The Case for Low and Stable Inflation

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Introduction

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- Ongoing discussion: higher targets desirable due to falling real rates?

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- Ongoing discussion: higher targets desirable due to falling real rates?
- Intellectual foundations for positive inflation targets surprisingly weak!

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  Average inflation close to zero under optimal monetary policy

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  Average inflation close to zero under optimal monetary policy

- Pull to zero inflation is the **'dark force'** of monetary economics

Structure of Presentation

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2. Explain why this implication *should not be taken too seriously*
   Realistic product structure $=>$ positive inflation target optimal
3. Estimate optimal UK target given actual product structure:
   Optimal inflation target: 2.6%
   Target increased by 1.2% over past 20 years

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Systematic inflation/deflation $=>$inefficient price dispersion

$=>$inefficient quantity distortions

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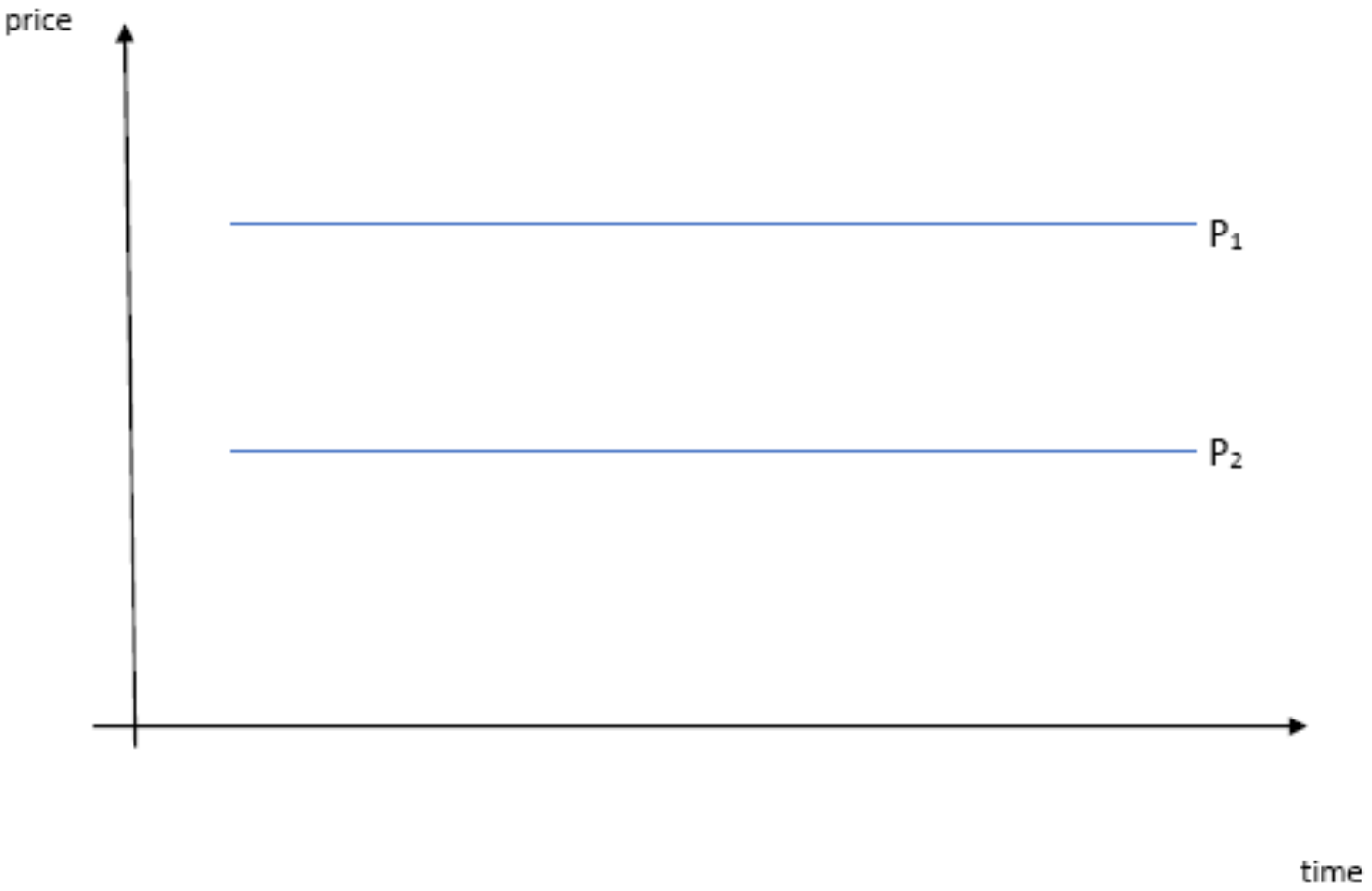
  Systematic inflation/deflation $=>$inefficient price dispersion
  $=>$inefficient quantity distortions

- Quantity distortions particularly pronounced in competitive economies

The Dark Force: Zero Optimal Inflation



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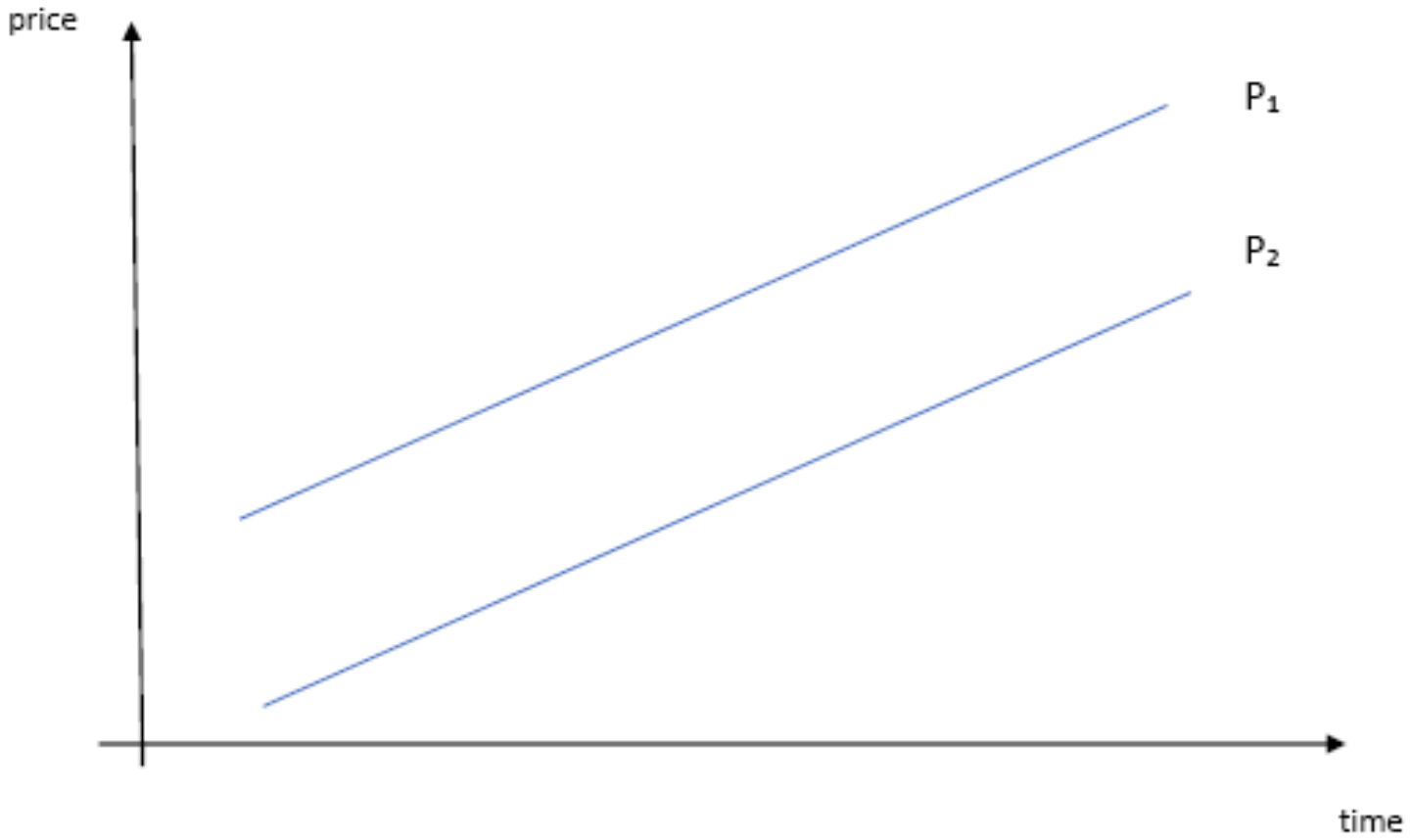

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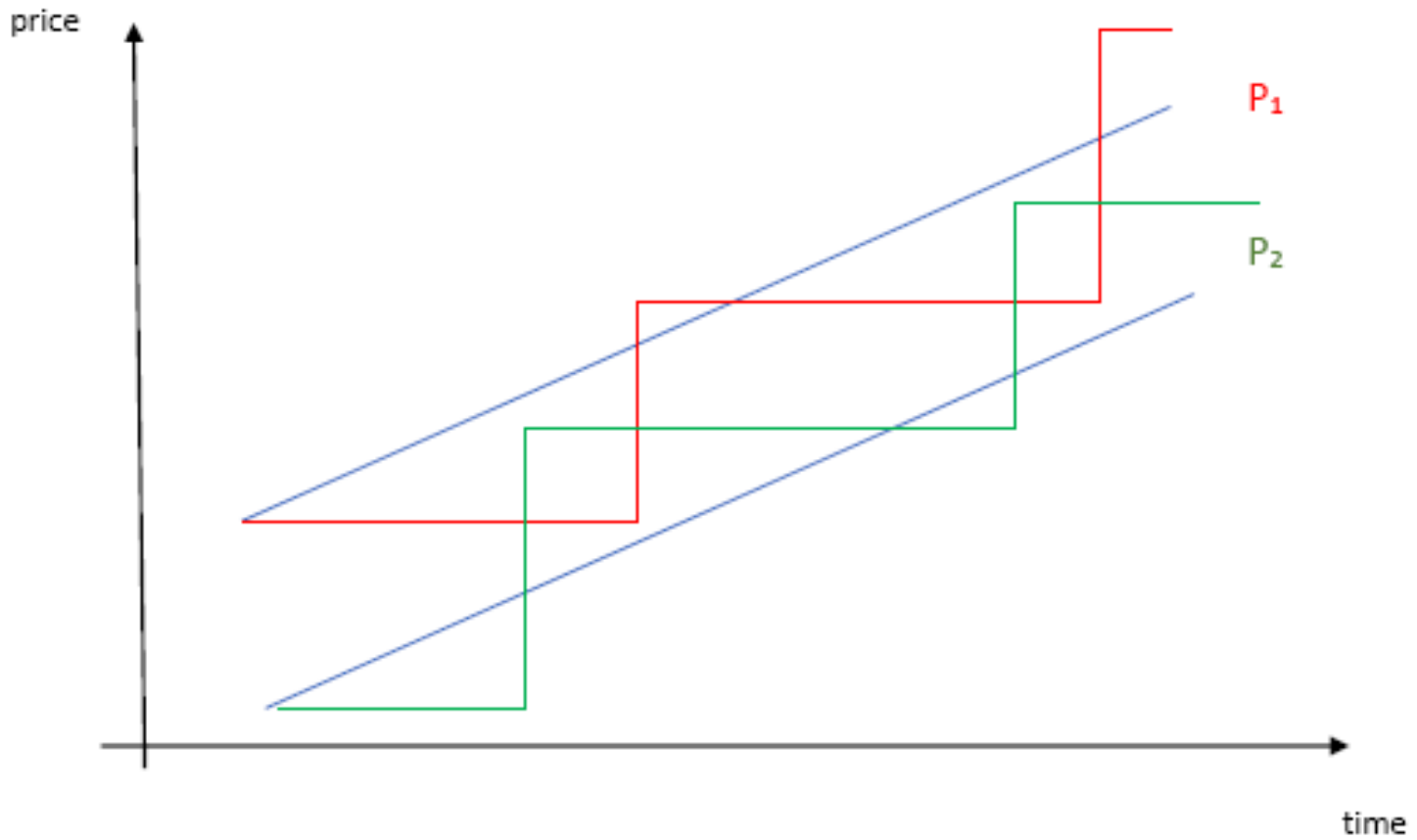

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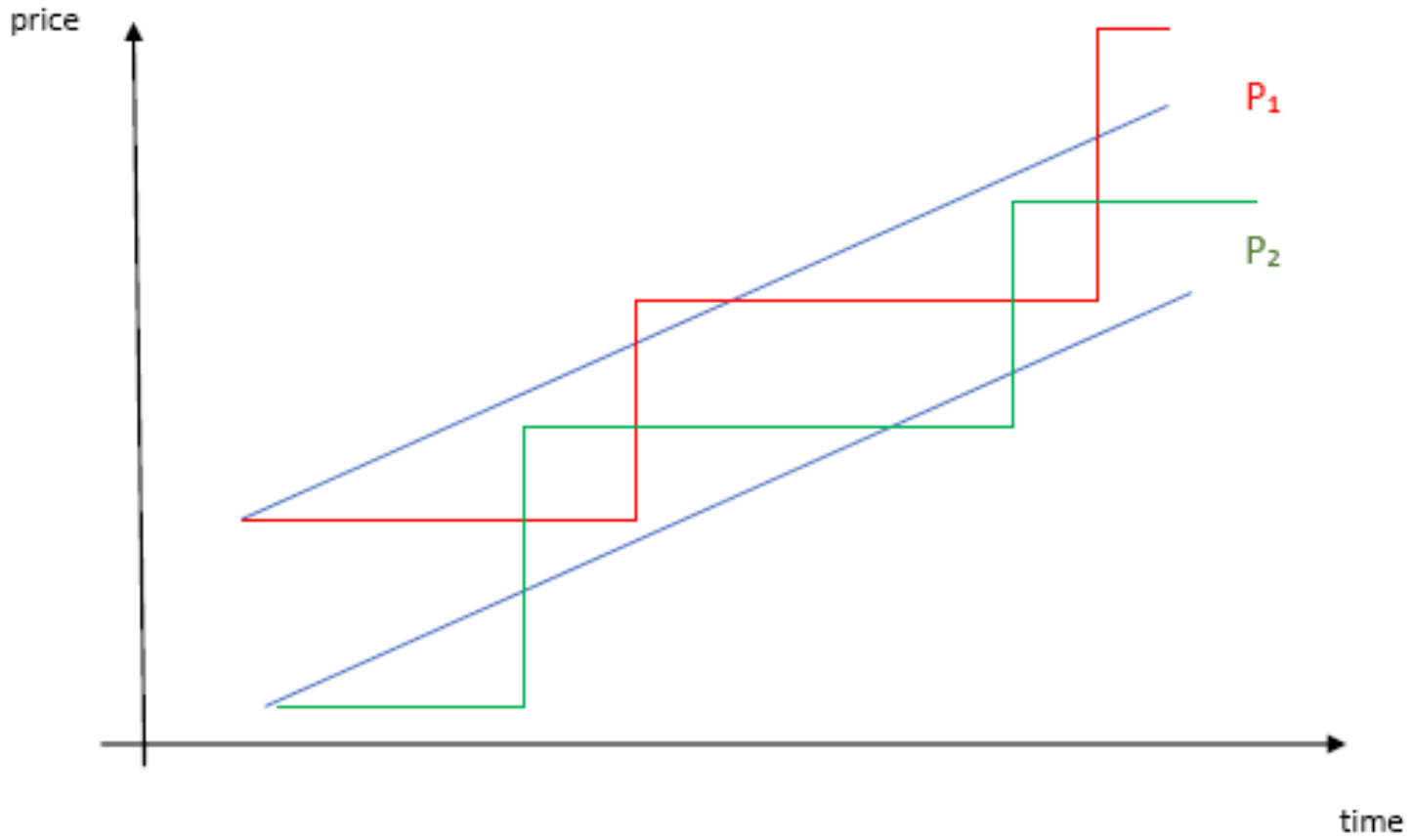

Works similarly for deflation $=>$ zero inflation optimal

Other Forces Affecting Optimal Inflation

- Under typical demand elasticity assumptions:
  Large quantity distortions from price distortions

- Schmitt-Grohé & Uribe (2010): dark force is dominating
  Zero inflation optimal even when considering other forces

Other Forces Affecting Optimal Inflation

Zero inflation optimal even when considering other forces:

- **M. Friedman:** eliminate opportunity cost of holding cash negative $=>$ negative inflation
- **Lower bound on nominal rates:** with *optimal* policy still very low inflation inflation ($<0.5\%$)
- **James Tobin:** downward nominal wage rigidity $=>$ positive inflation Quantification a nightmare...Are wages allocative?

Structure of Presentation

1. Explain why optimal policy delivers zero inflation in MP models
2. **Explain why this implication should not be taken seriously**
3. Estimate optimal UK inflation target for realistic product structure

What's Wrong with Standard Monetary Models?

- **Simplification in modern MP models:**
  Settings without product turnover $=>$ products around forever
- **No relative price trends on average across products**:
  "*Not everyone can depreciate against the average price*"
- **In the data:**
  Constant product replacement & strong relative price trends

What's Wrong with Standard Monetary Models?

- **Strong relative price trends over product lifetime**
  - newly incoming products initially expensive (relative to competitors)
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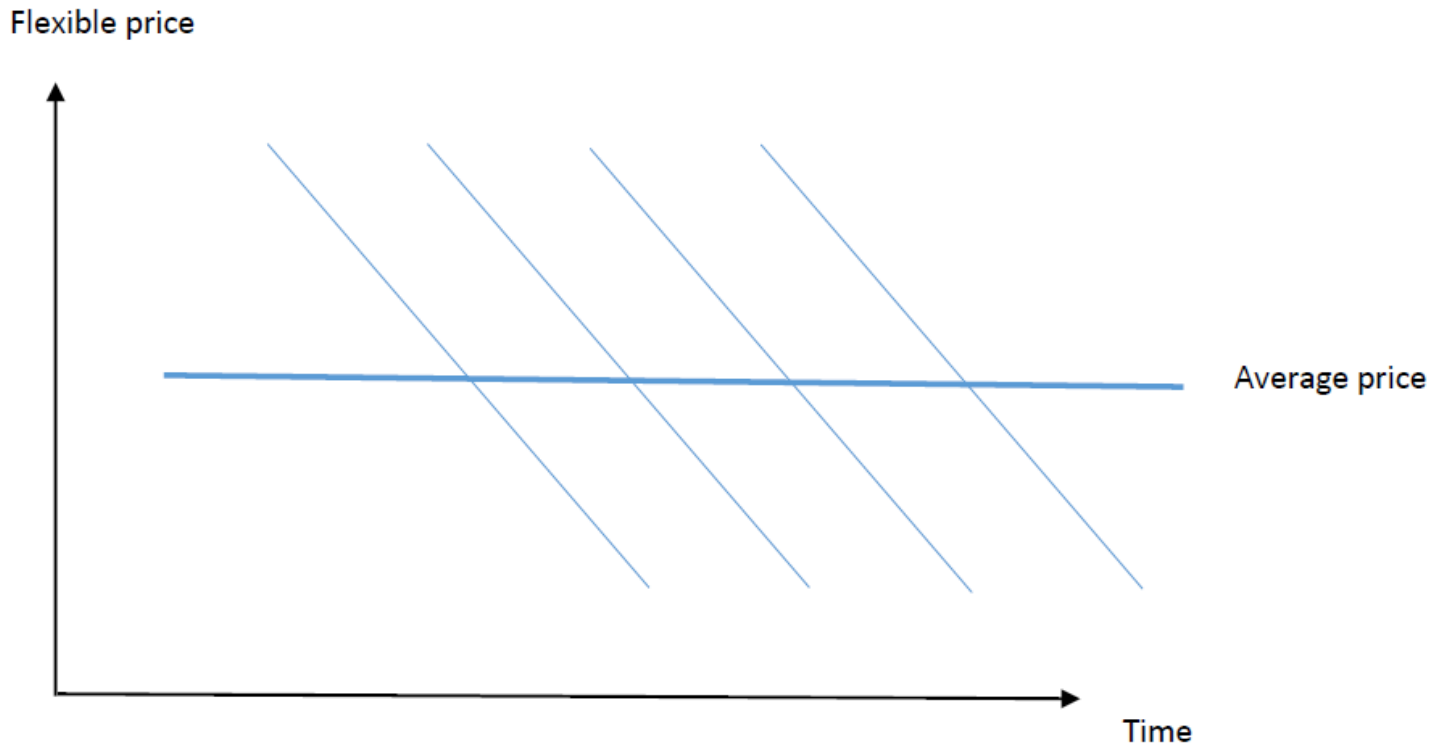
- **Adam & Weber (AER 2019):**
  - this has important implications for the optimal rate of inflation
  - under optimal policy: average inflation is positive

Declining Relative Prices with Zero Inflation



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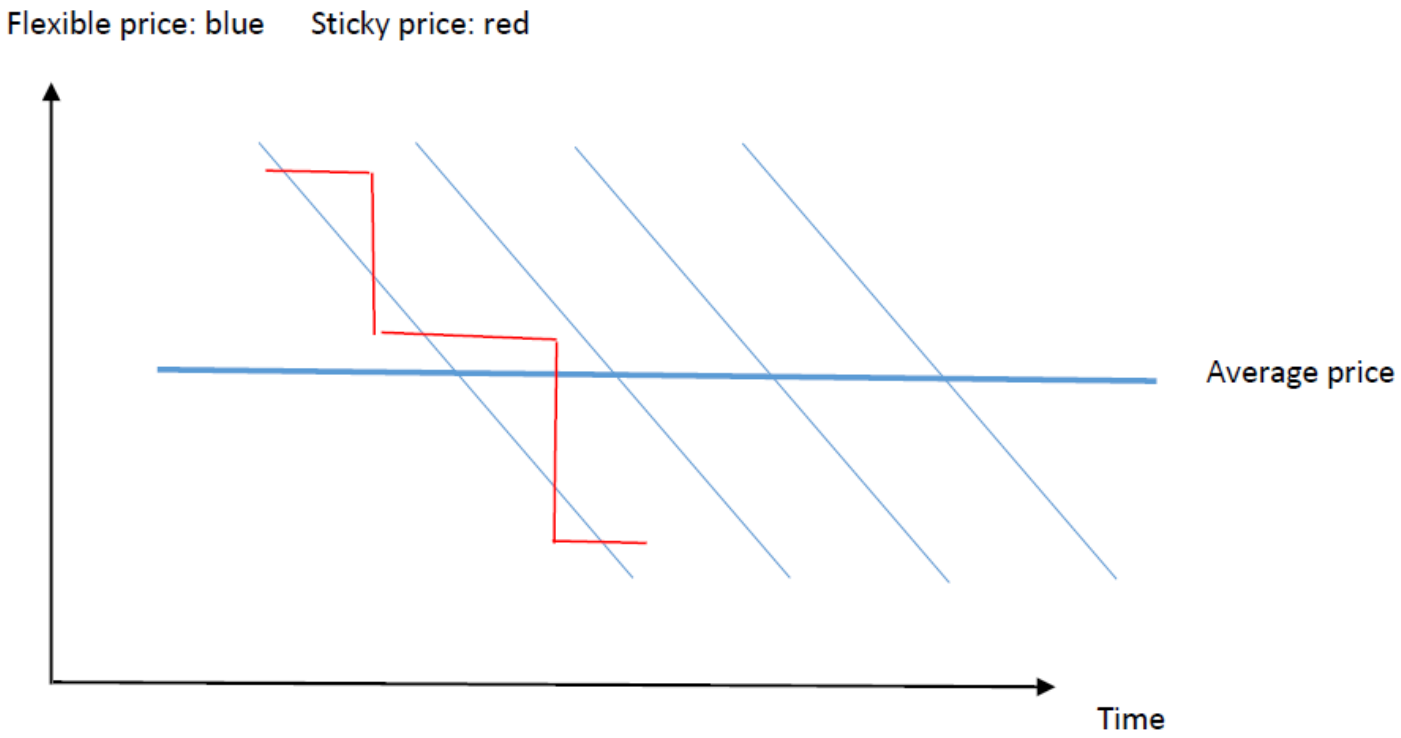

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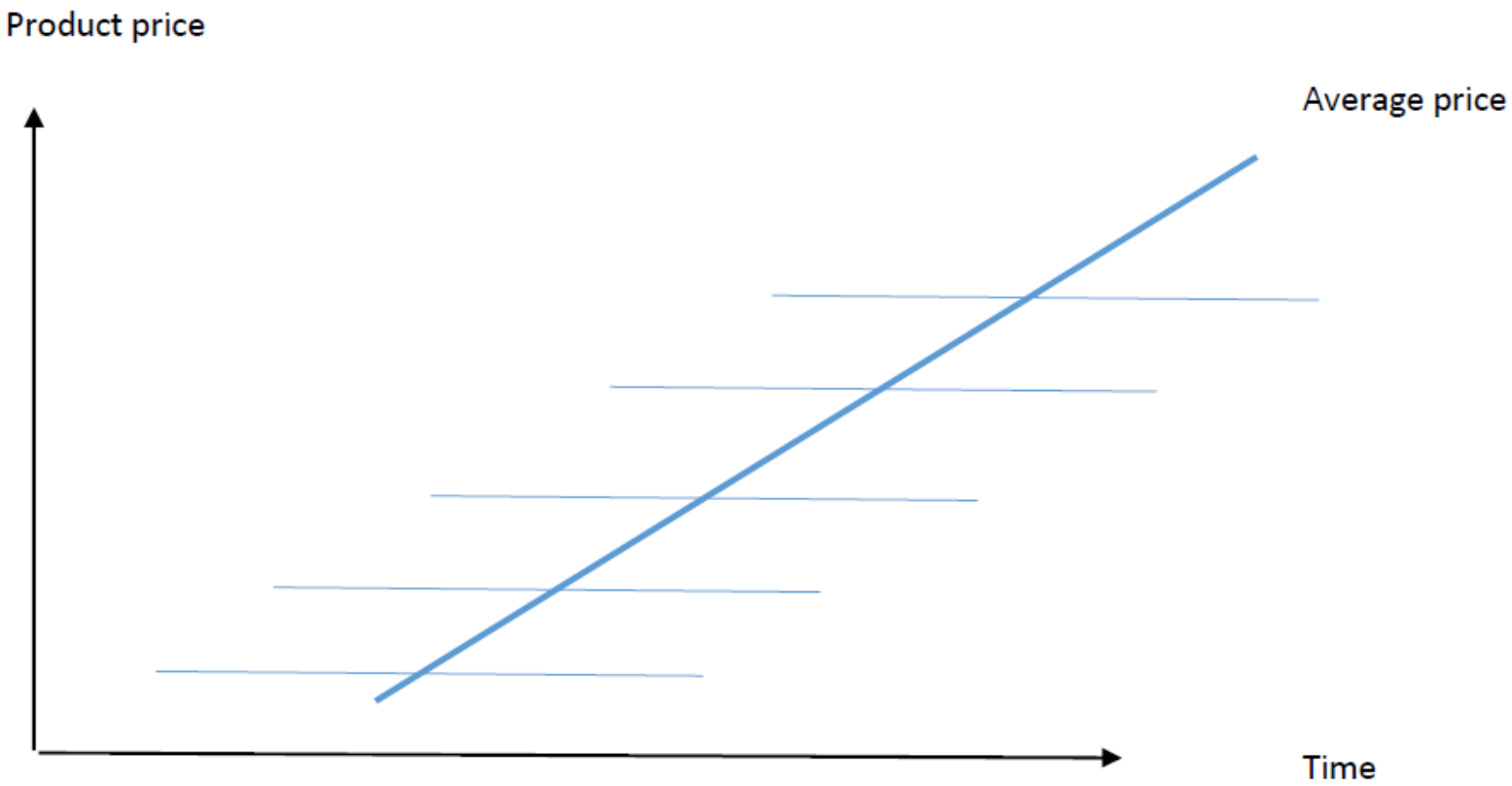

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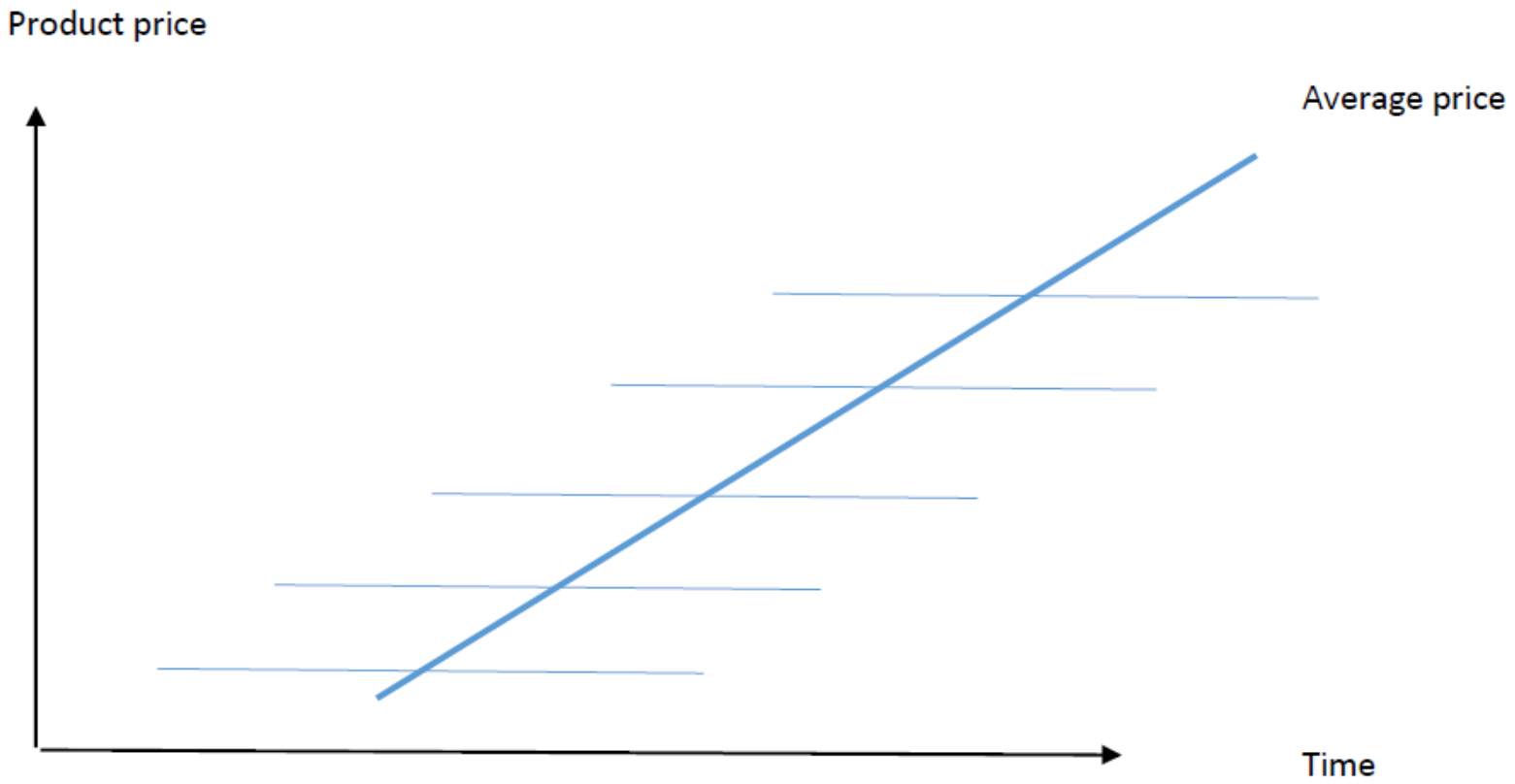

Optimal increase of average price:
inverse of the decrease in relative price on previous slides

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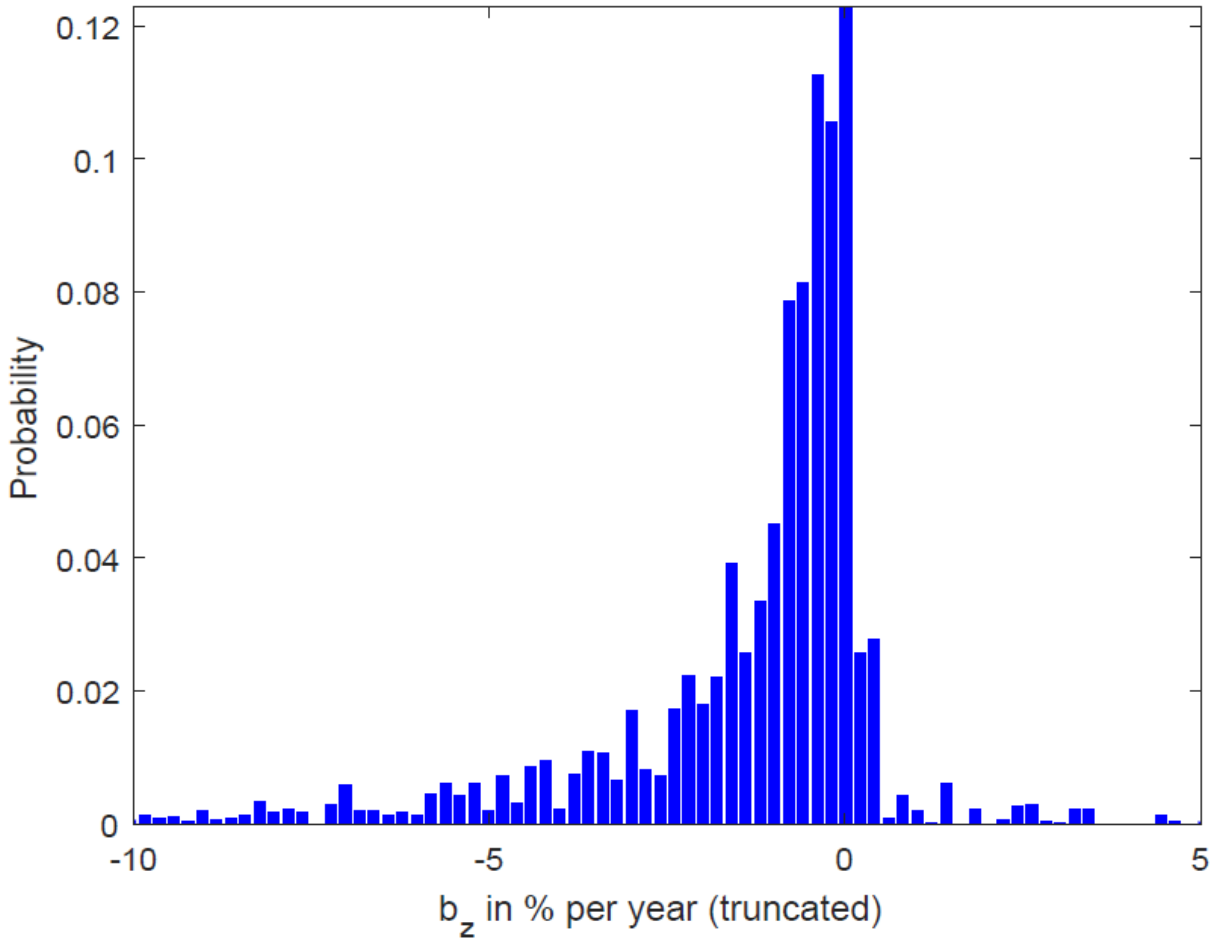
3. **Estimate optimal UK target with realistic product structure**

   Adam and Weber (2020), ´Estimating the Optimal Inflation Target from Trends in Relative Prices'

Annual Rate of Rel. Price Decline, ONS Expenditure Items



UK Relative Price Trends Across Product Categories

Division Description	Relative Price Trend (in % per year)
Food & Non-Alcoholic Beverages	-1.00
Alcoholic Beverages & Tobacco	-0.41
Clothing & Footwear	-9.36
Housing, Water, Electricity & Gas	-0.83
Furniture, Equipment & Maintenance	-1.67
Health	-0.73
Transport	-0.79
Communications	-6.97
Recreation & Culture	-3.98
Restaurants & Hotels	-0.36
Miscellaneous Goods & Services	-1.68

Optimal Inflation with Relative Price Trends

- Optimal inflation target given by

$$\Pi^* = -\sum_i \psi_i \cdot rpt_i$$

ψ_i : expenditure weight of product category i

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- **Optimal inflation target: expenditure-weighted average of the (negative of) observed relative price trends**

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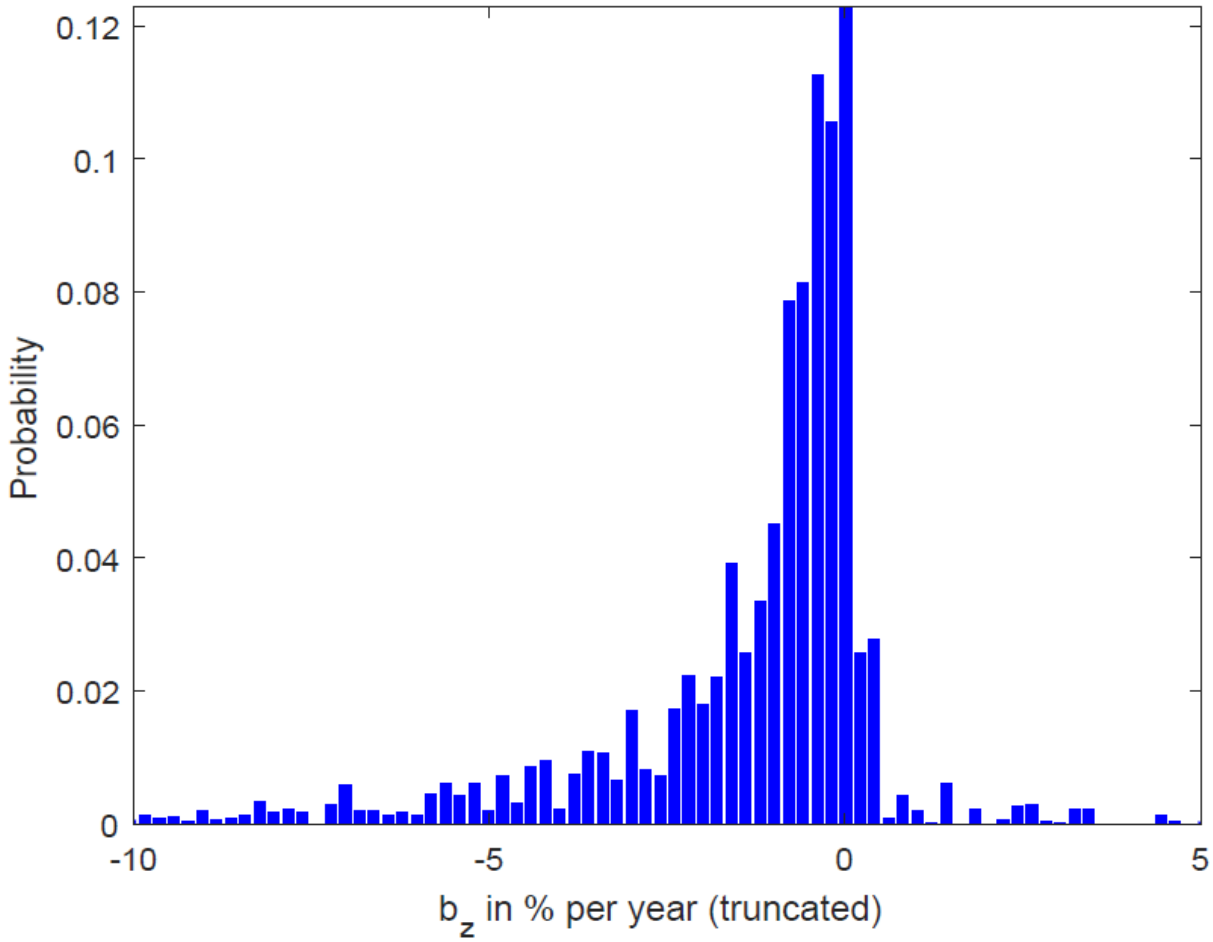


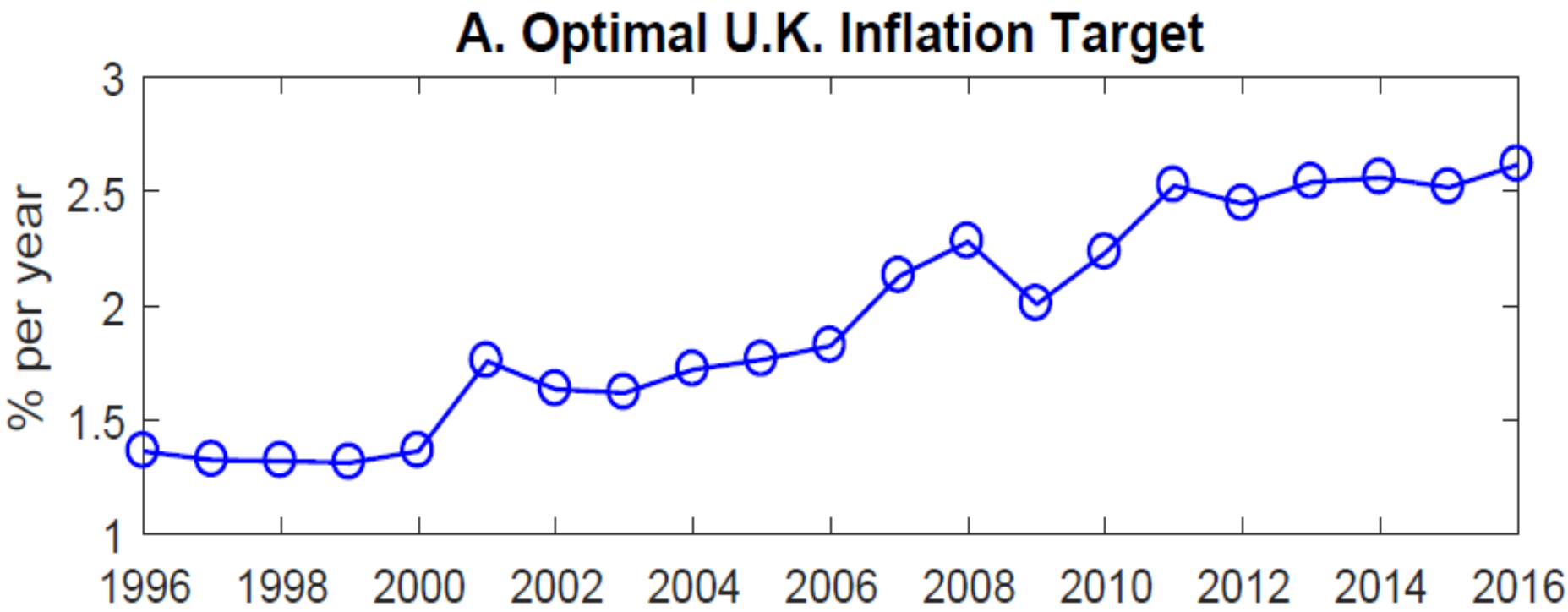
Annual Rate of Rel. Price Decline, ONS Expenditure Items

- Expenditure categories slowly change over time

  CD players drop out, get replaced by flash-drive devices

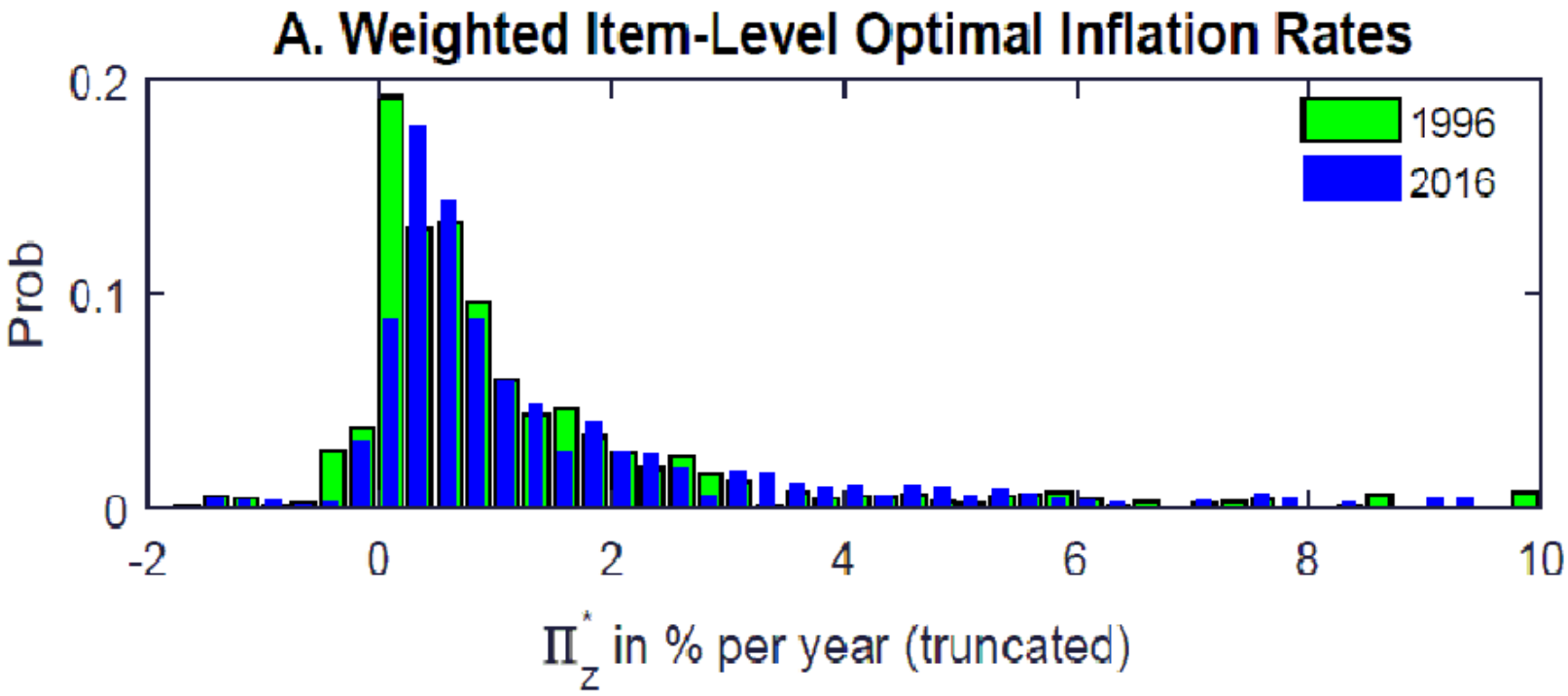
- Optimal inflation target also (slowly) moves over time!

The Optimal InflationTarget



Source of the Upward Trend

Beginning versus end-of-sample distributions:



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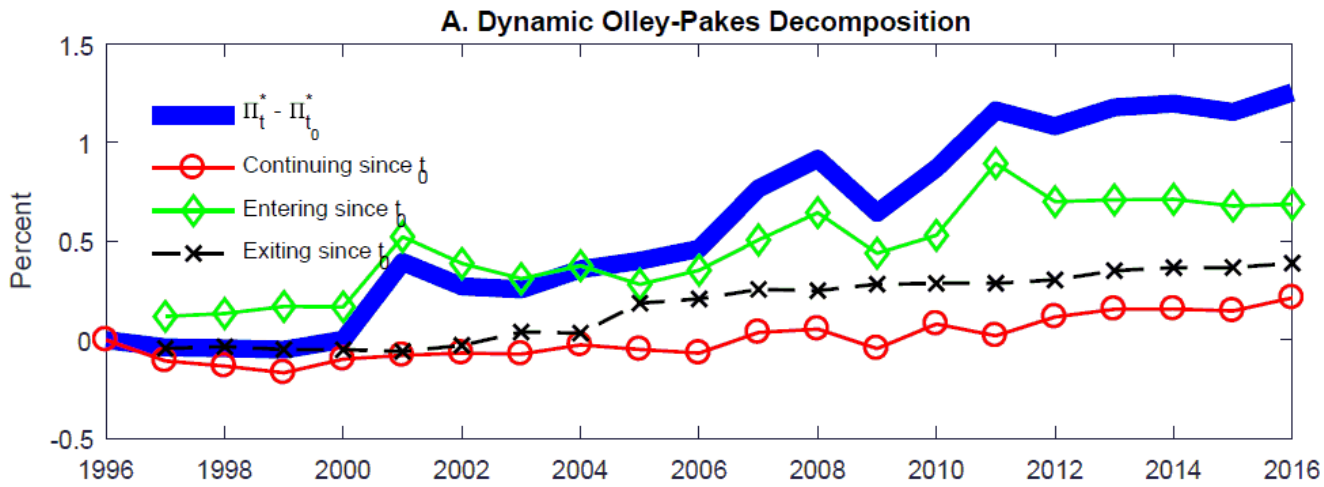

Dynamic Olley-Pakes Decomposition

Robustness of Results

- Results not driven by clearance sales at end of product lifetime
- Mismeasurement of quality progress is not a concern here
  - unaccounted quality progress: biases relative price trends
  - unaccounted quality progress: biases inflation rate

  Both biases cancel: our method delivers correct answer!

Conclusions

- **Possible to overcome 'dark force' in monetary models**
- Realistic product structure: significantly positive inflation targets (2.6%)
- Acceleration of relative price trends => higher optimal targets
- Highlights importance of supply-side factors for optimal target (& for stabilization policy)

References

Adam and Weber (2019), *Optimal Trend Inflation*, American Economic Review, Vol. 109, 702-737

Adam and Weber (2020), *Estimating the Optimal Inflation Target from Trends in Relative Prices*, University of Oxford mimeo,

Schmitt-Grohé and Uribe (2010), *The Optimal Rate of Inflation*, in: Handbook of Monetary Economics, Vol. 3B, 653-722, edited by B.M. Friedman and M. Woodford