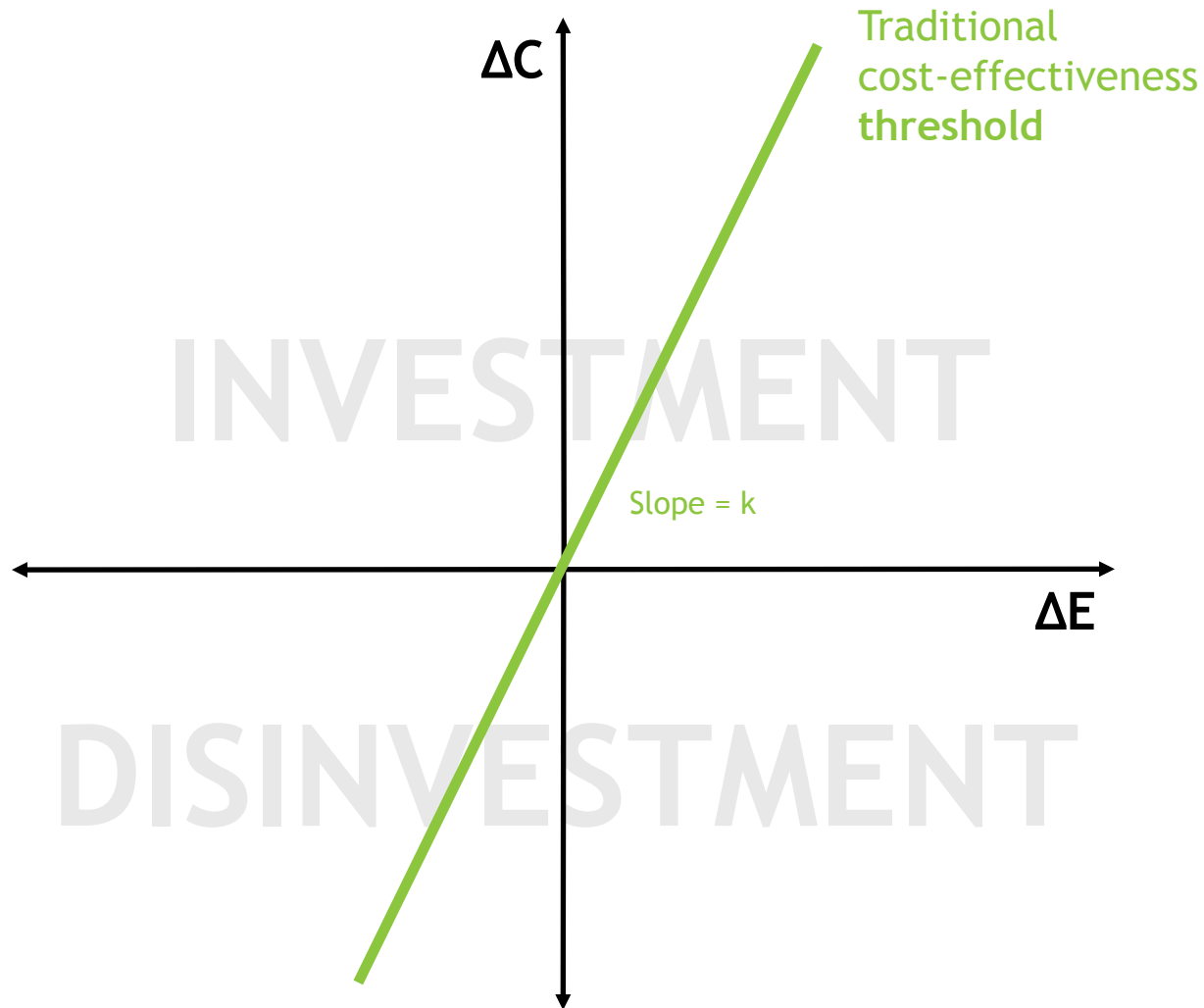
The CE plane



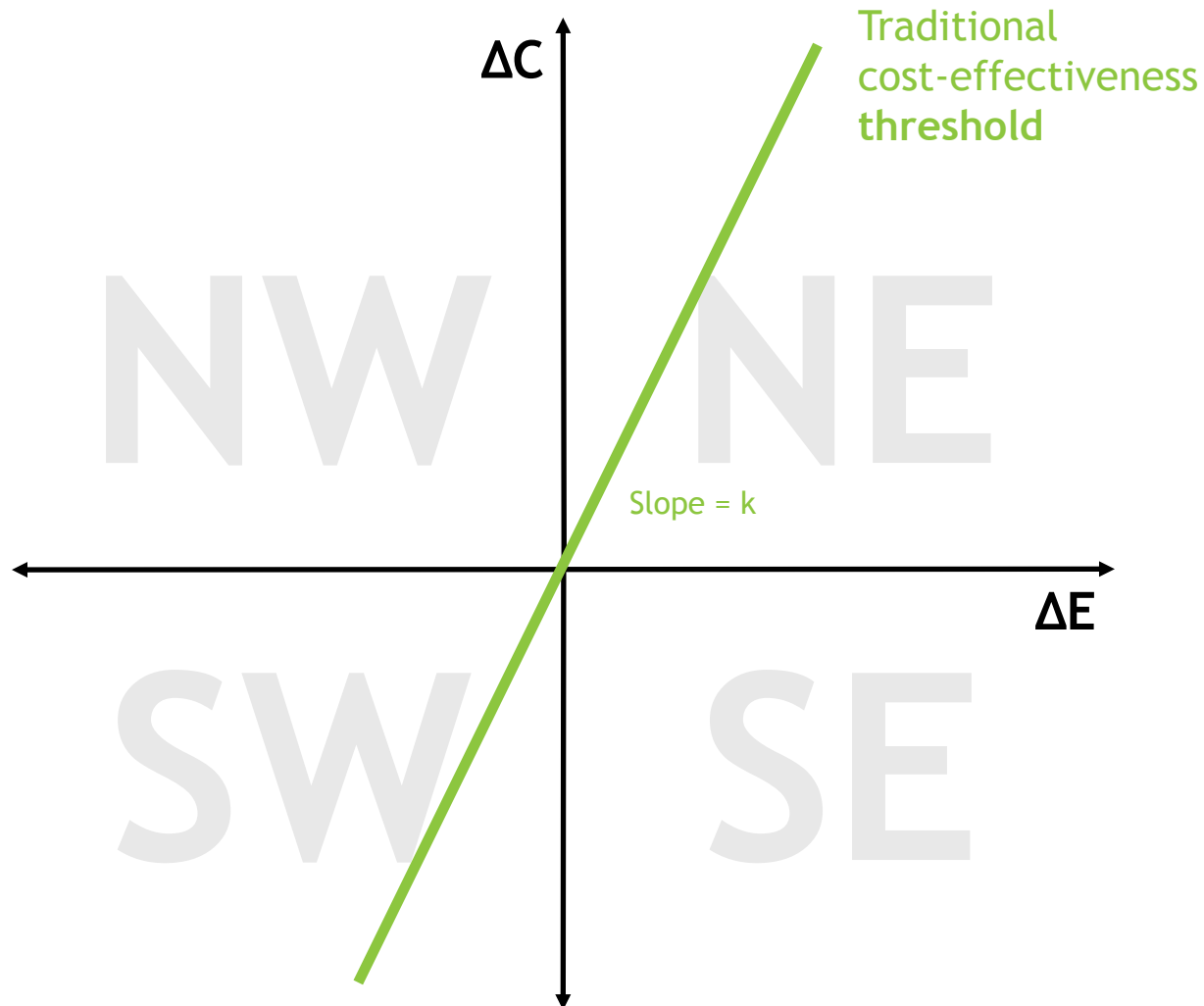
The CE plane



The CE plane



The CE plane



Outline of the presentation

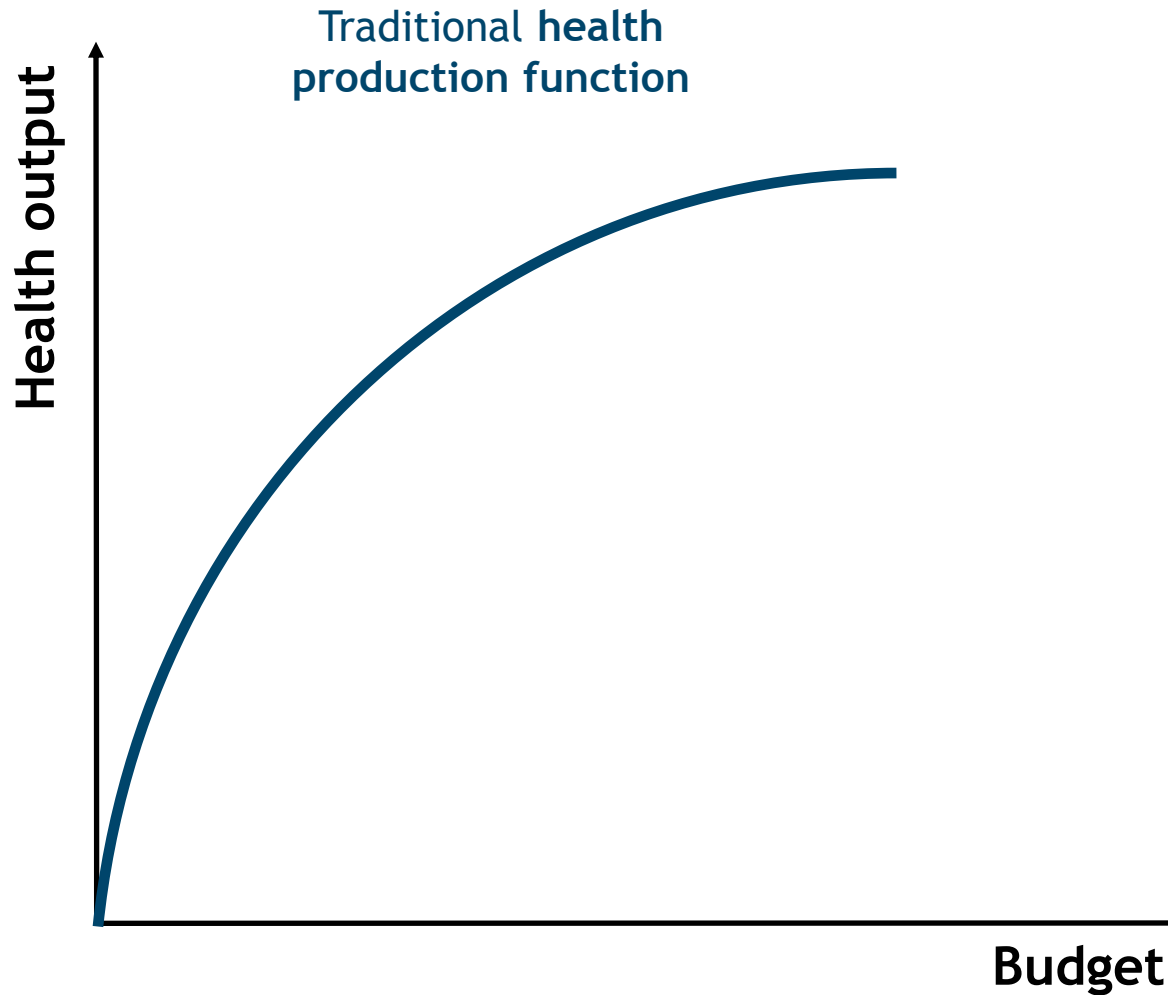
- **The health production function**
- **Why this function might be “kinked”**
- **Why a kink in the health production function results in two thresholds**
- **Relationship between the CE plane and the health production function**
- **Possible implications**



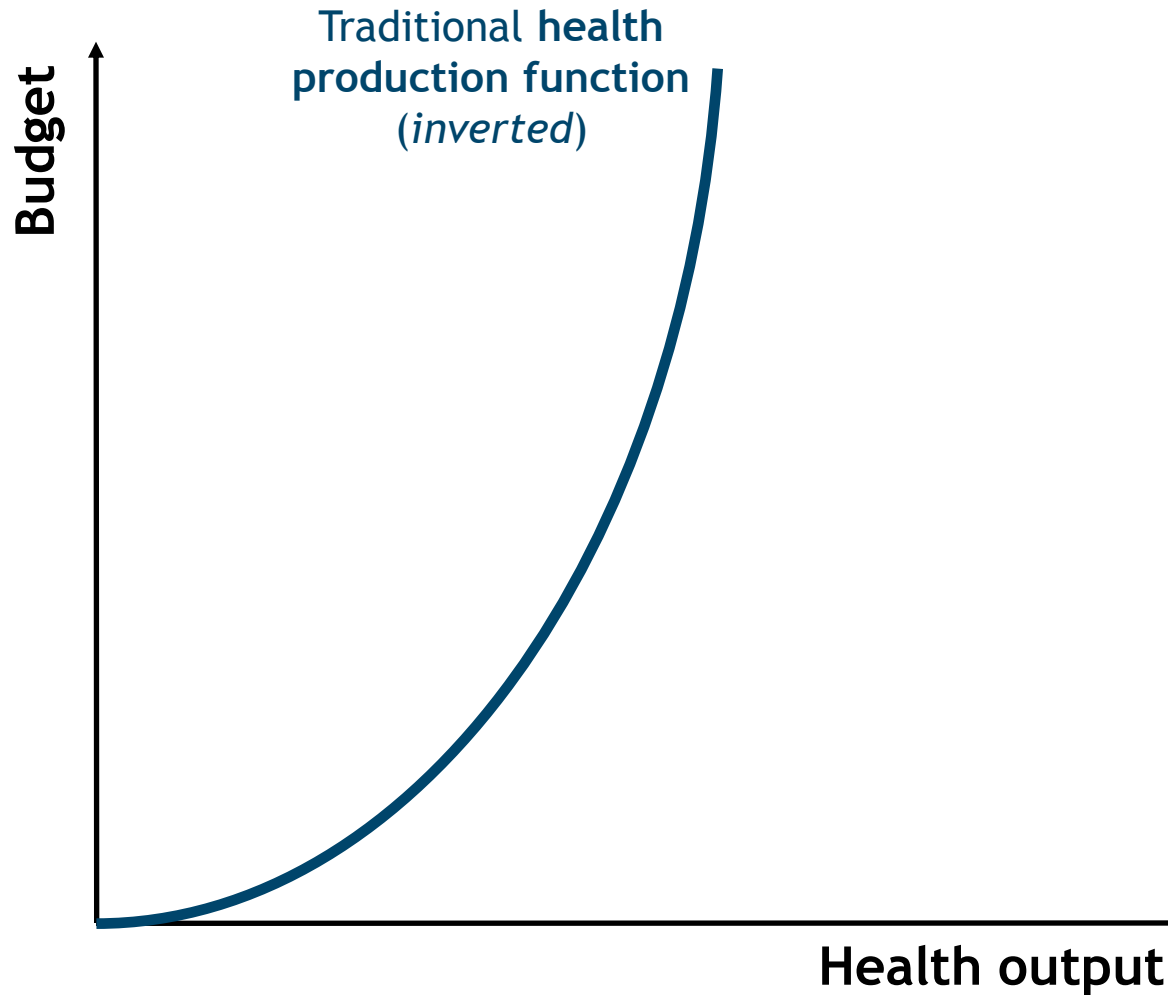
The health production function



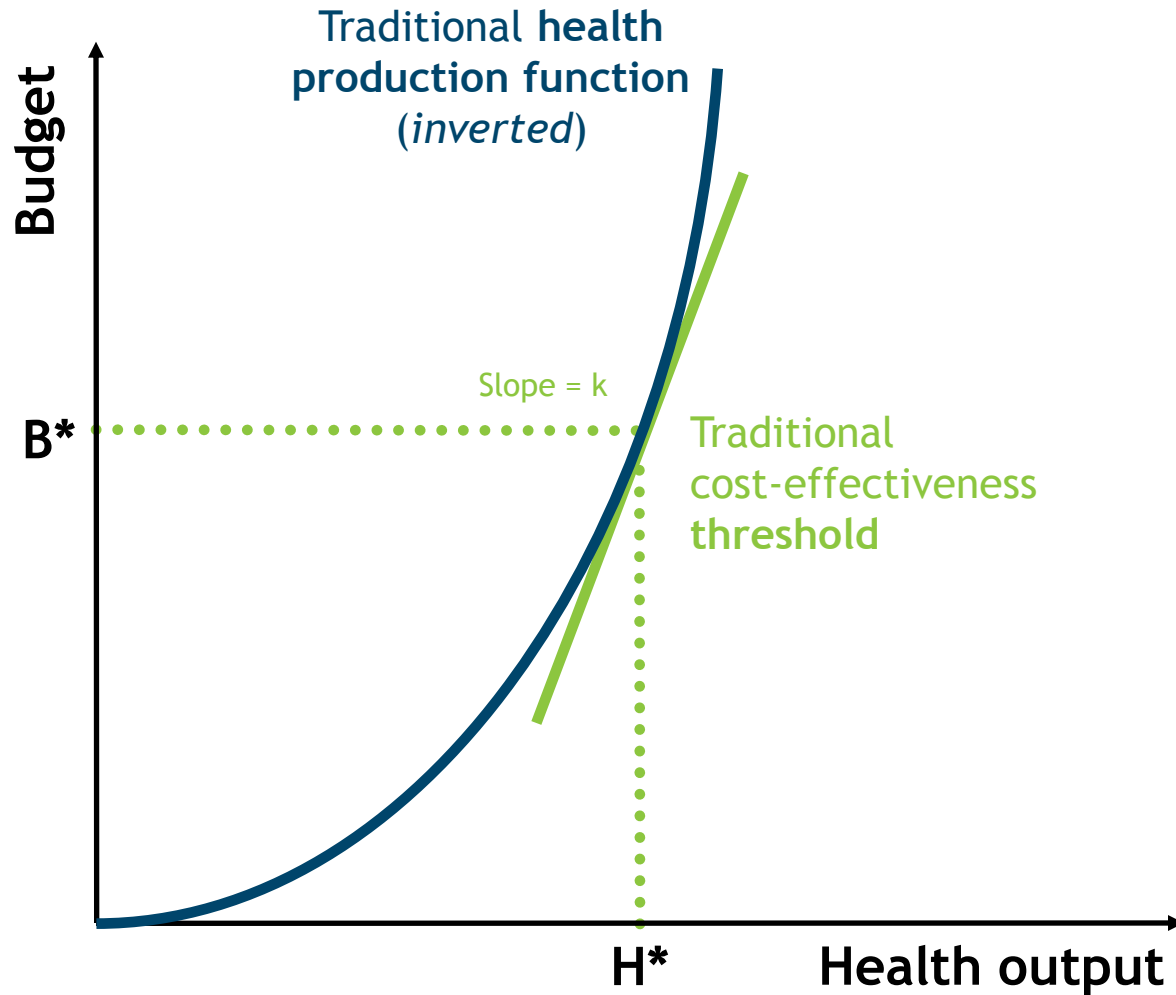
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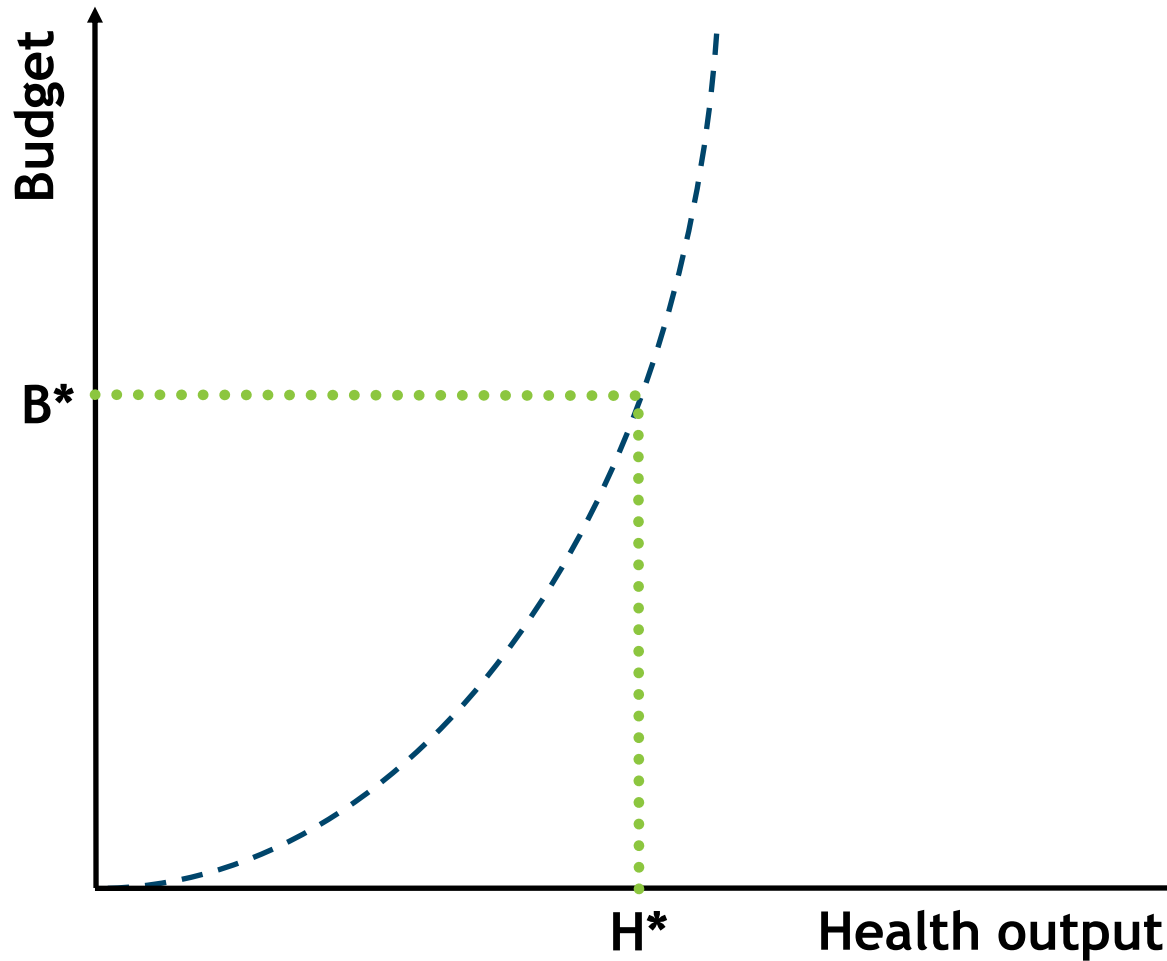
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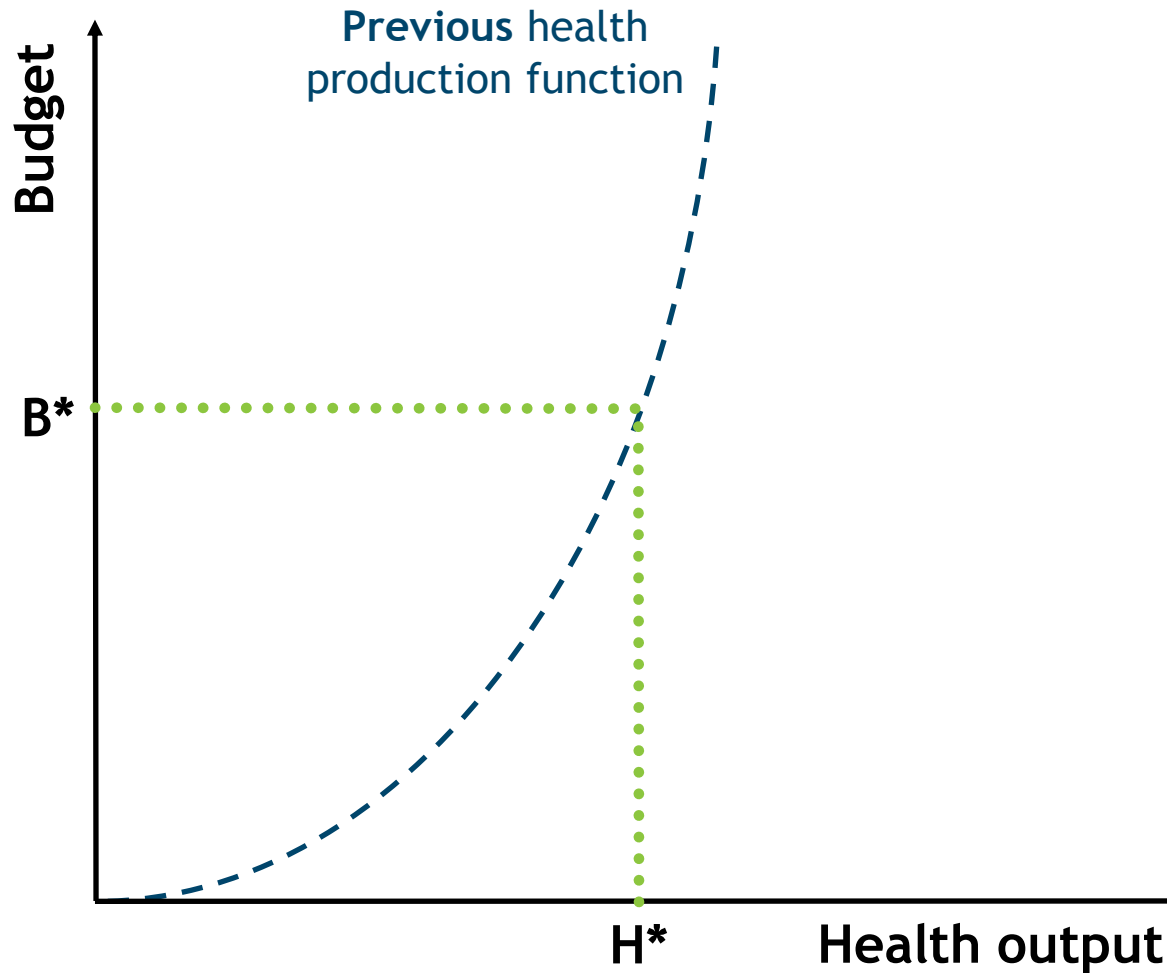
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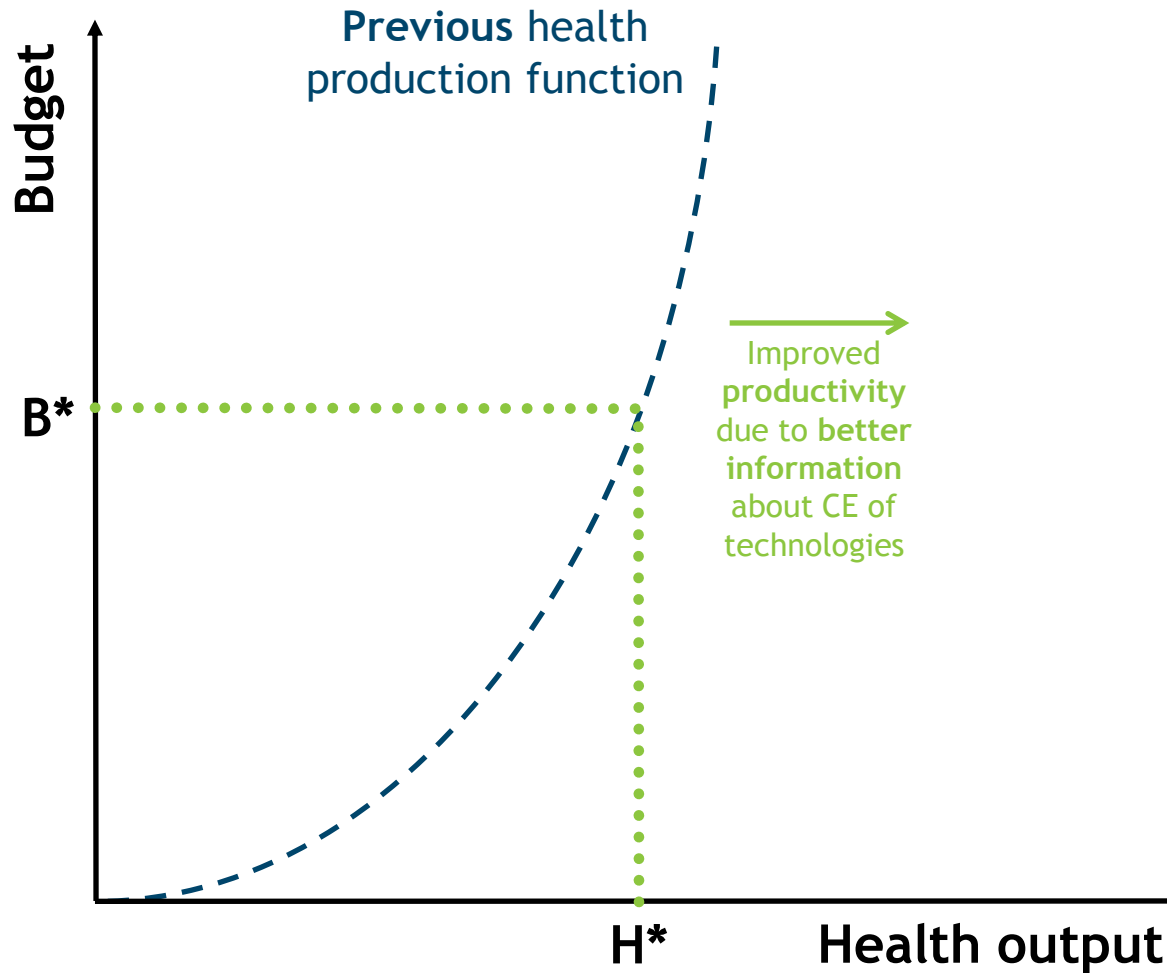
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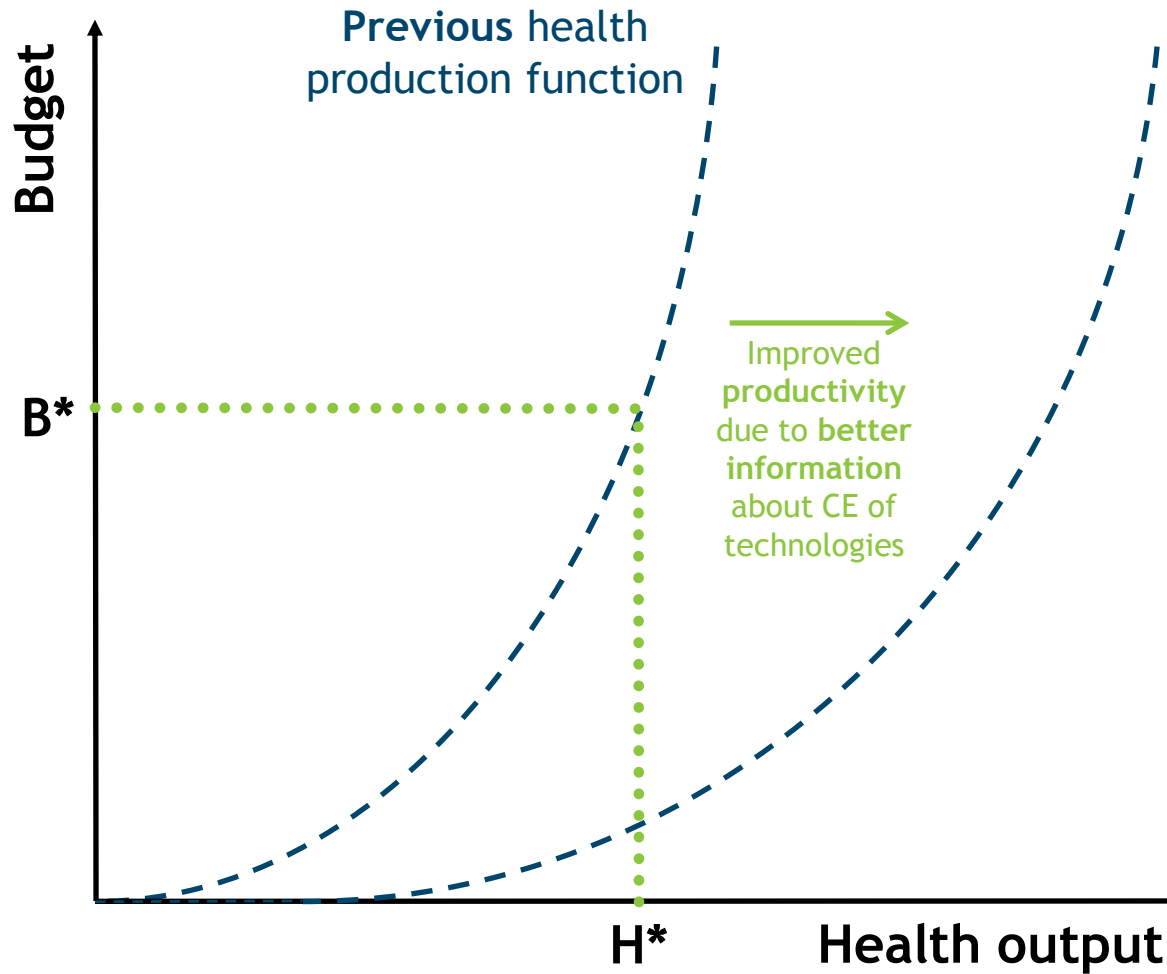
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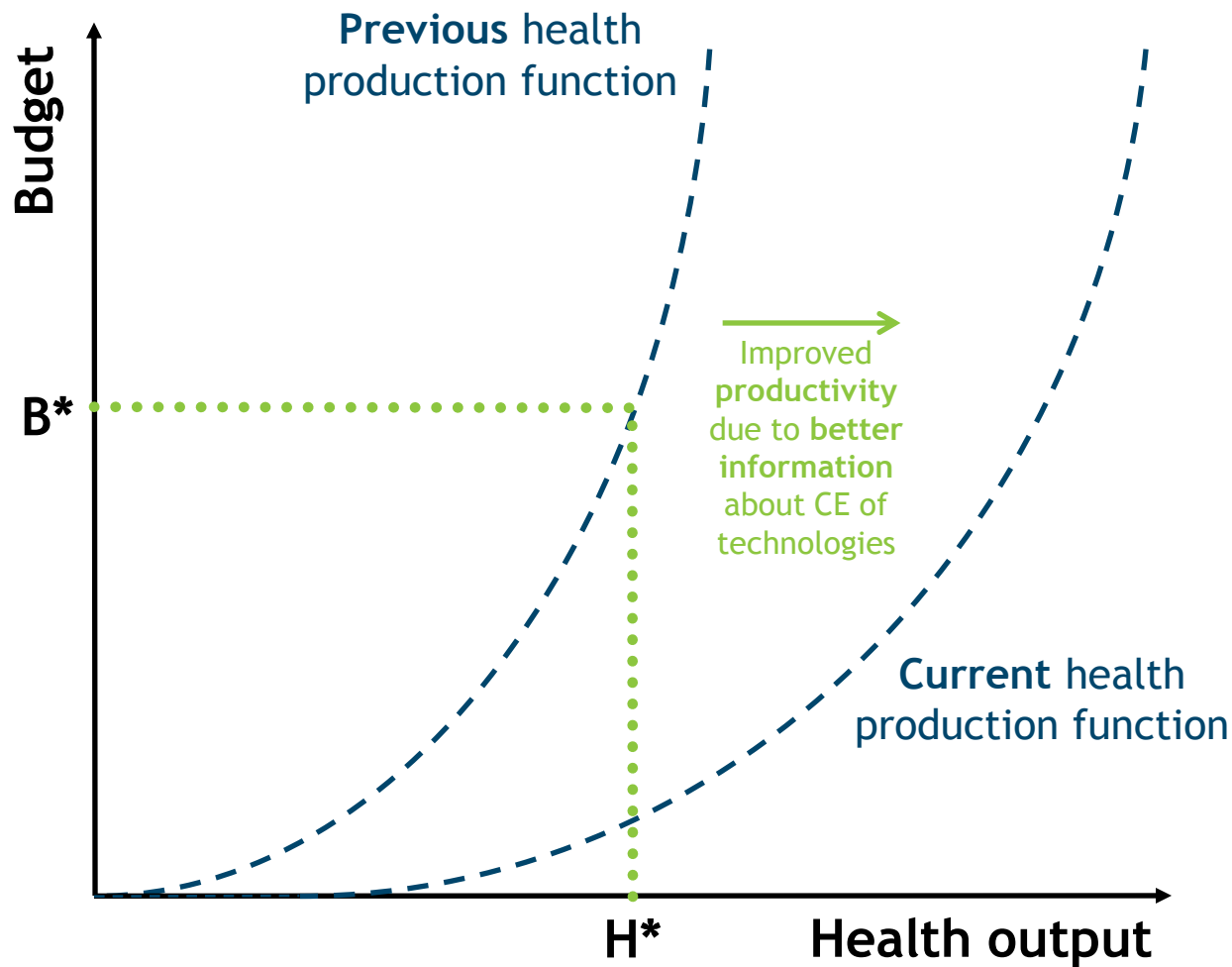
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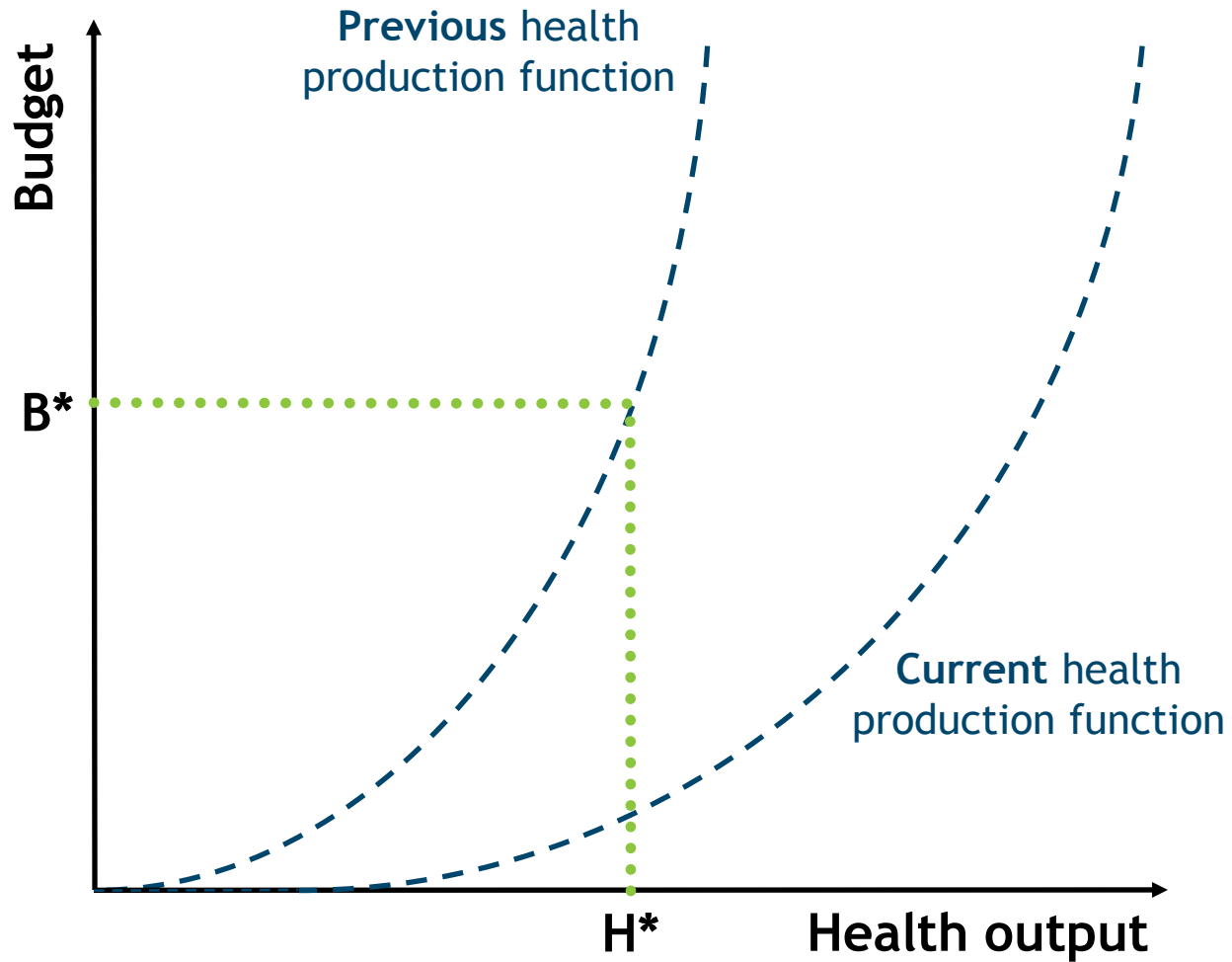
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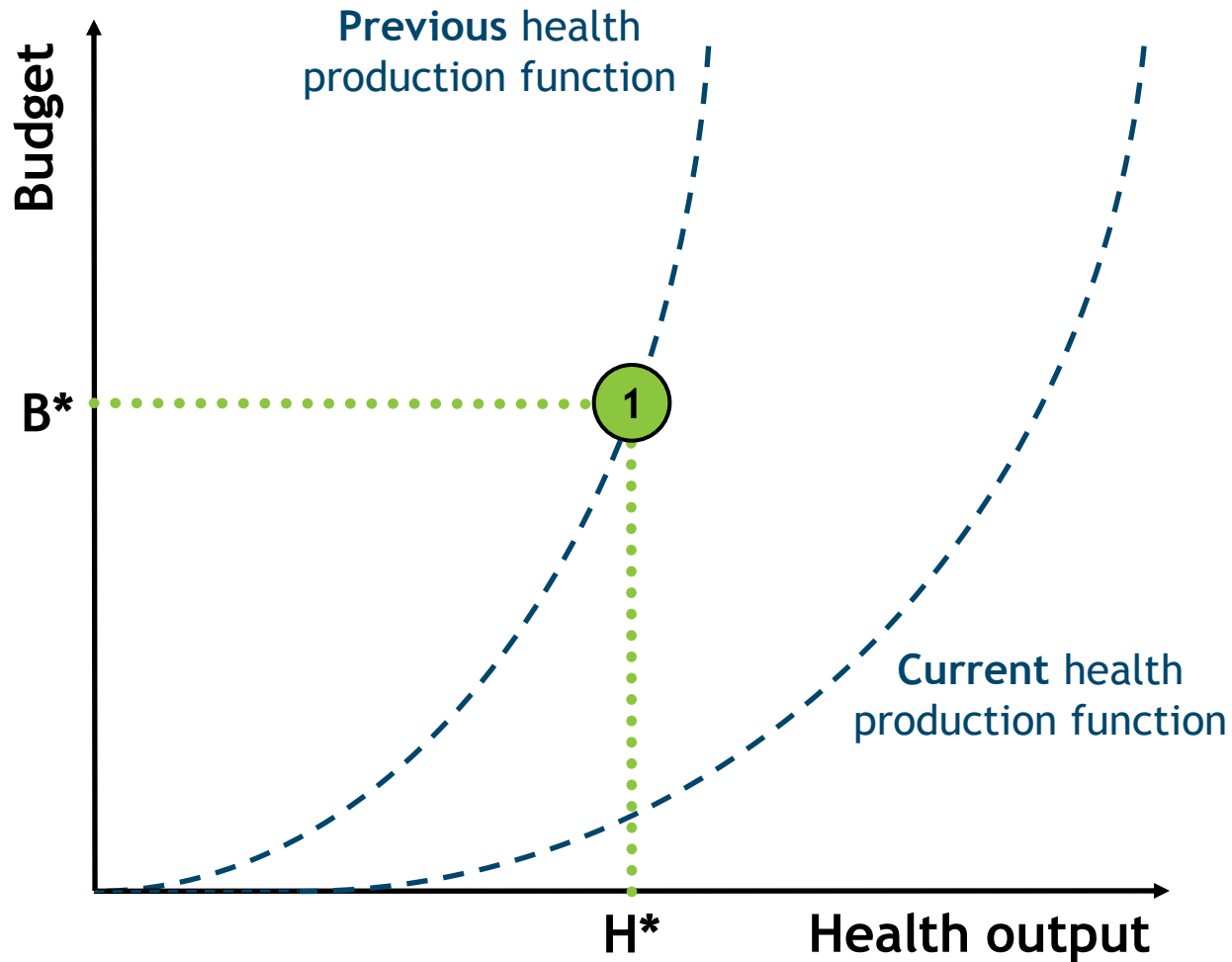
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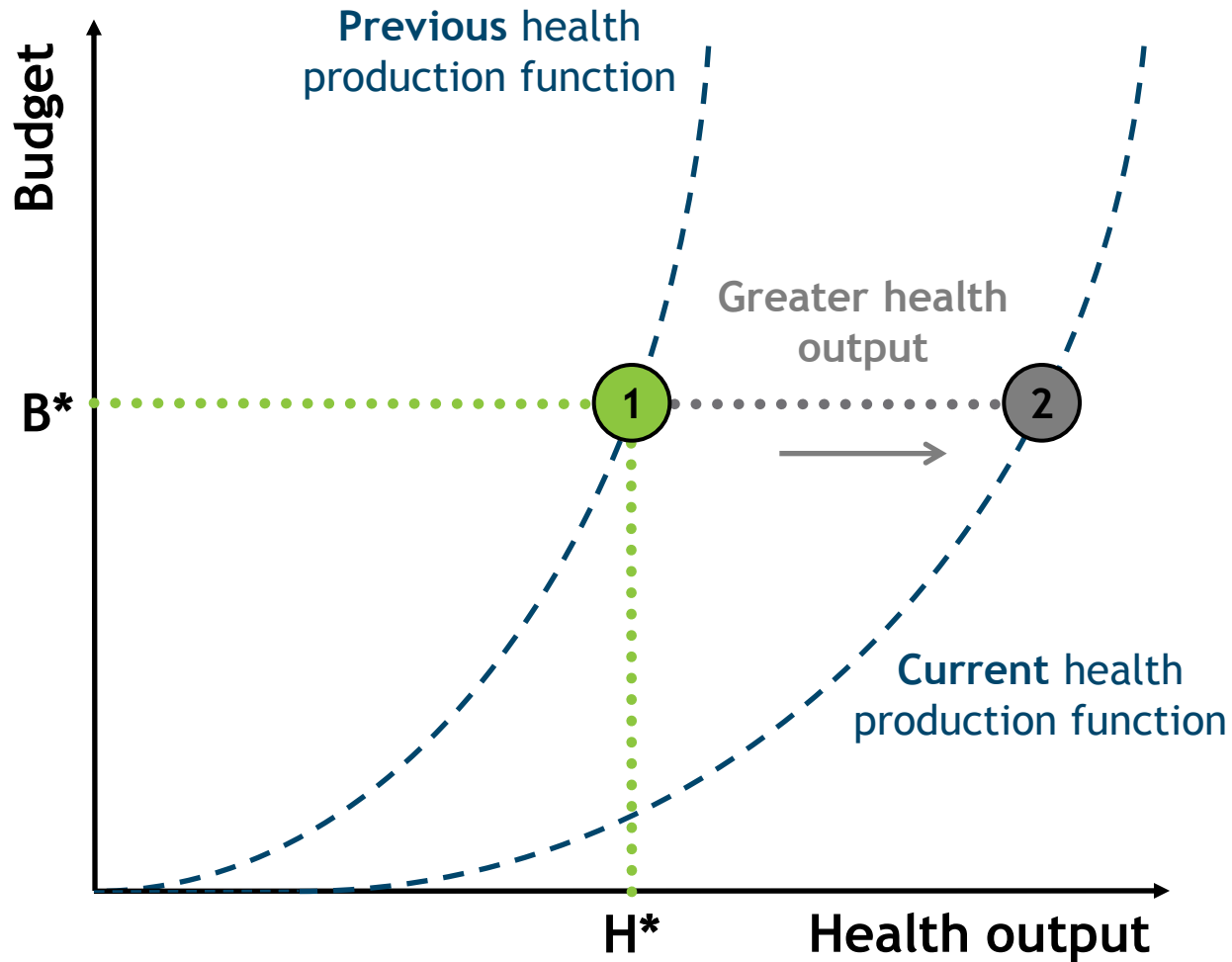
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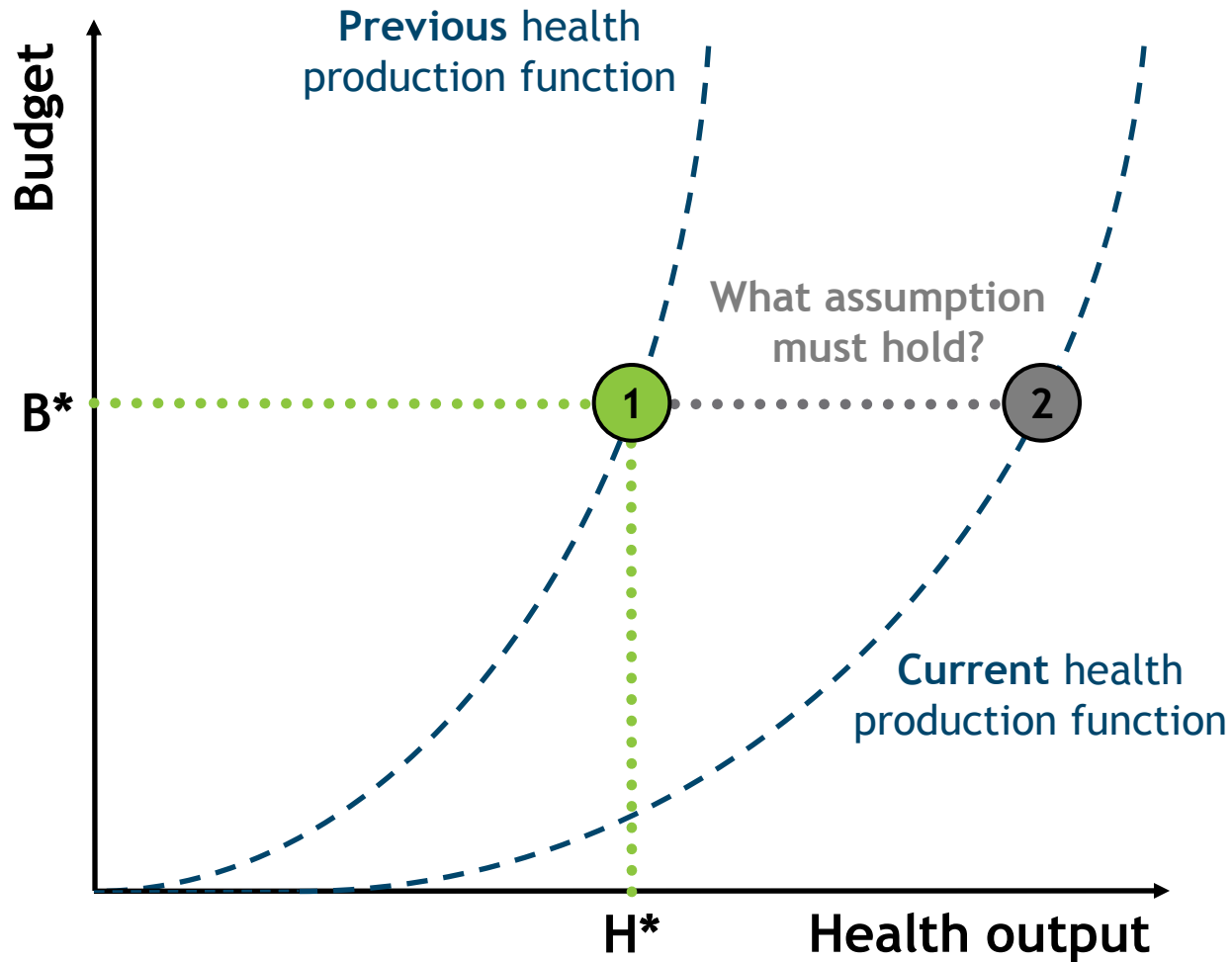
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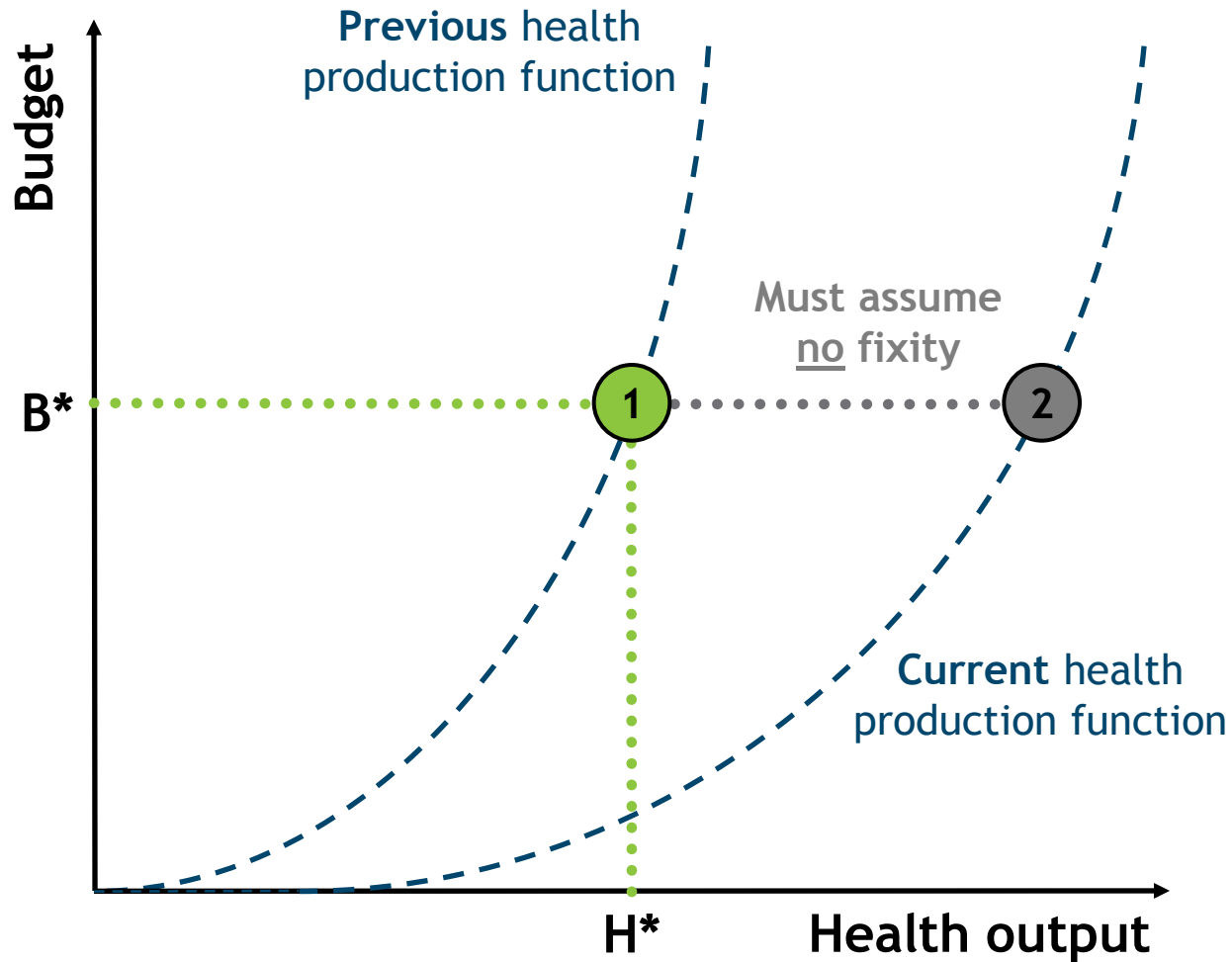


“No short term fixity in the set of adopted technologies”

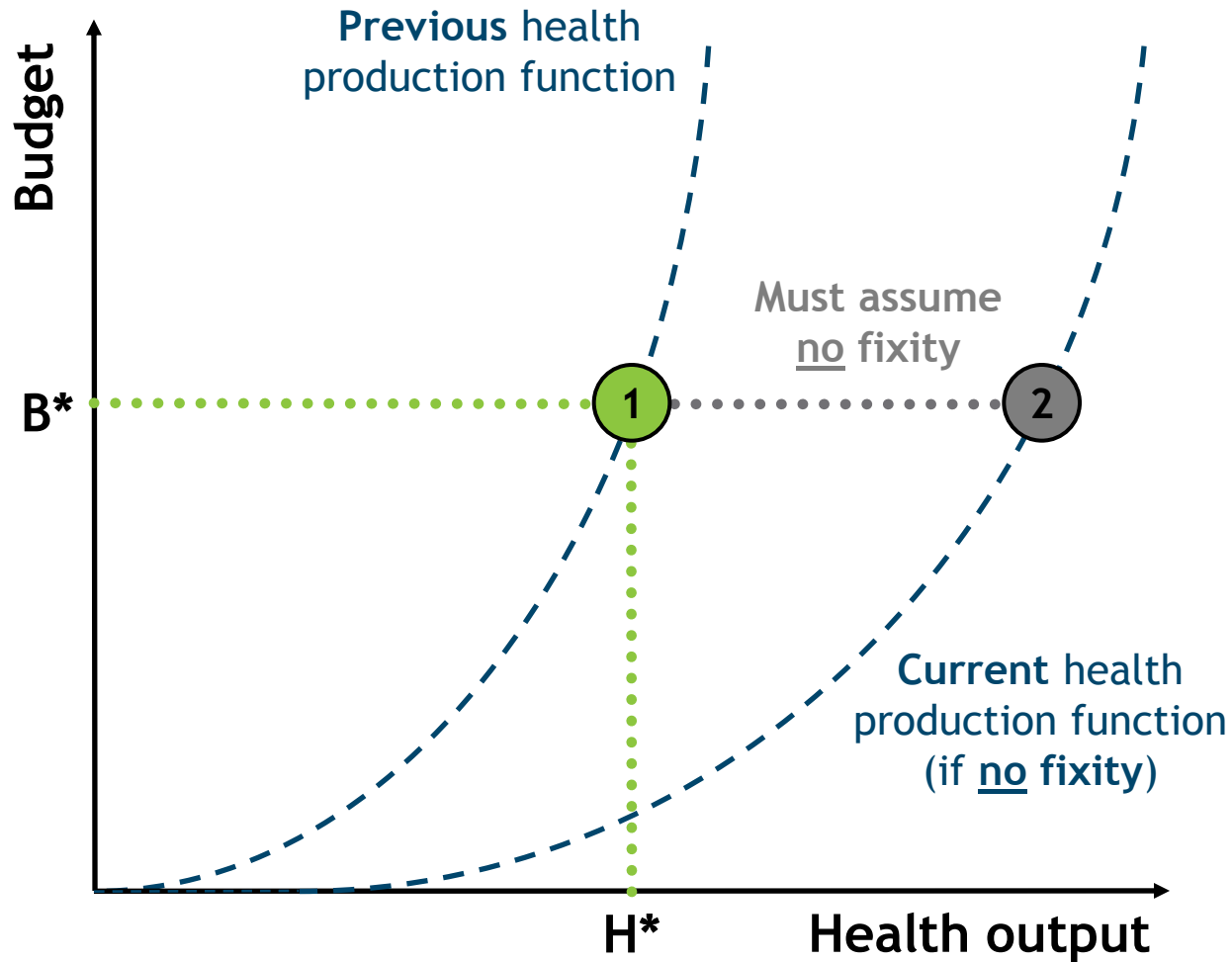
- Necessary for the health production function to remain **smooth** over time
- Assumes technologies can be **instantly** and **costlessly** switched within system
- But many things prevent this, including budget **illiquidity** (e.g. contracts), **politics**, or patient/clinician **behaviour**



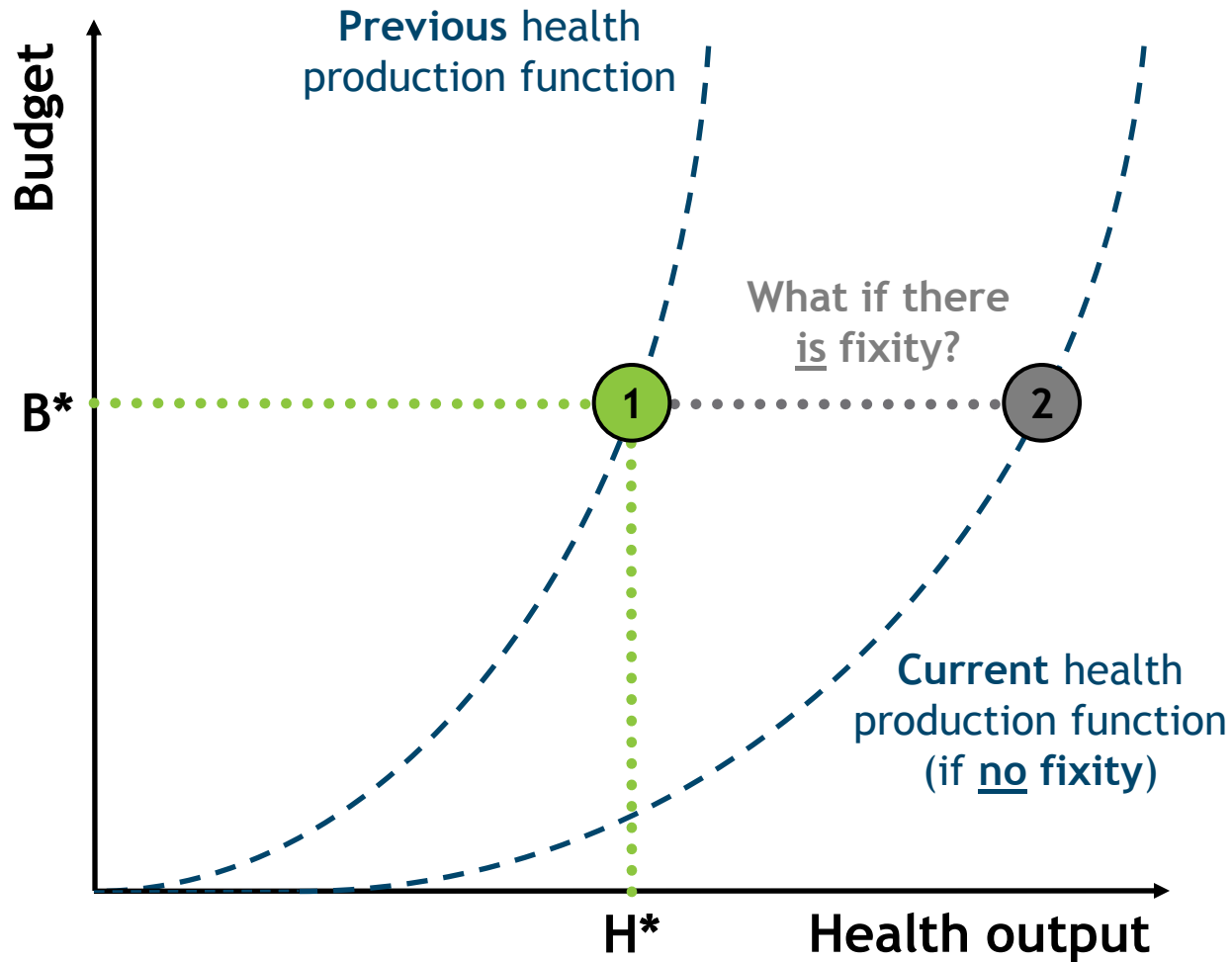
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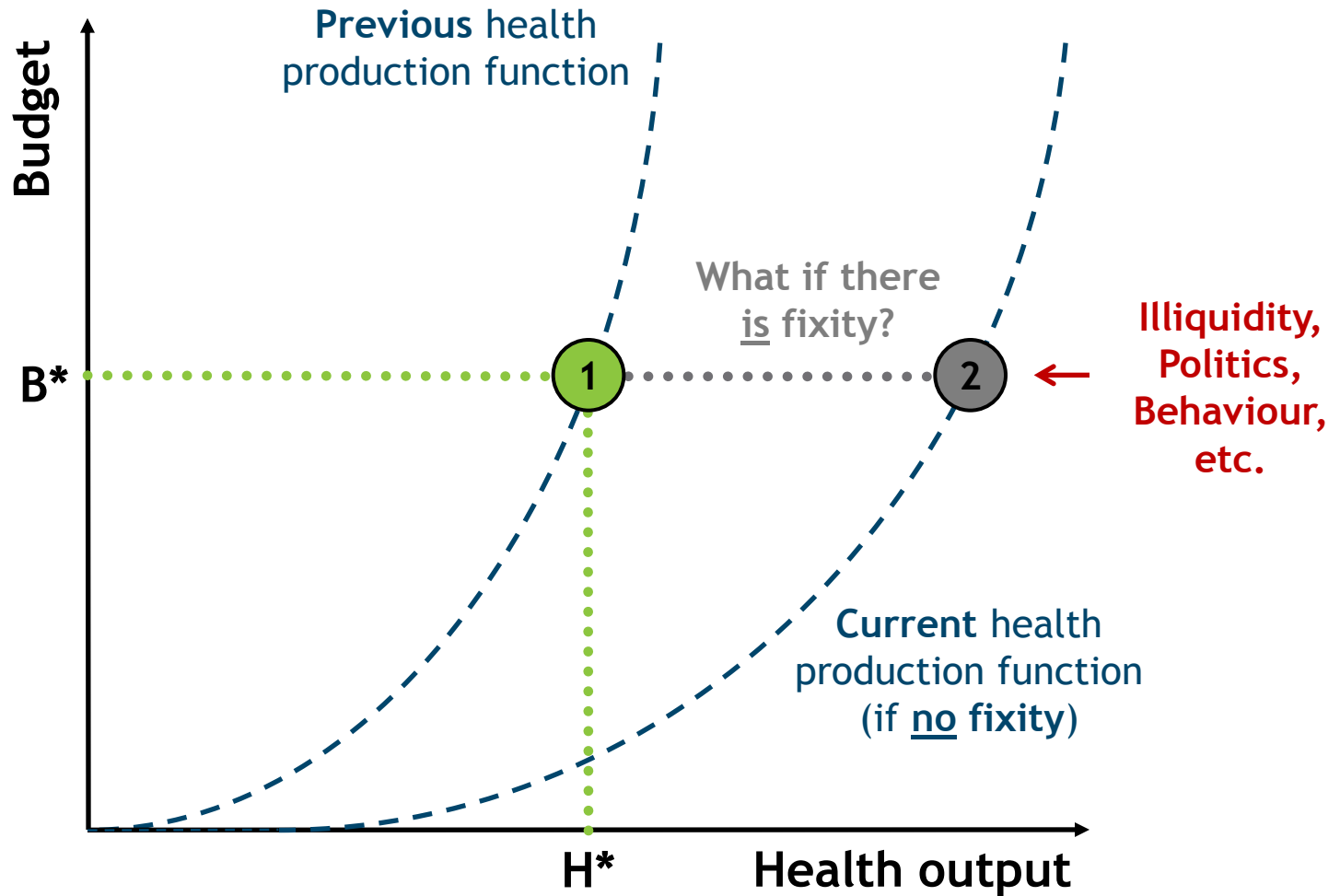
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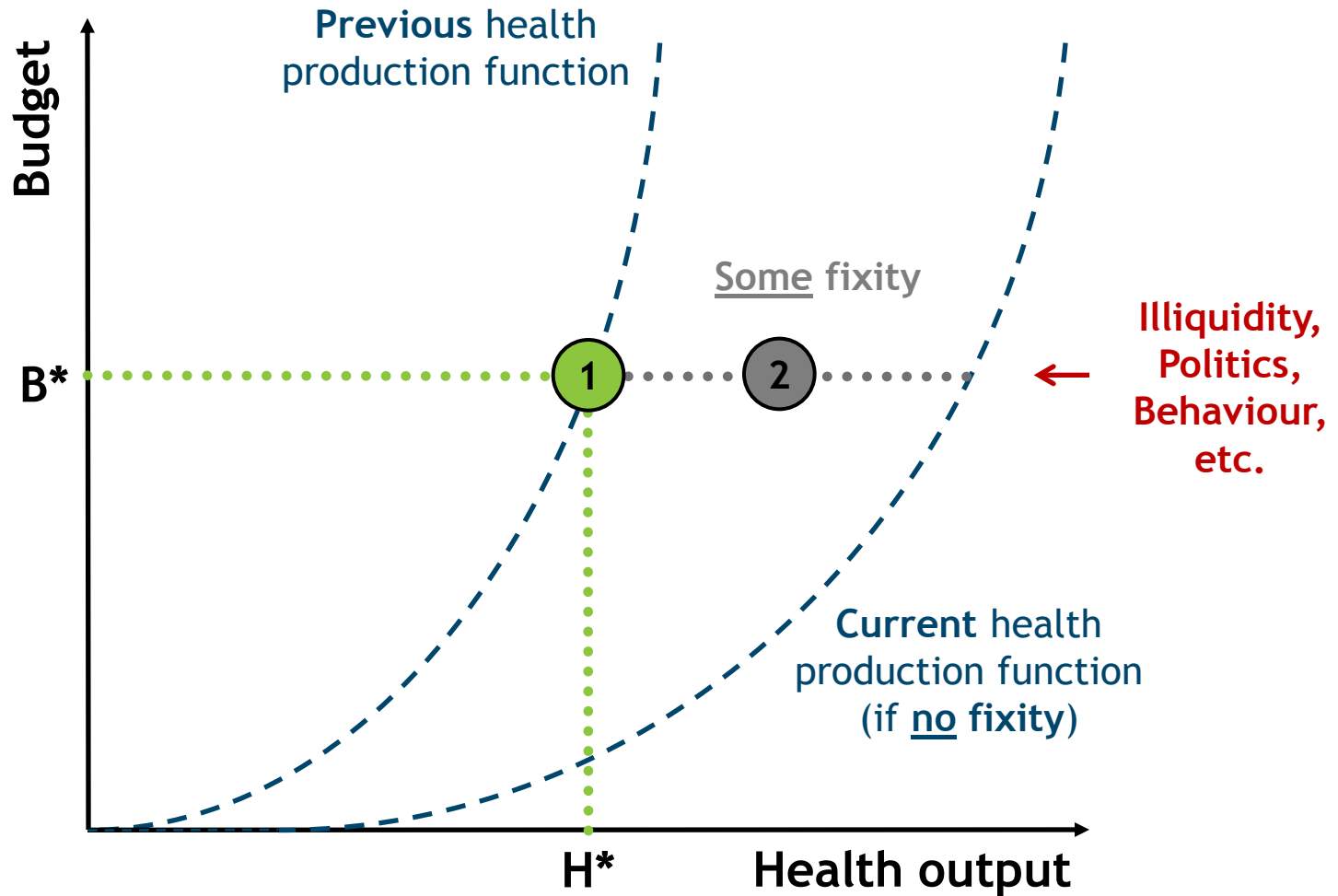
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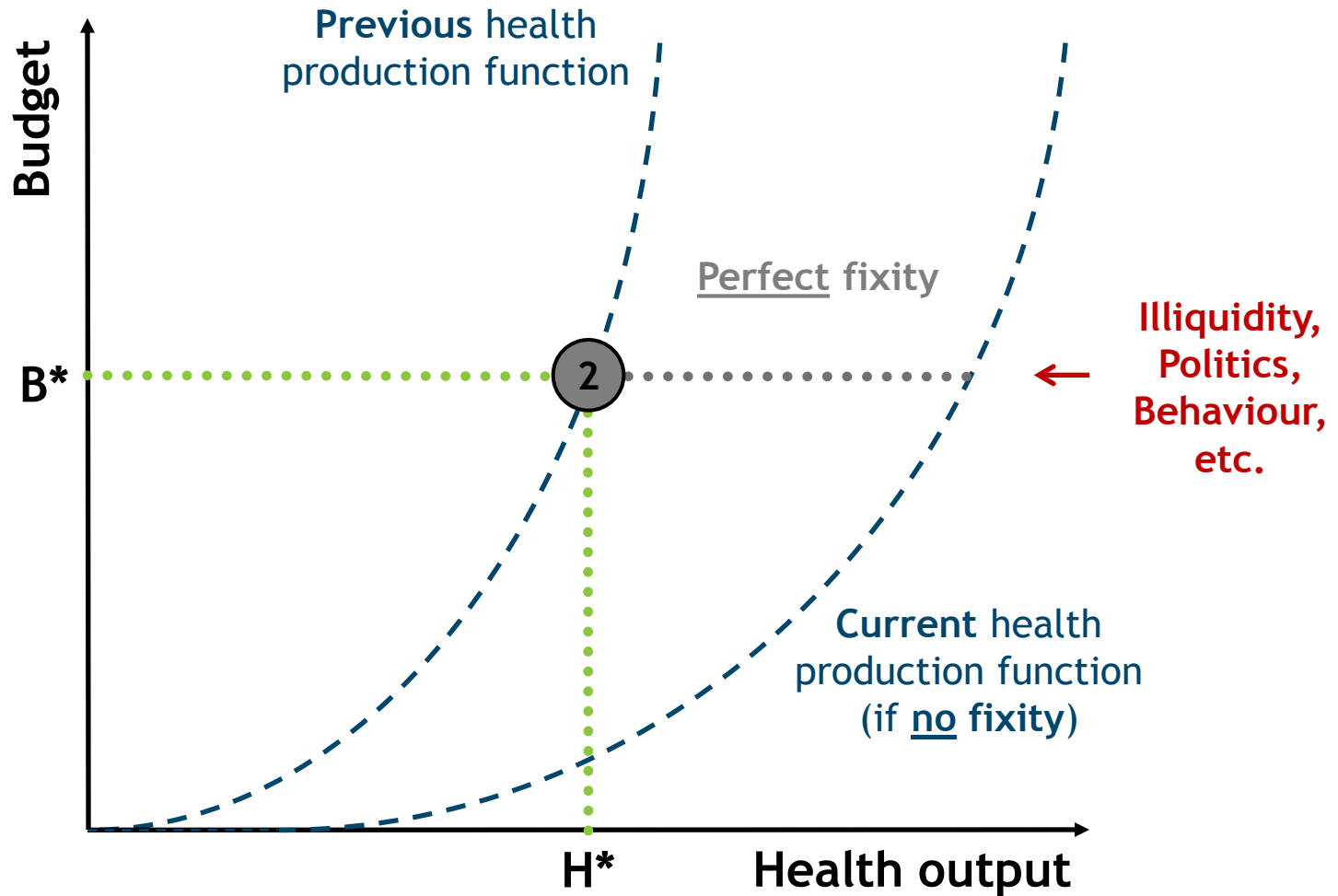
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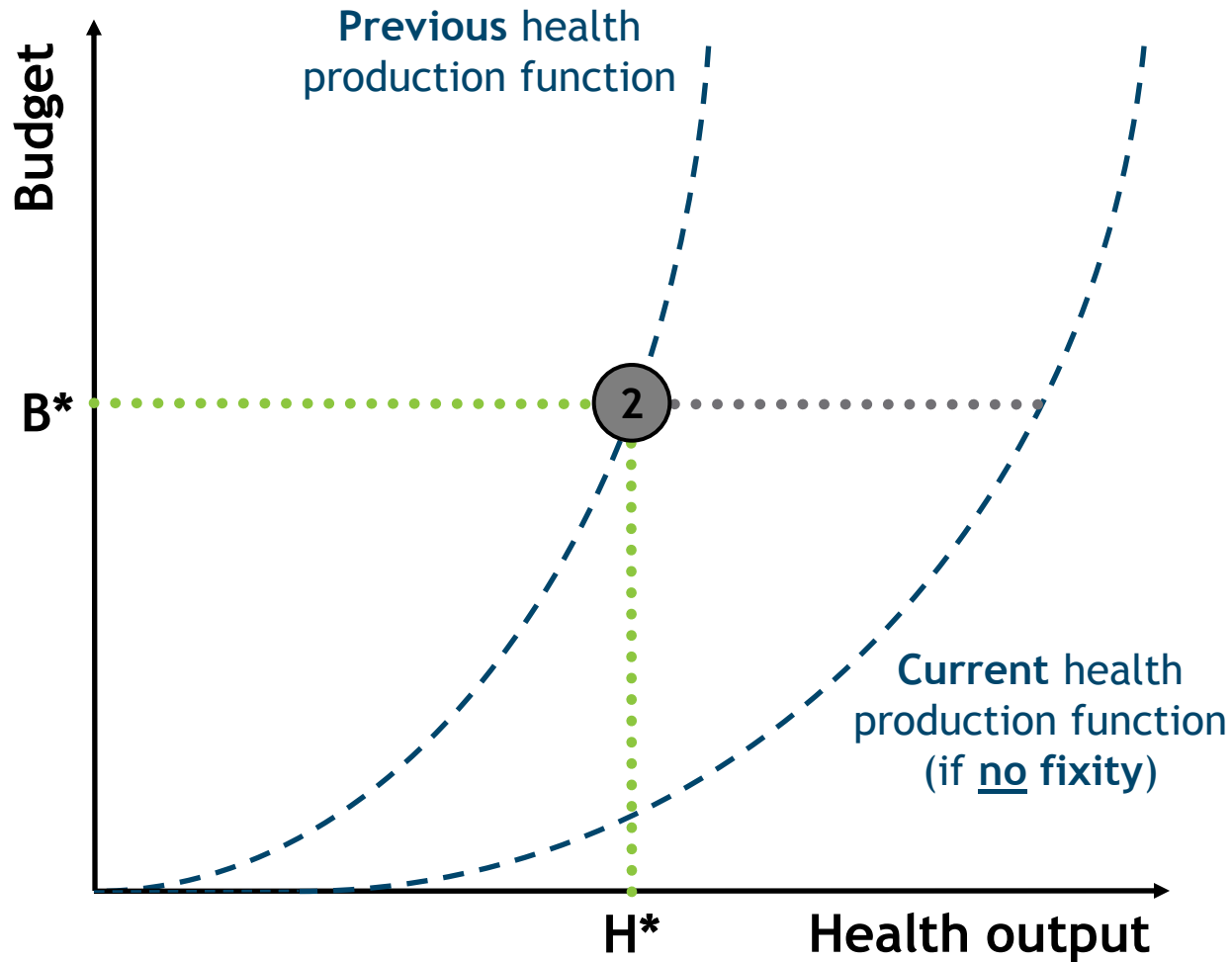
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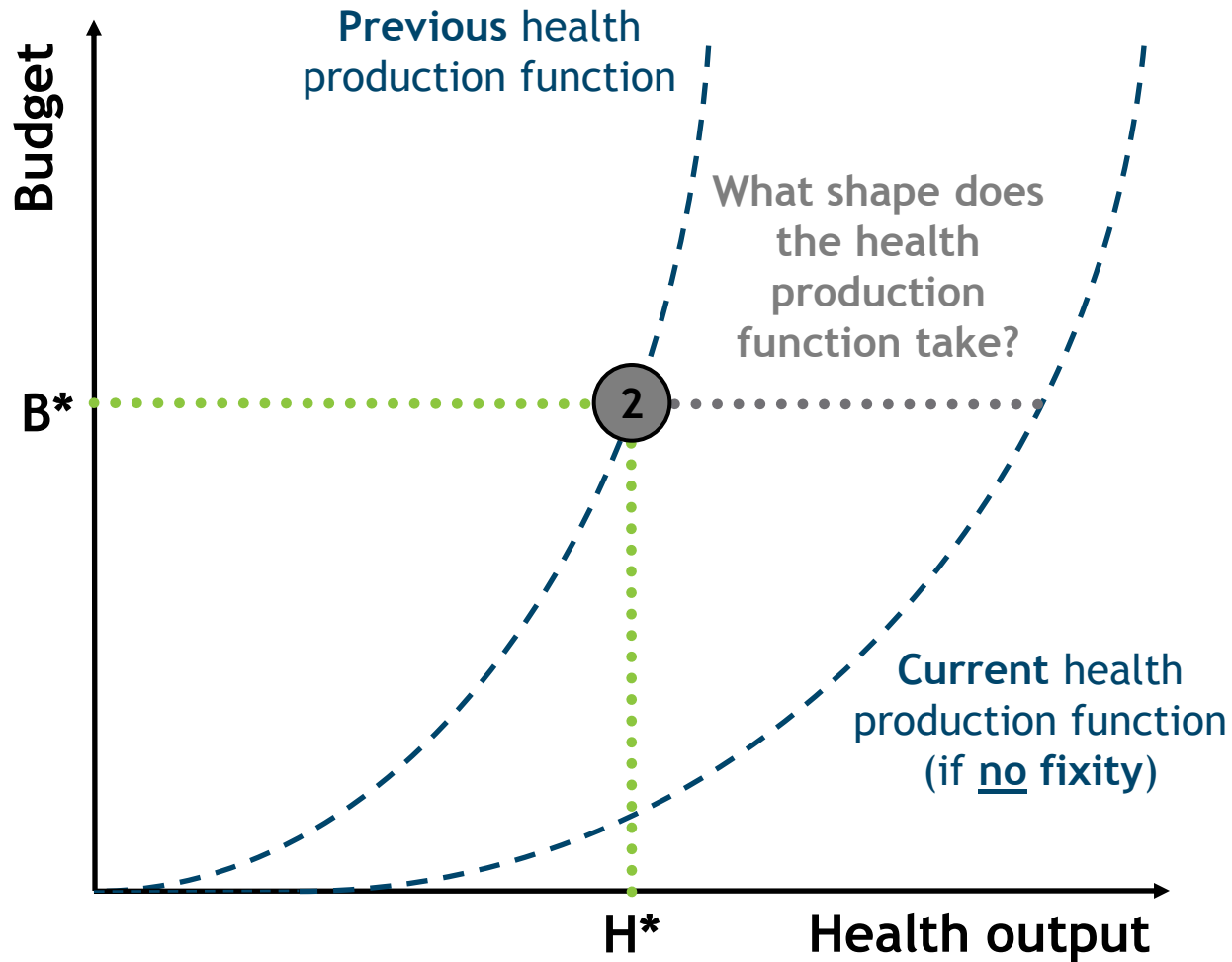
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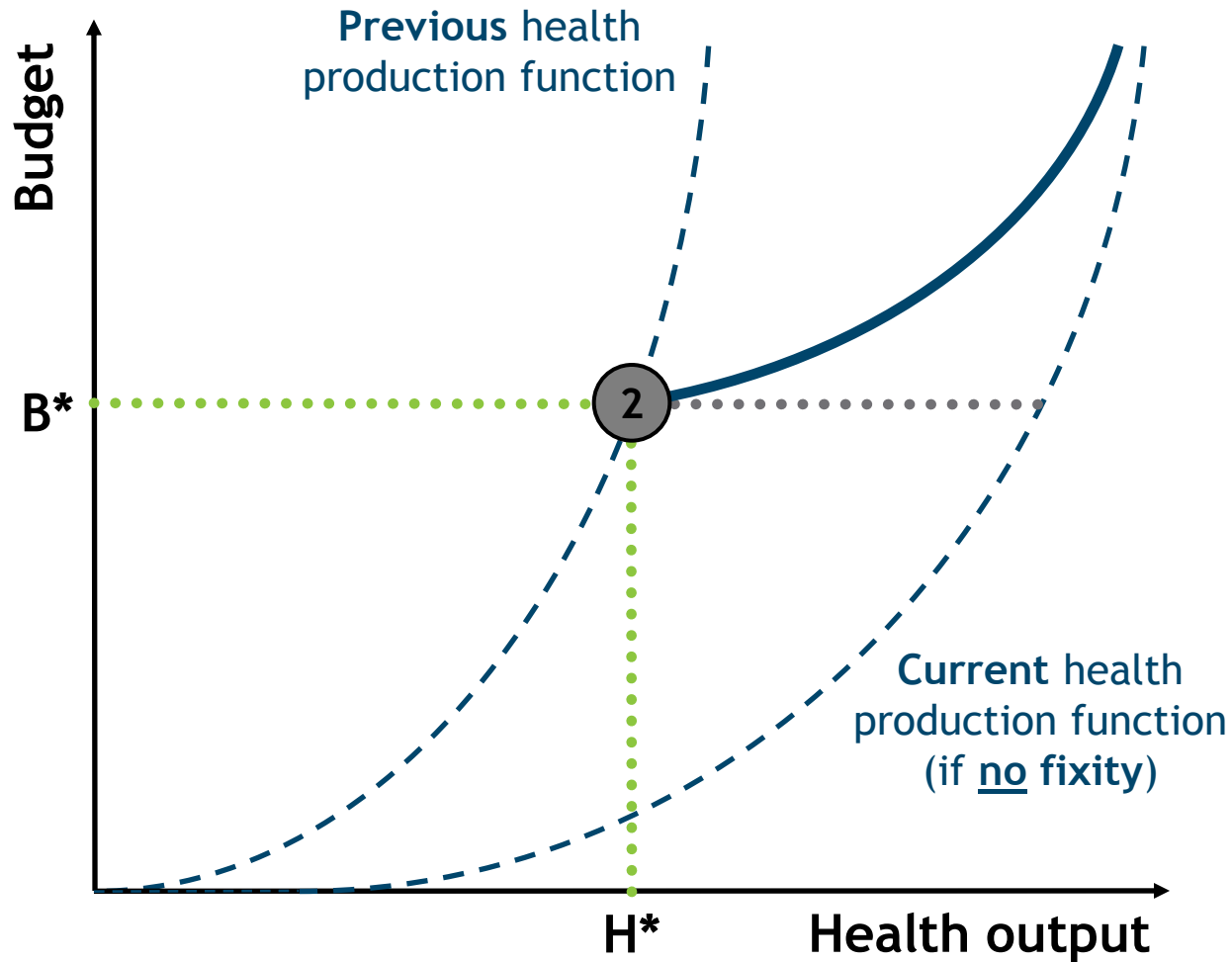
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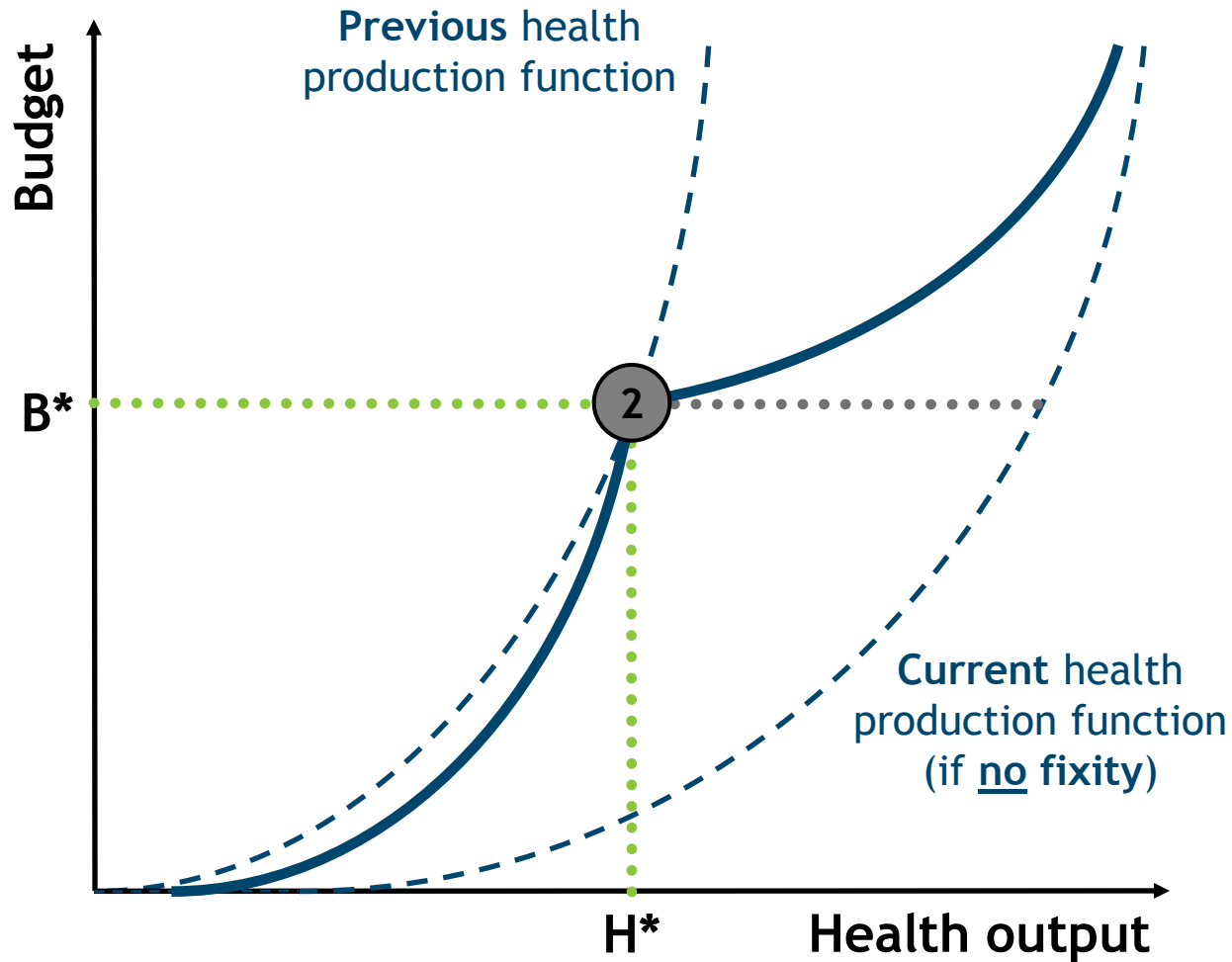
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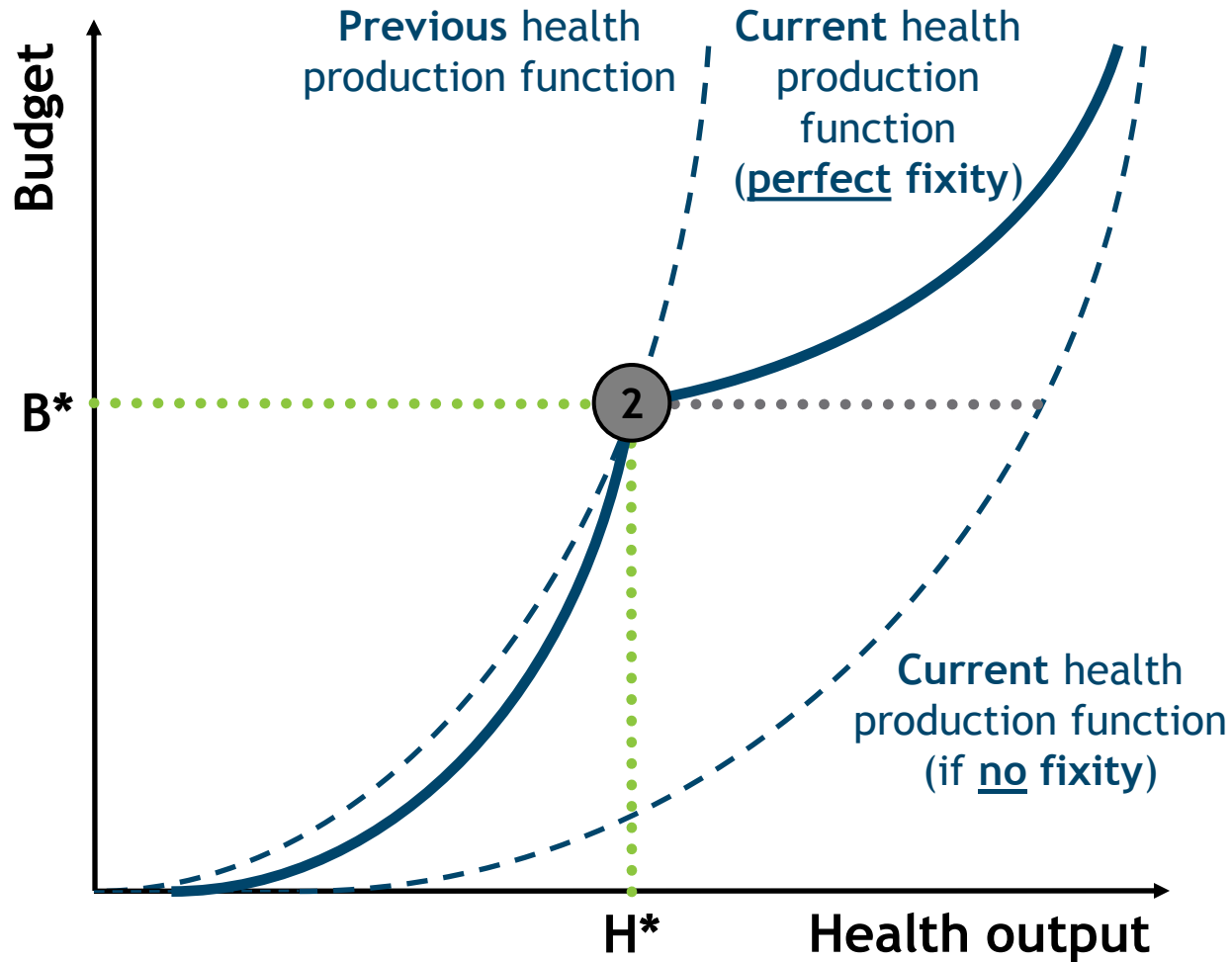
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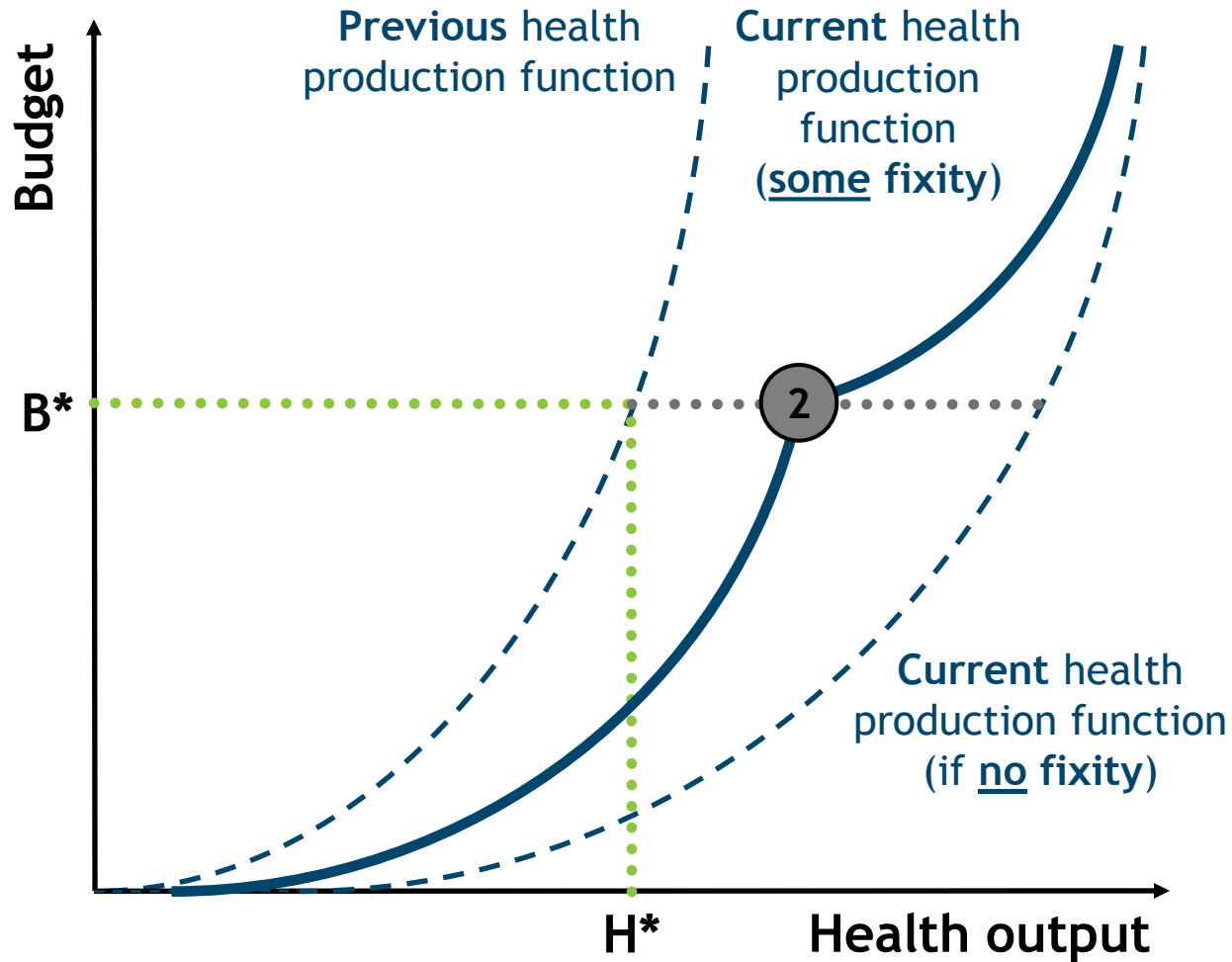
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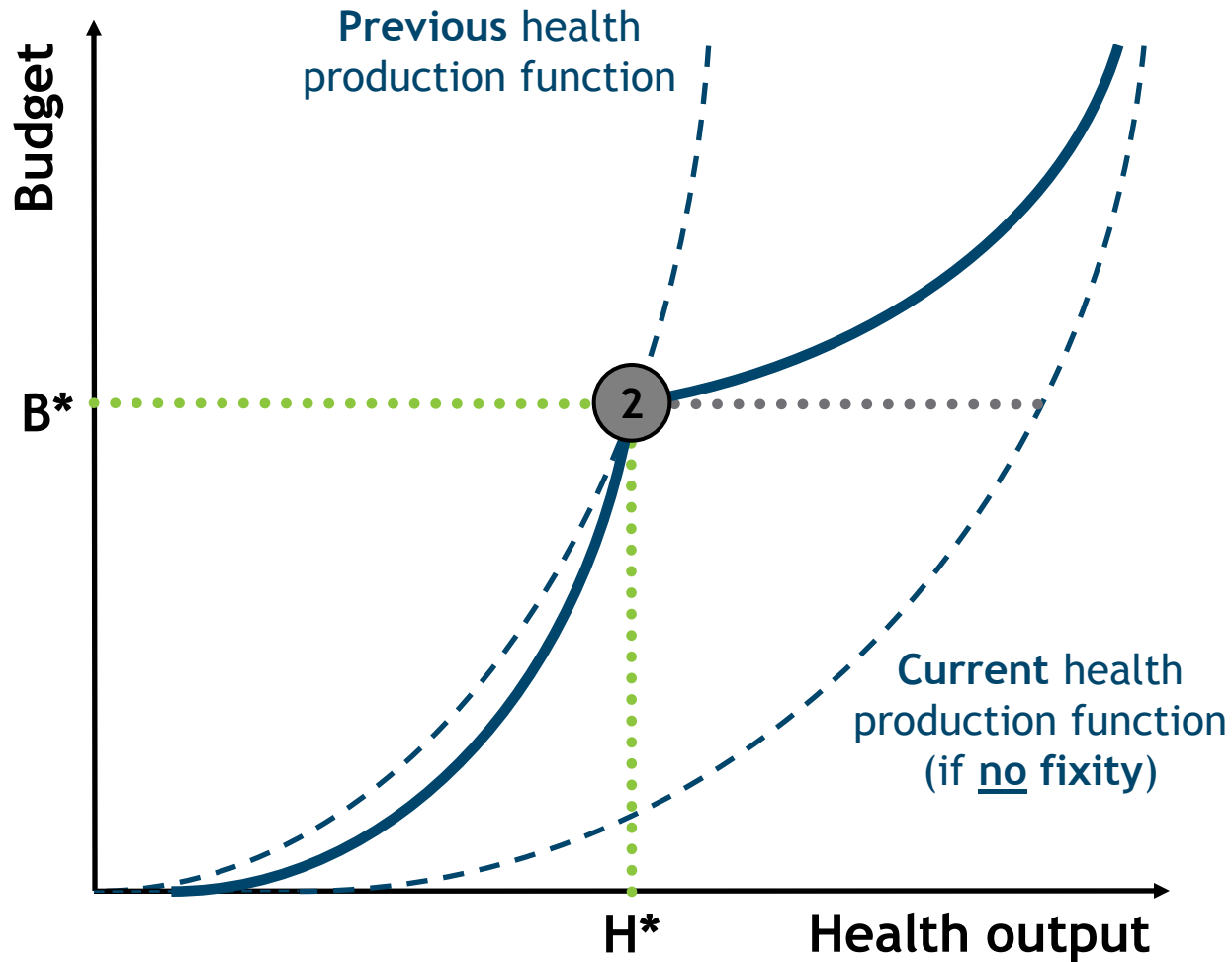
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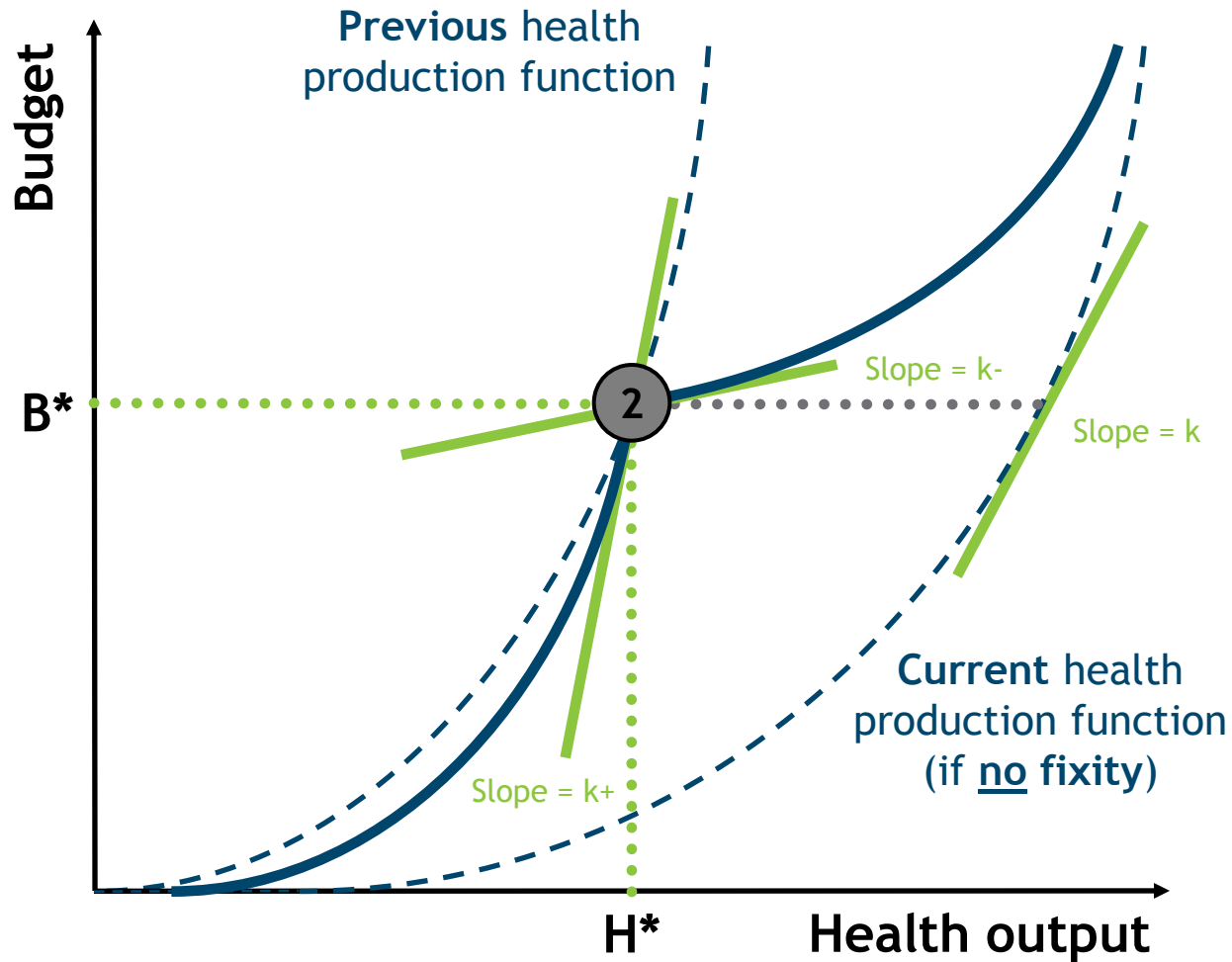
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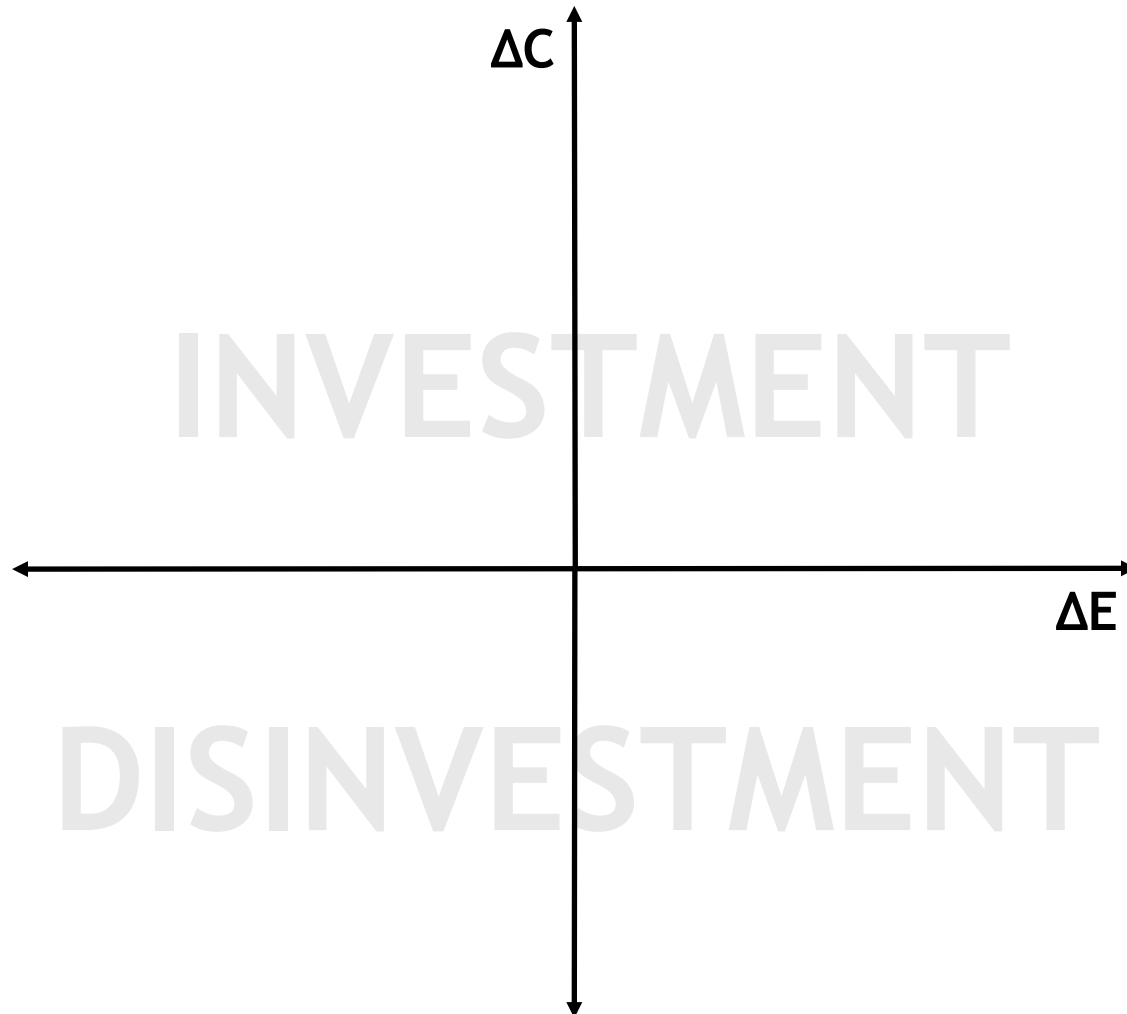
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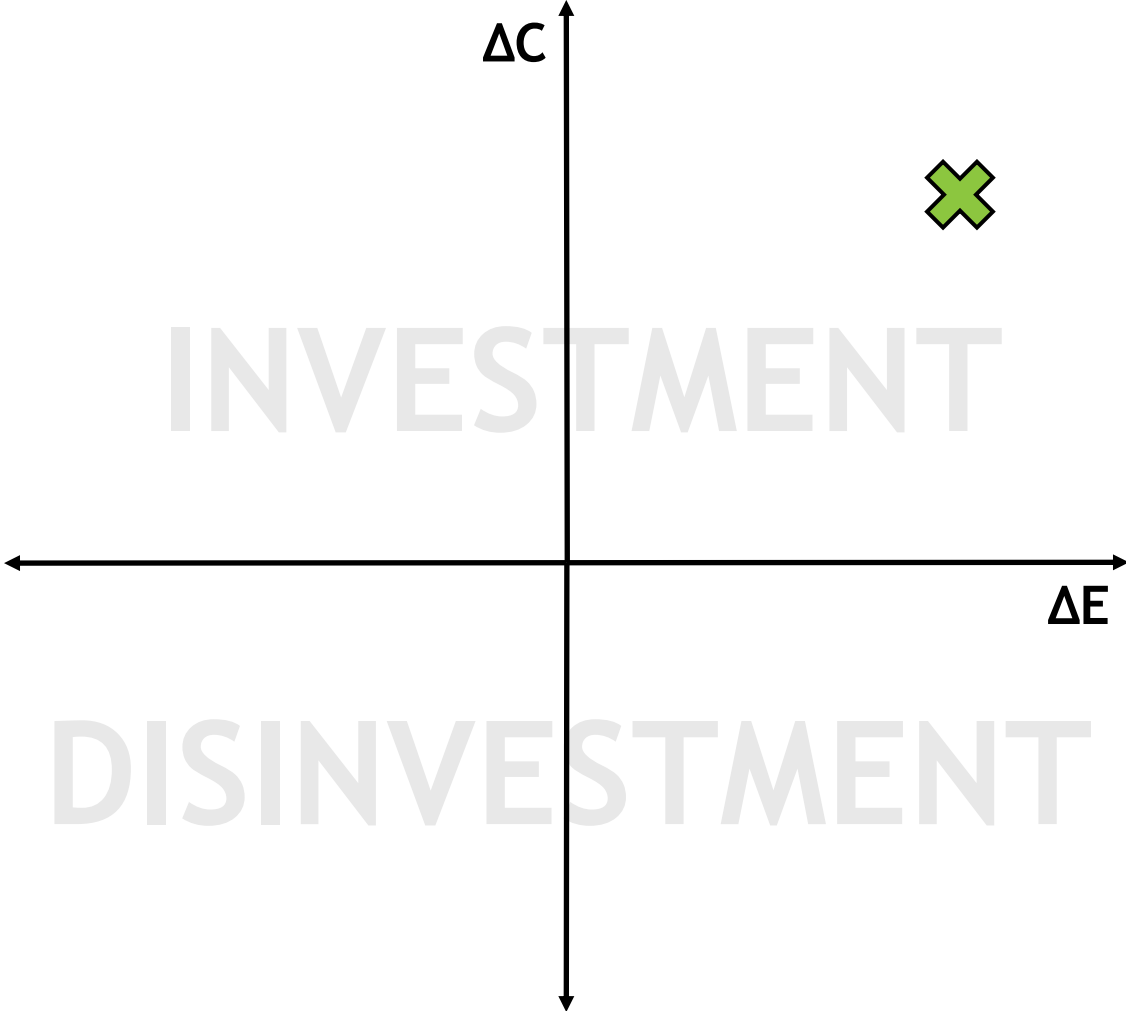
Relationship with the CE plane



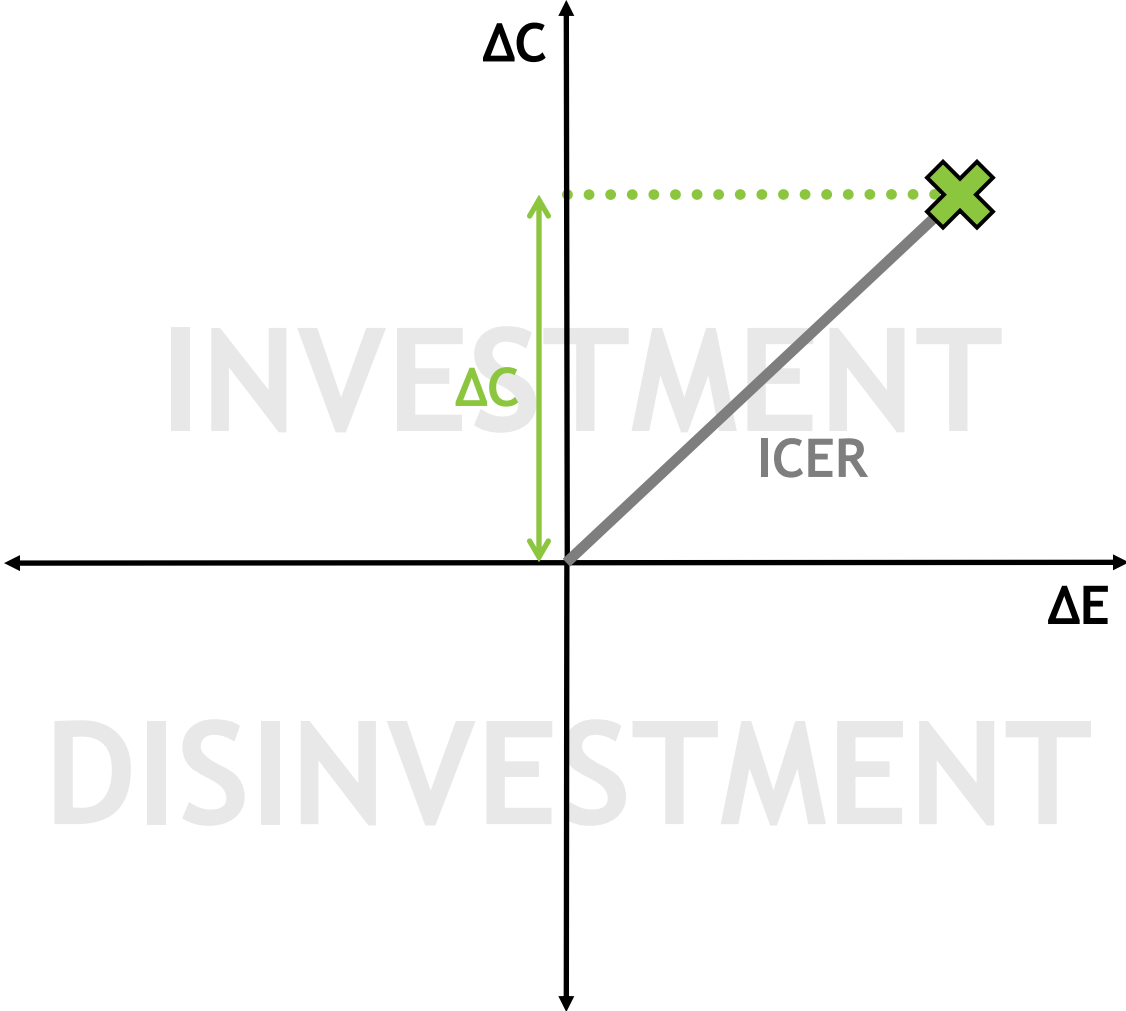
Relationship with the CE plane



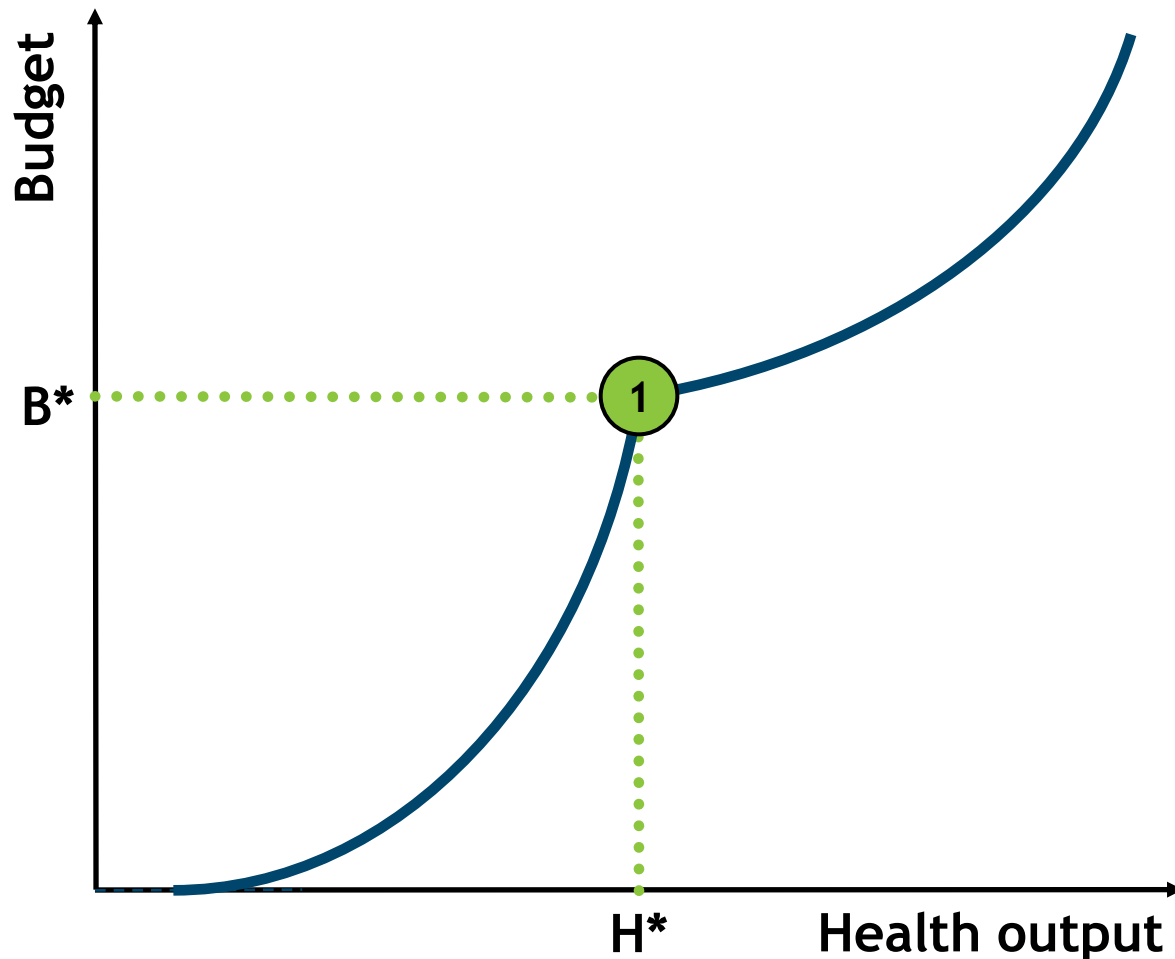
Relationship with the CE plane



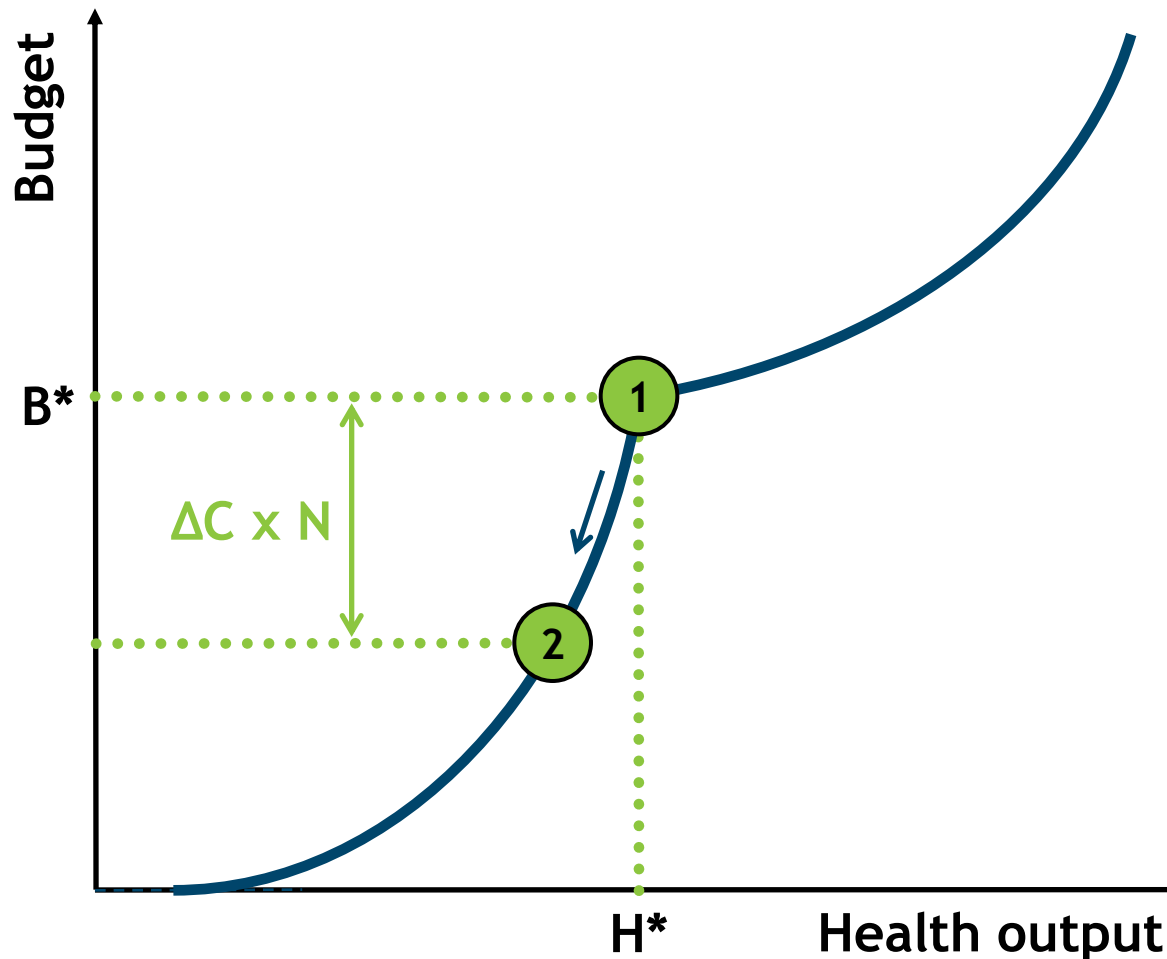
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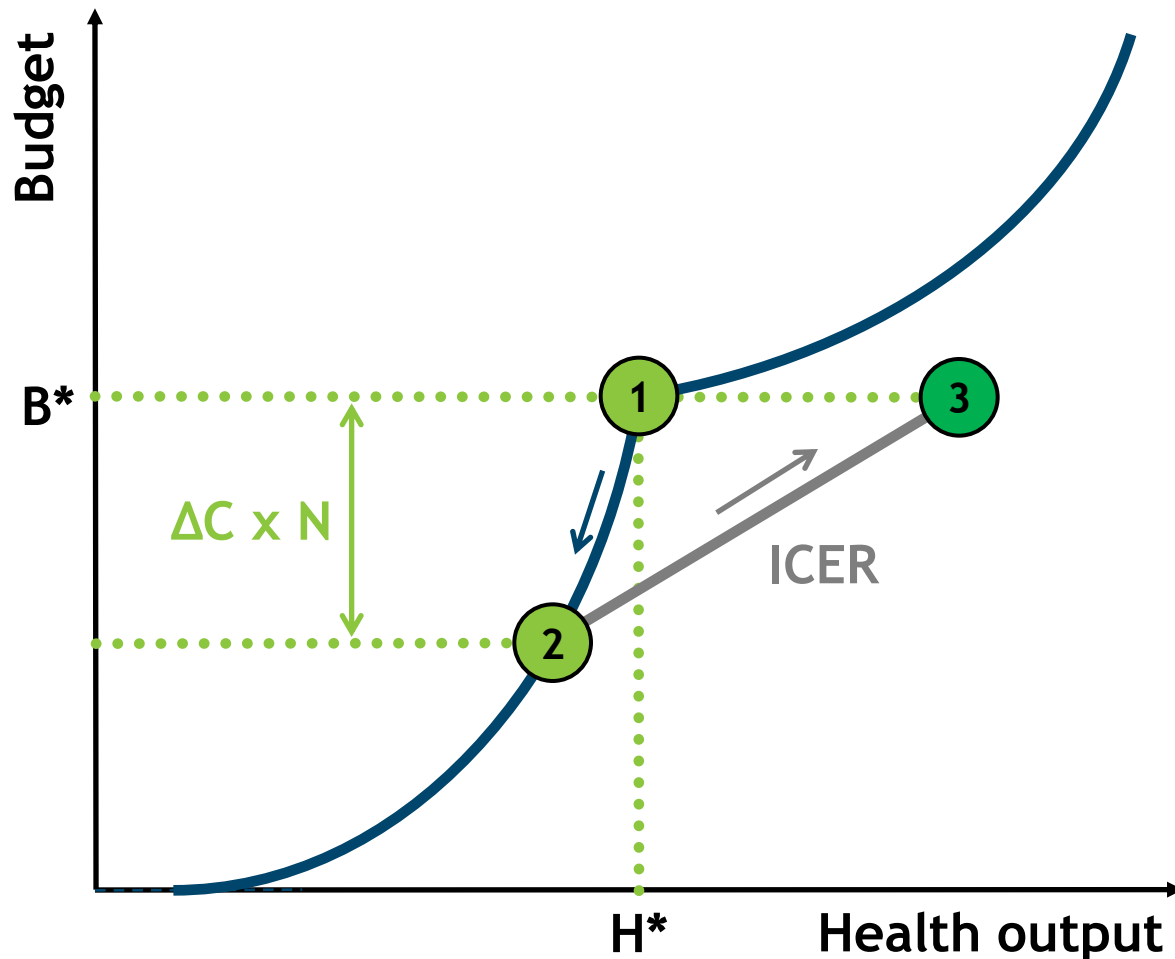
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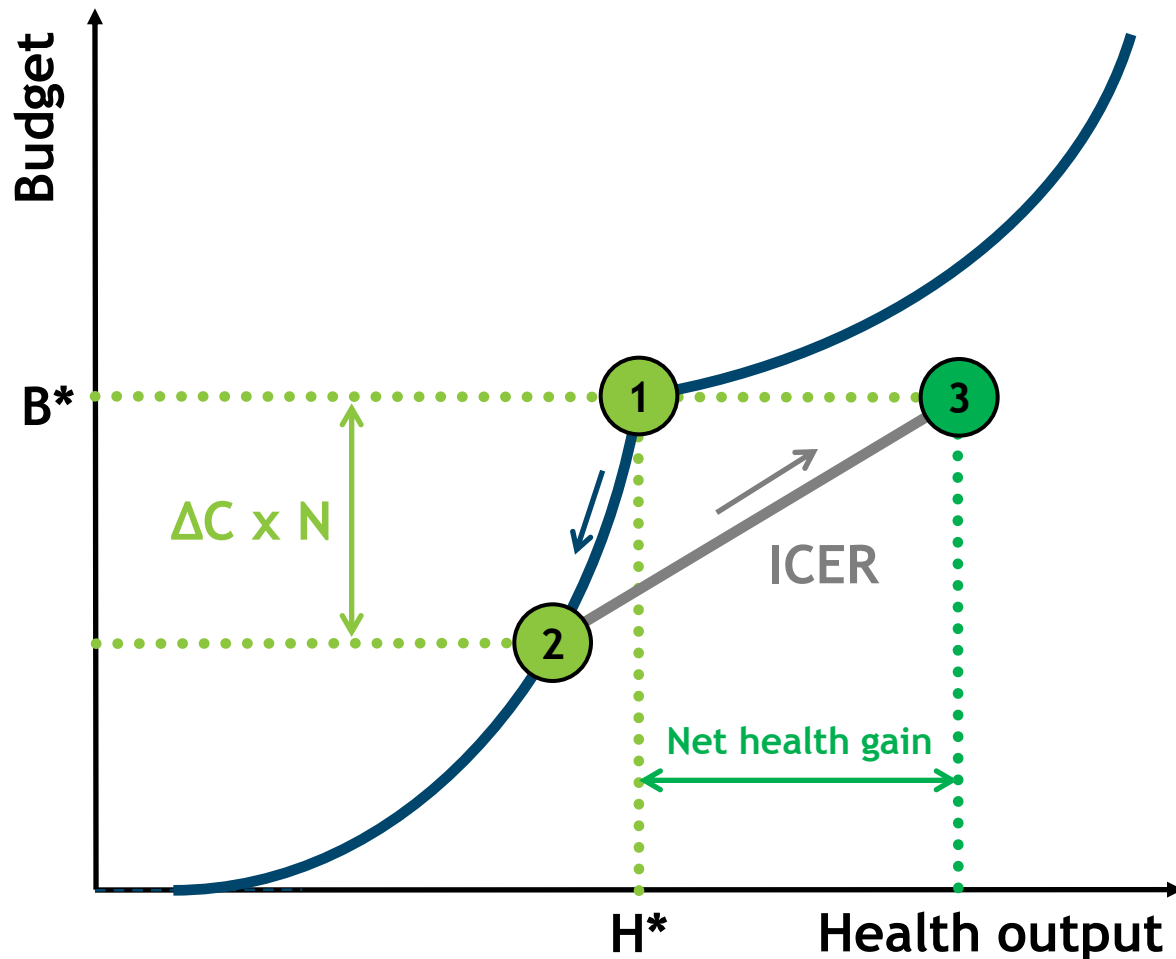
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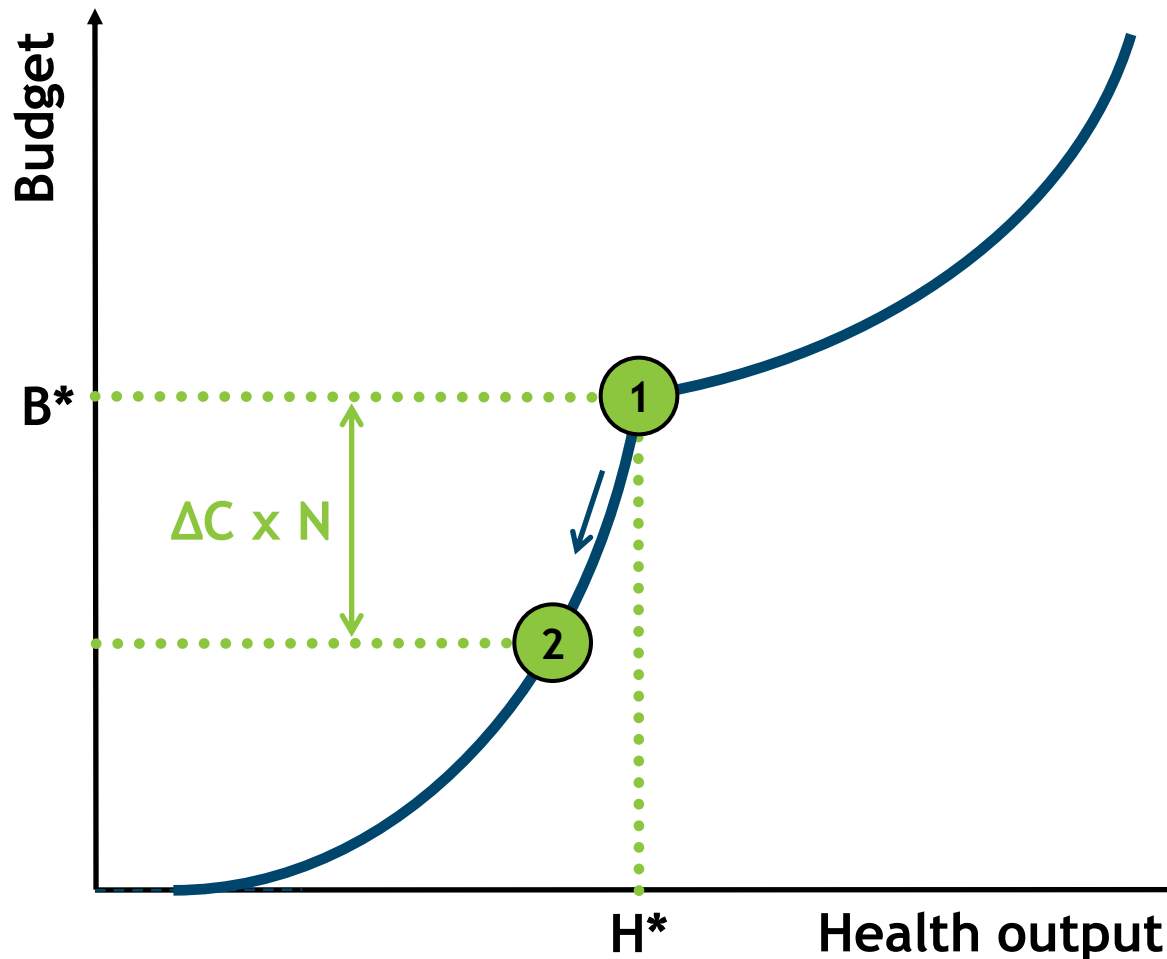
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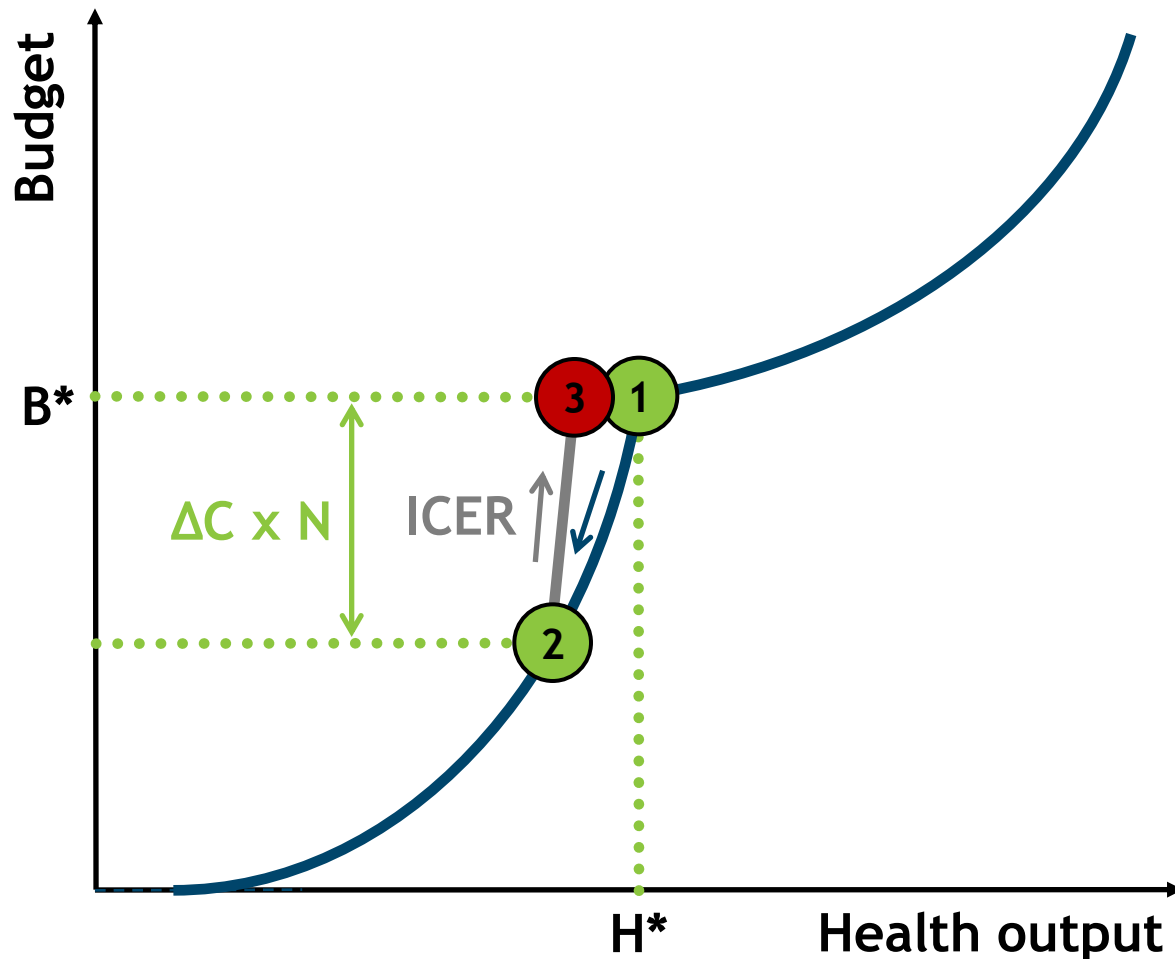
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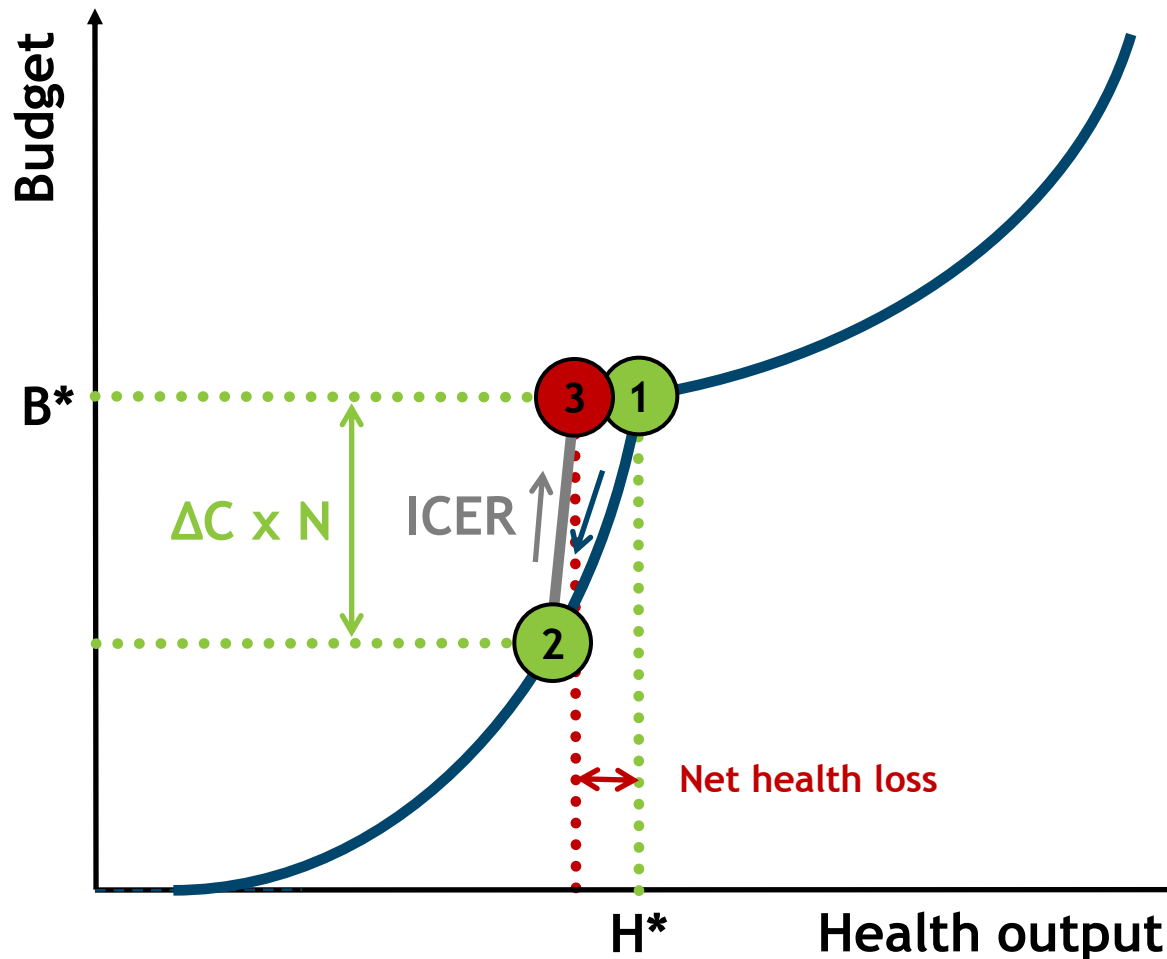
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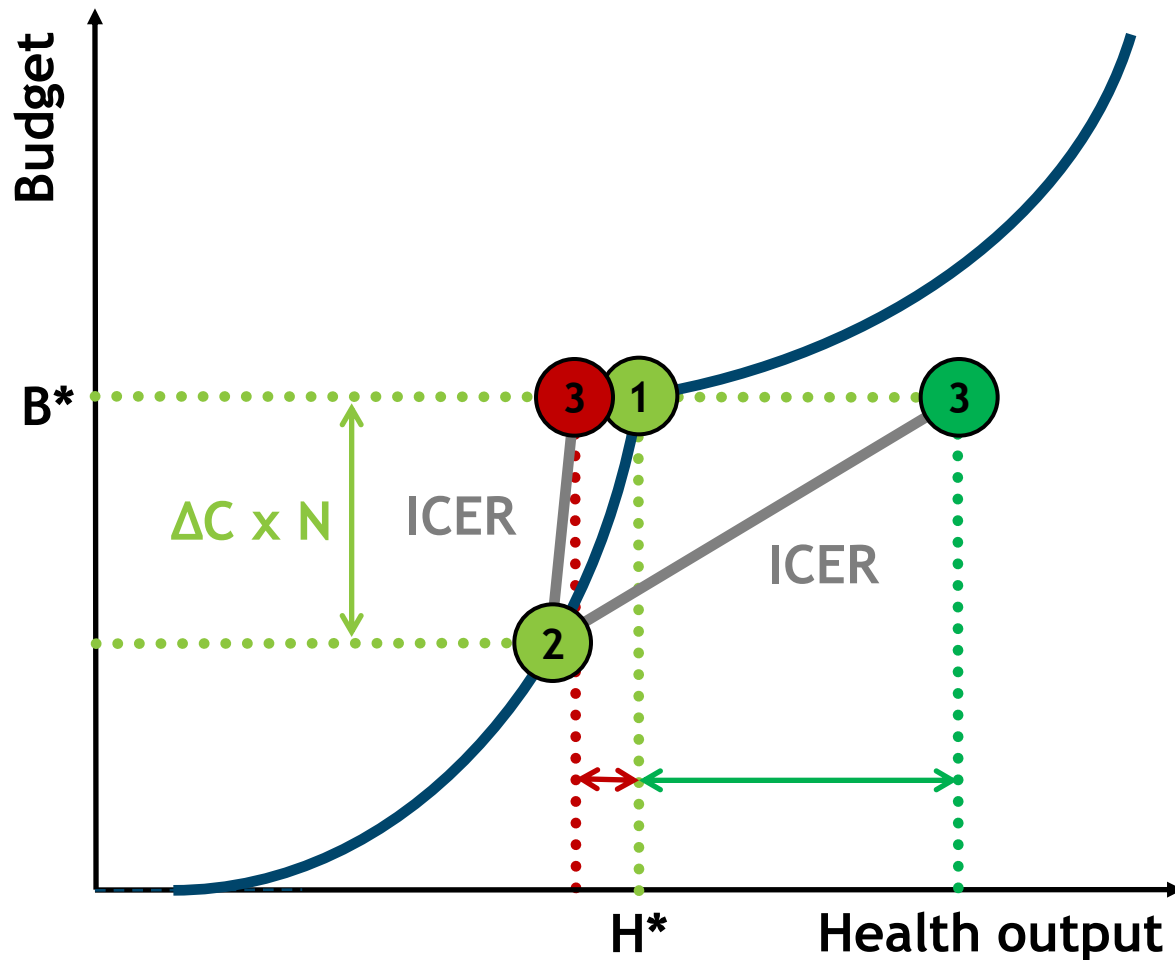
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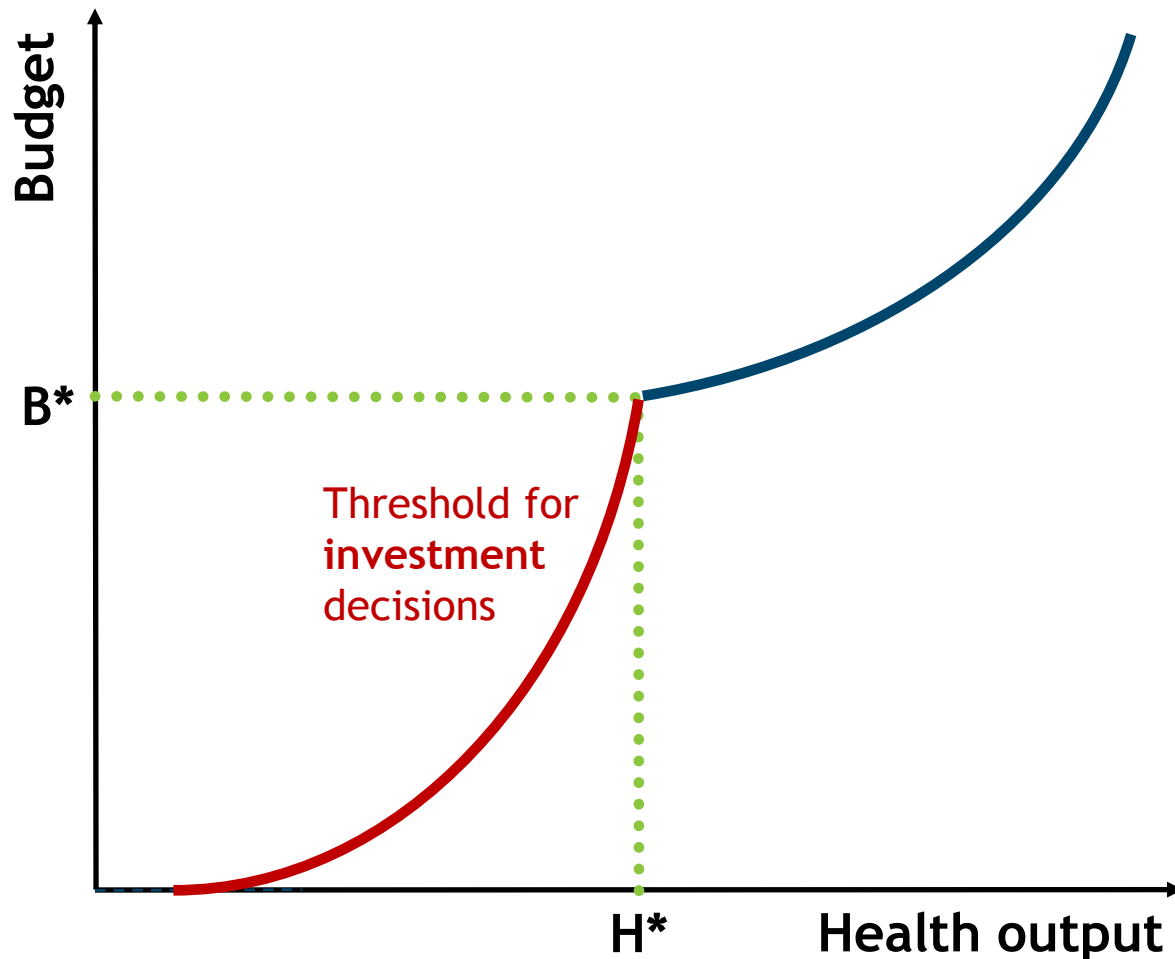
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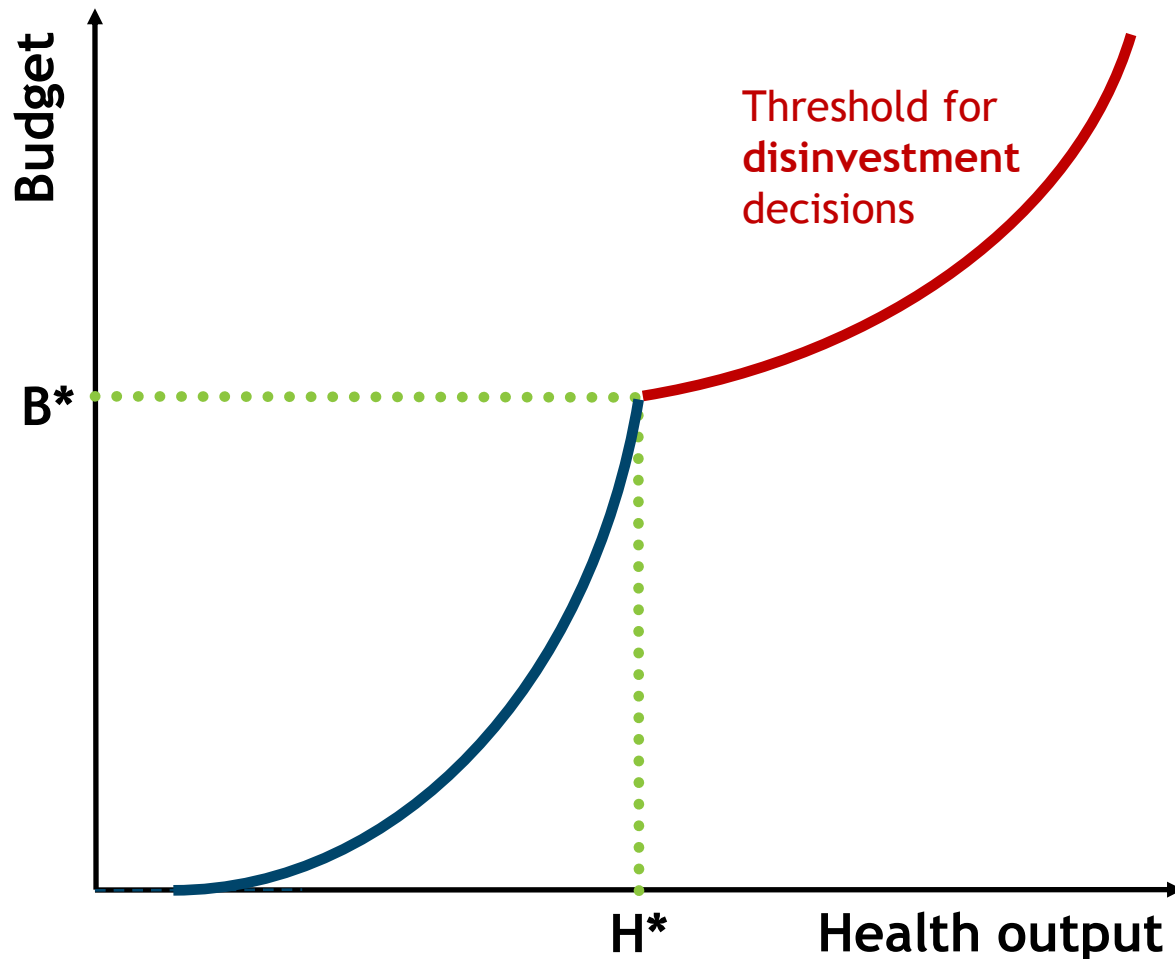
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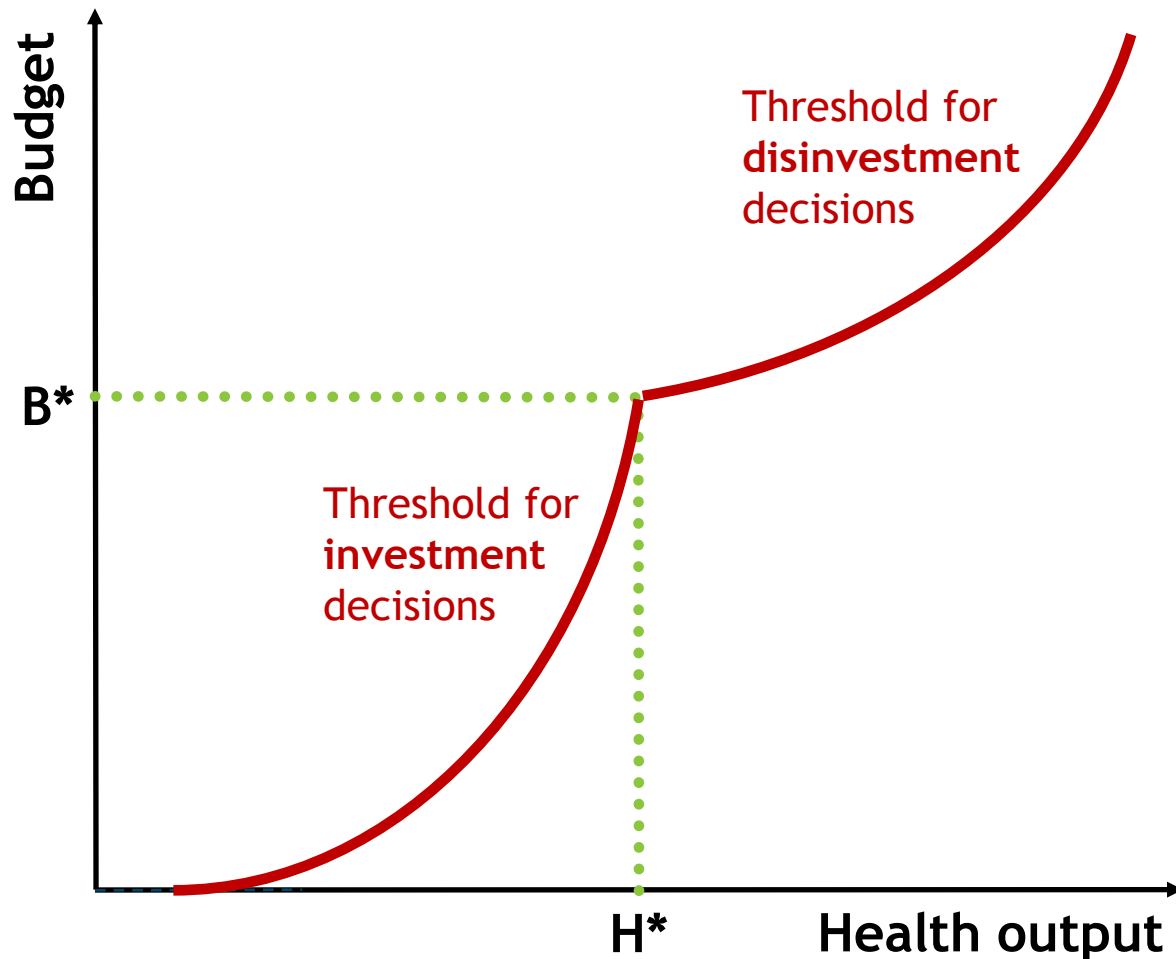
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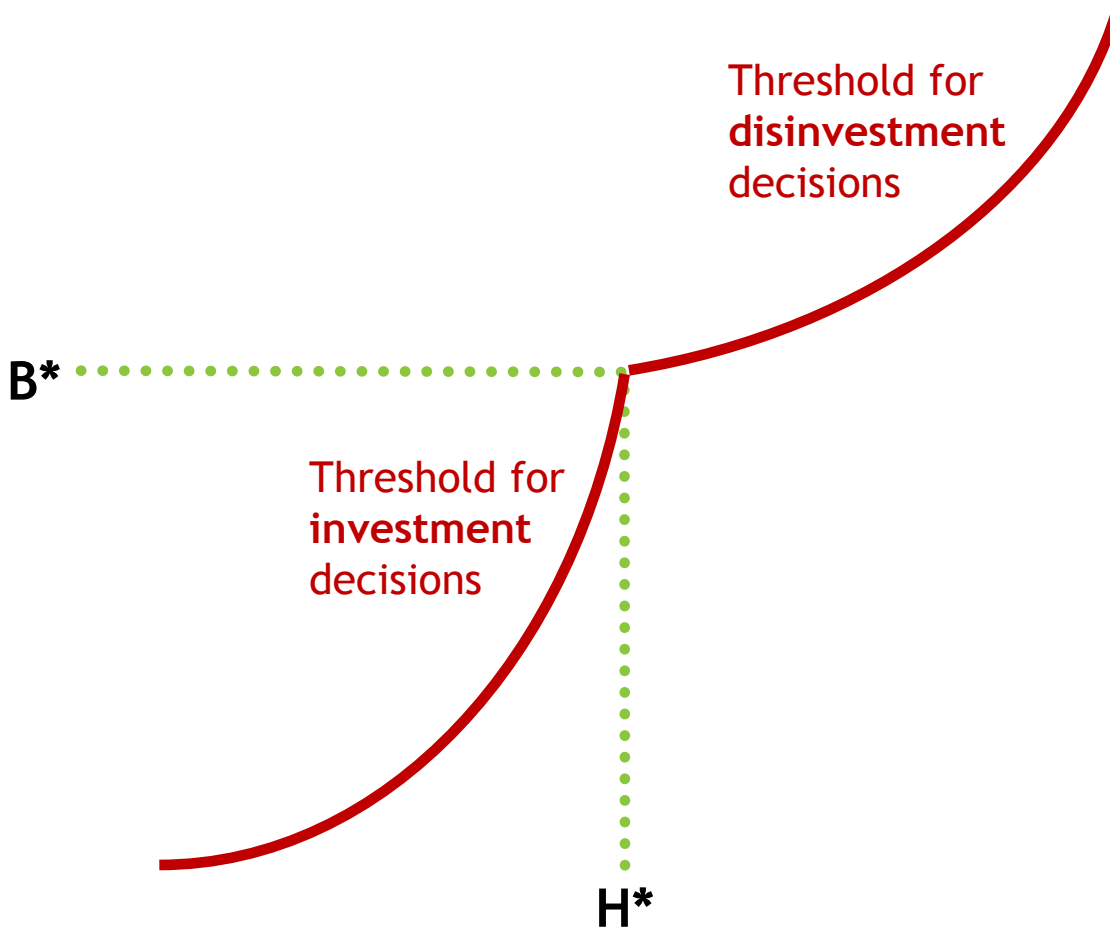


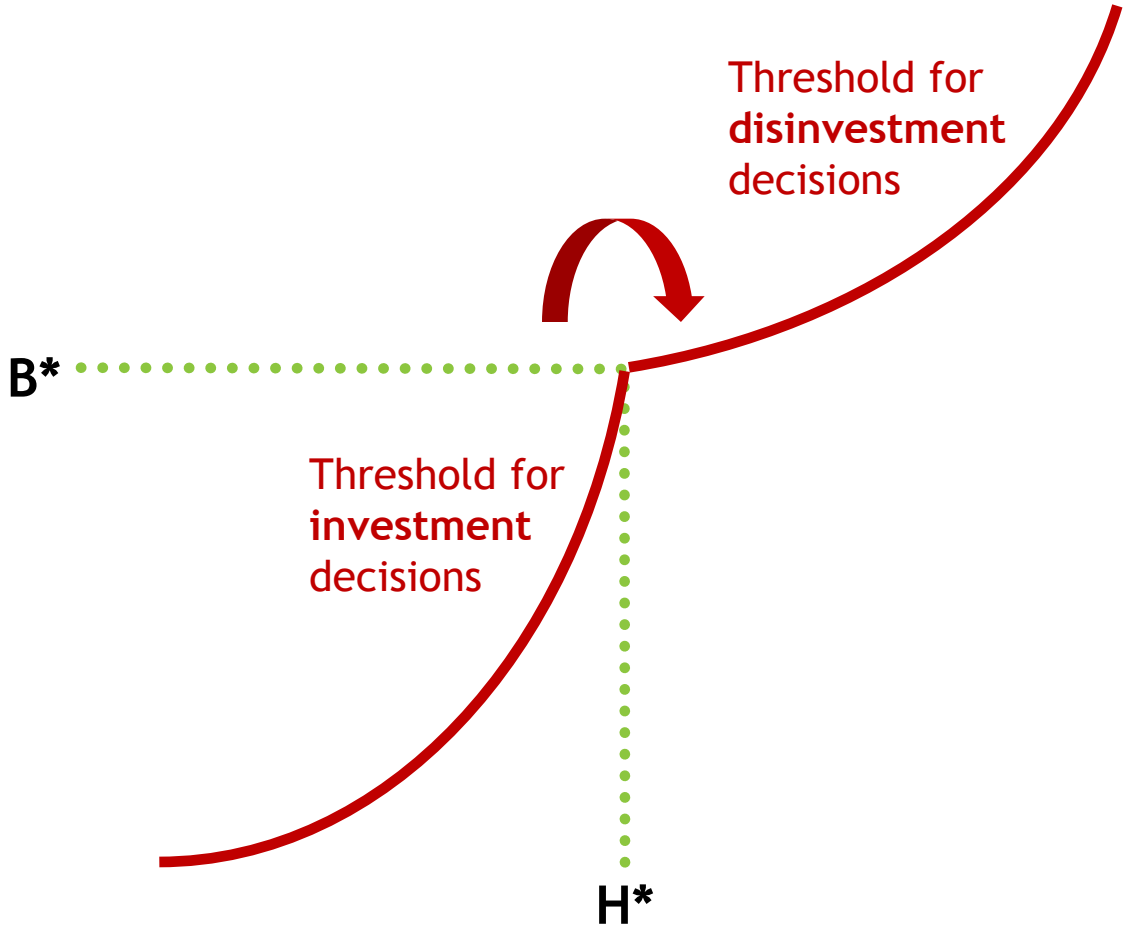
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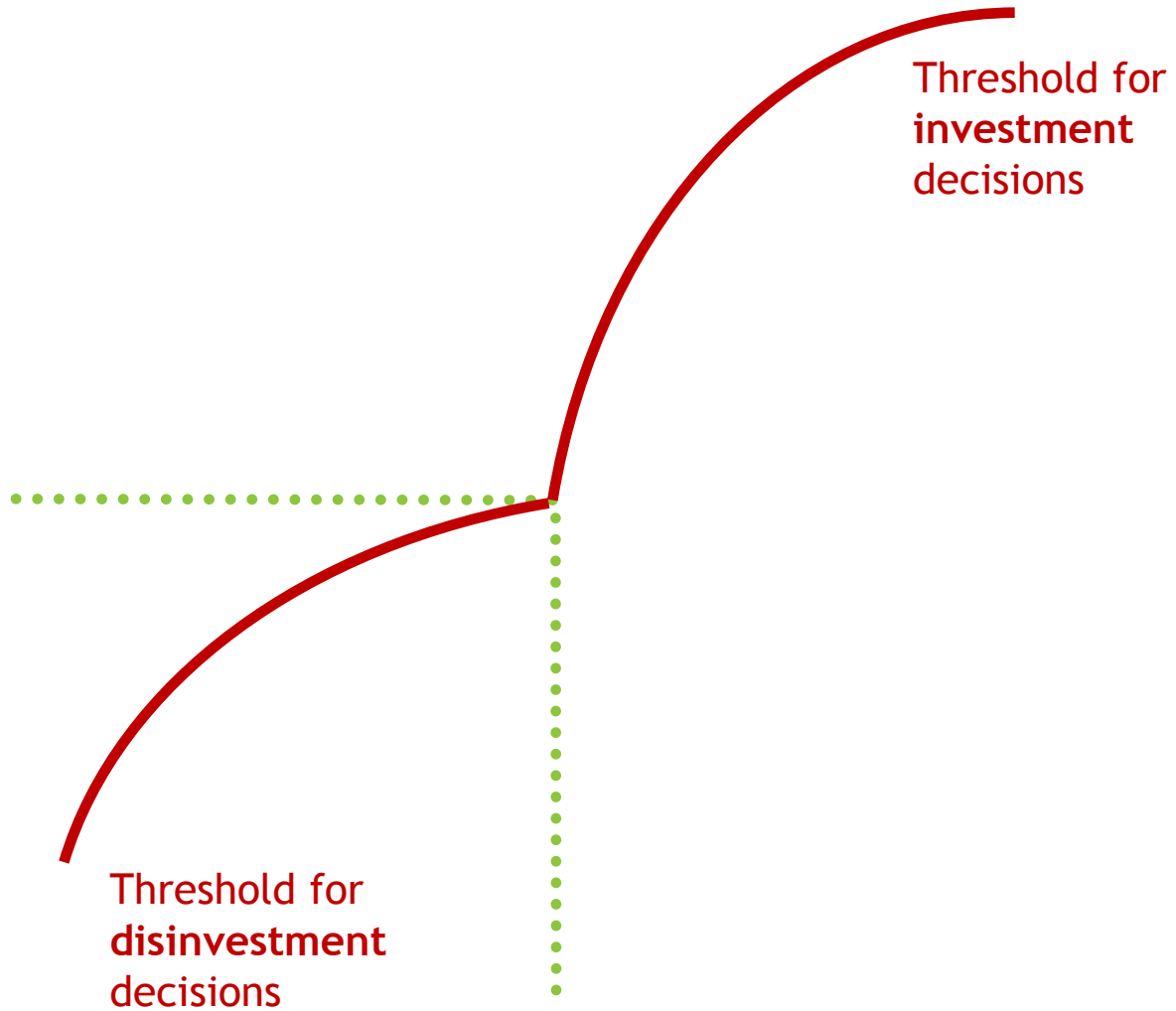


The health production function

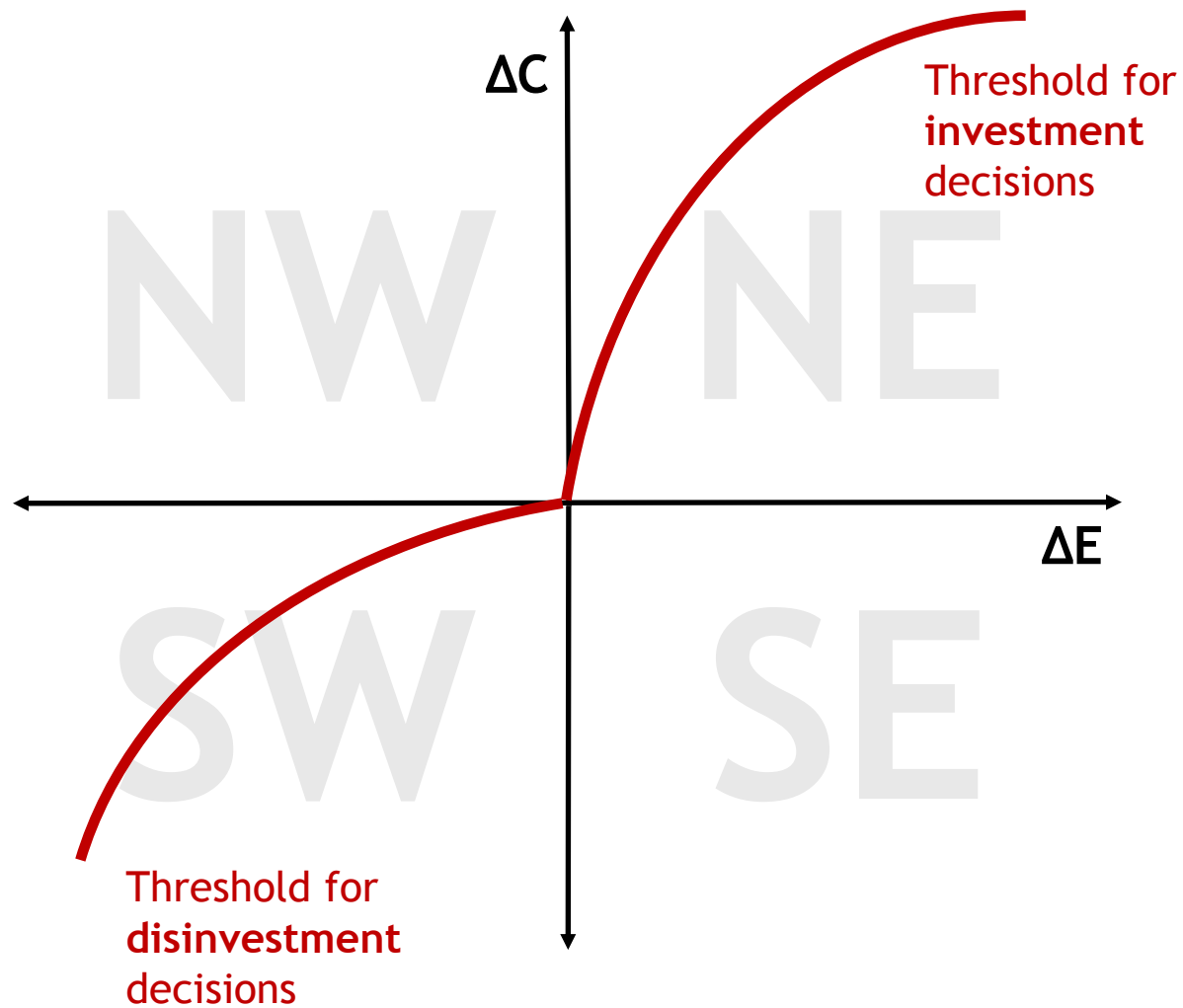




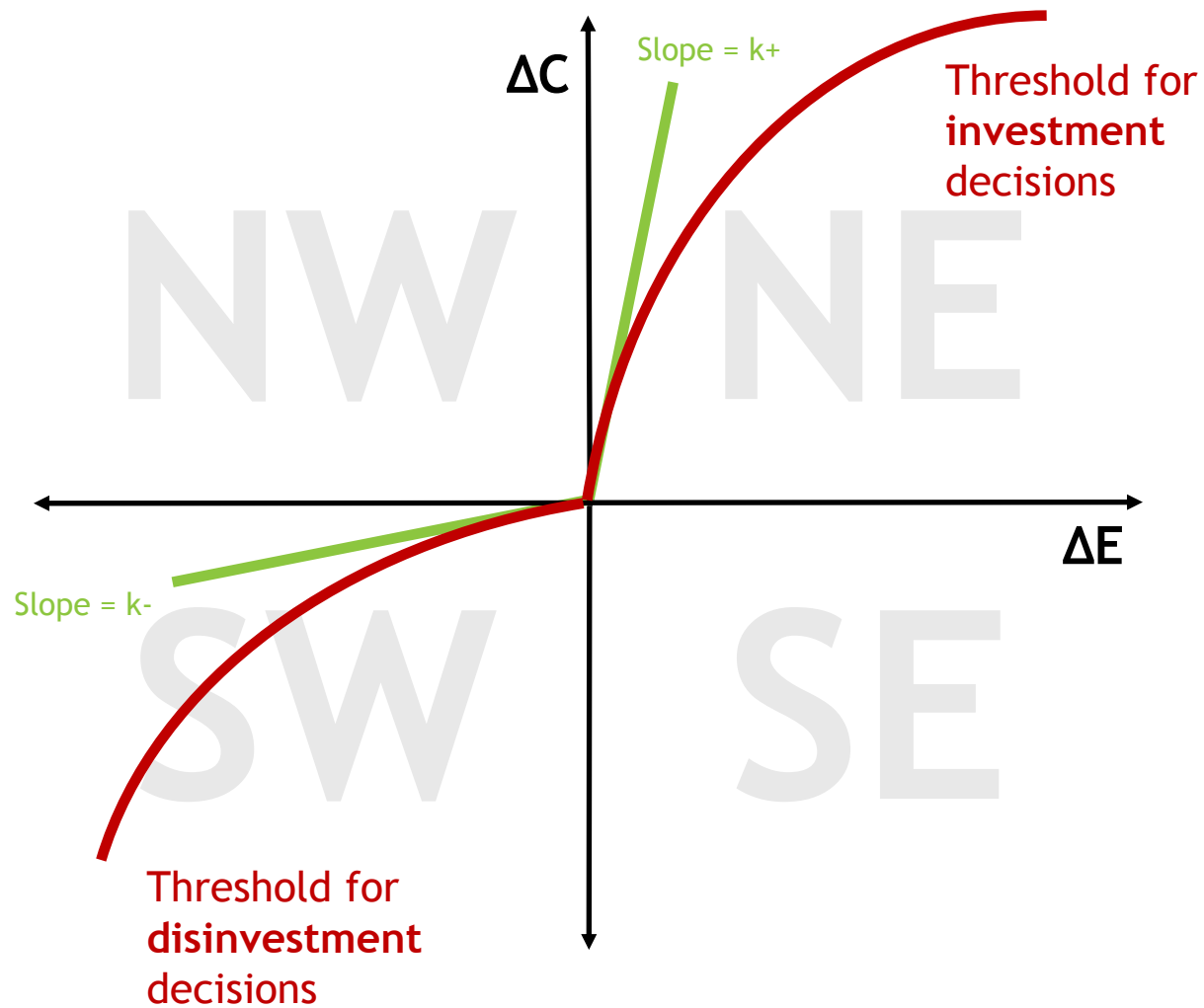




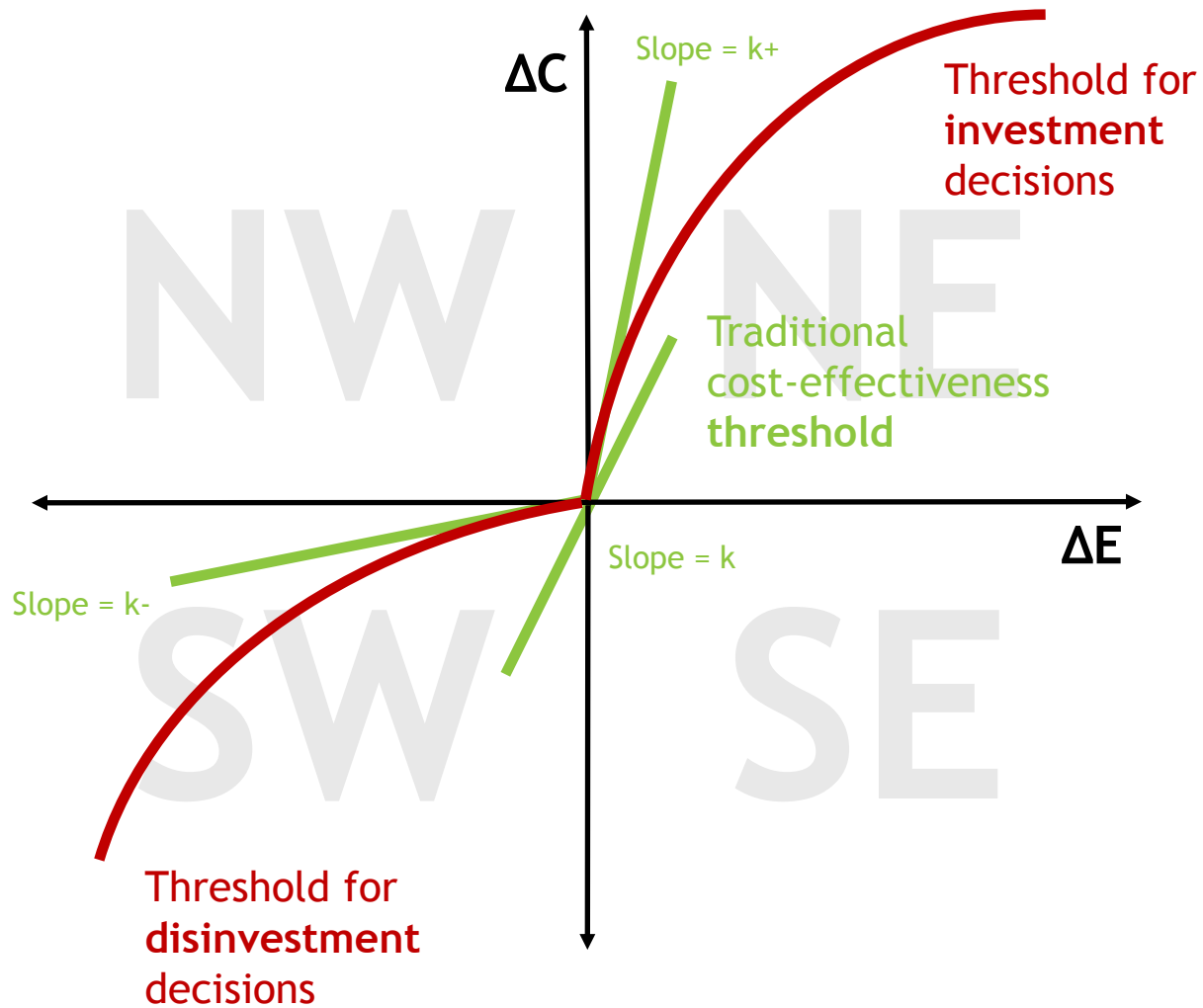
The CE plane



The CE plane



The CE plane



Summary

- **Separate thresholds** should be adopted for investment and disinvestment decisions if the following apply:
 - There is at least some short term **fixity** in the set of adopted technologies
 - The **productivity** of the health system changes over time
- **True for all real-world health systems**



Summary

- The threshold for **investments** (k^+) is **higher than k** , while the threshold for **disinvestments** (k^-) is **lower than k**
 - Investments are cost-effective if the ICER lies **below the higher threshold (k^+)**
 - Disinvestments are cost-effective if the ICER lies **above the lower threshold (k^-)**
- Remember: in the SW quadrant higher ICERs are **preferred** to lower ICERs!



Possible implications

- Interpretation of **ICERs**
- **Net benefit analysis**
 - MC simulations across different quadrants
- **Value of information analysis**
- **Value based pricing in the UK**
- **Empirical estimation of the threshold**



Thank you!

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