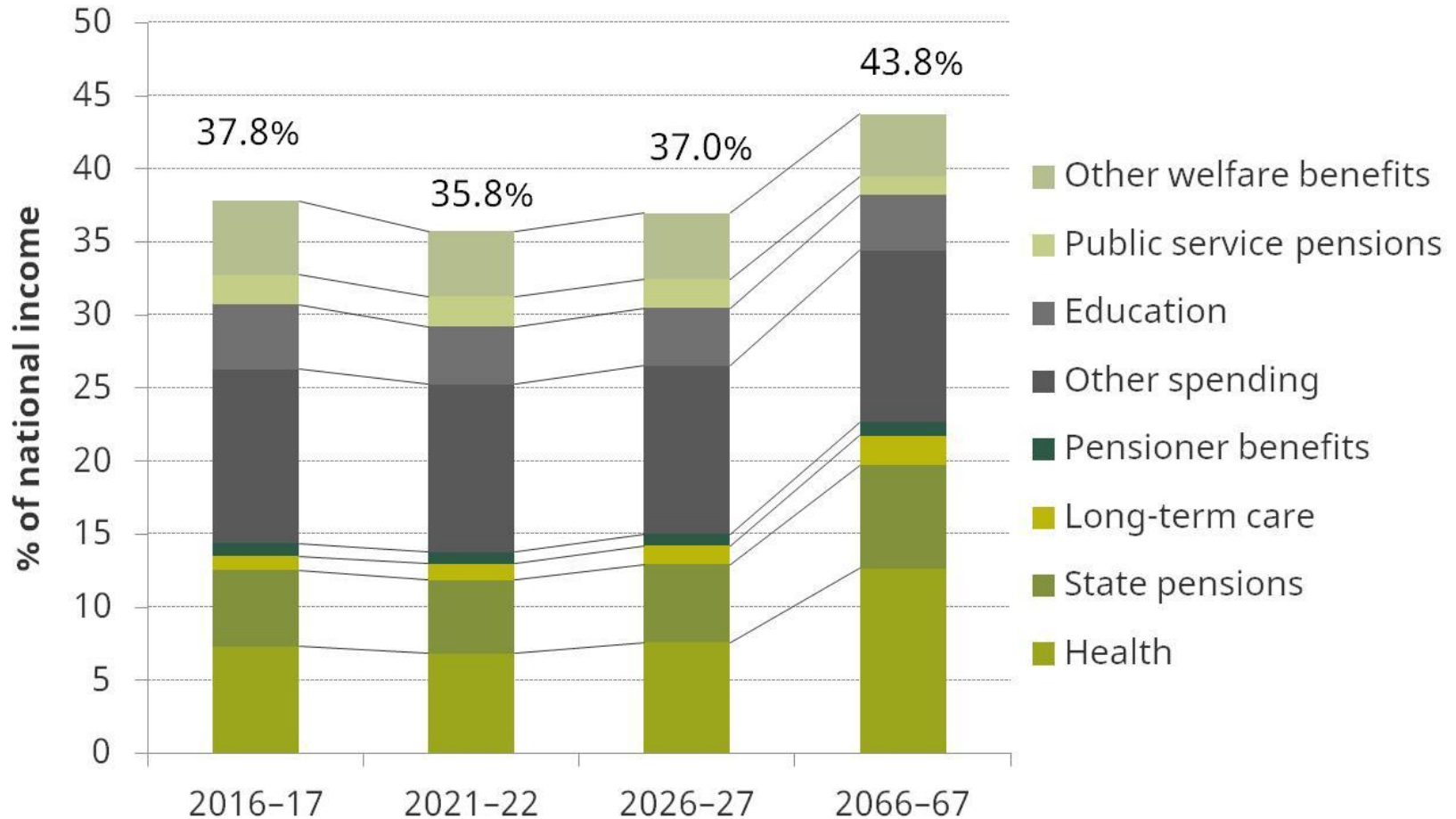


# Public Economics: Indirect Taxation

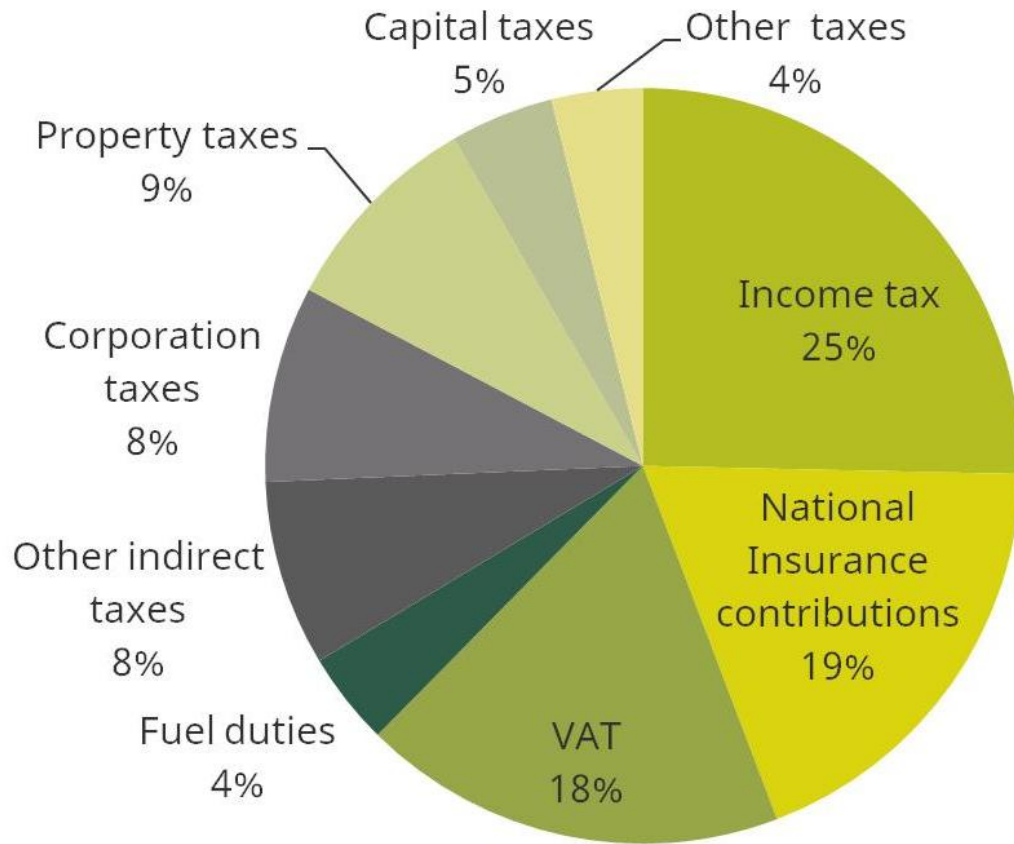
Ross Warwick, IFS

# Upward pressures on UK public spending



Source: Figure 9 in Crawford and Emmerson (2017).

# UK tax revenue



**Indirect taxes are levied on the sale of goods and services**

Source: Figure 2 in Miller and Roantree (2017).

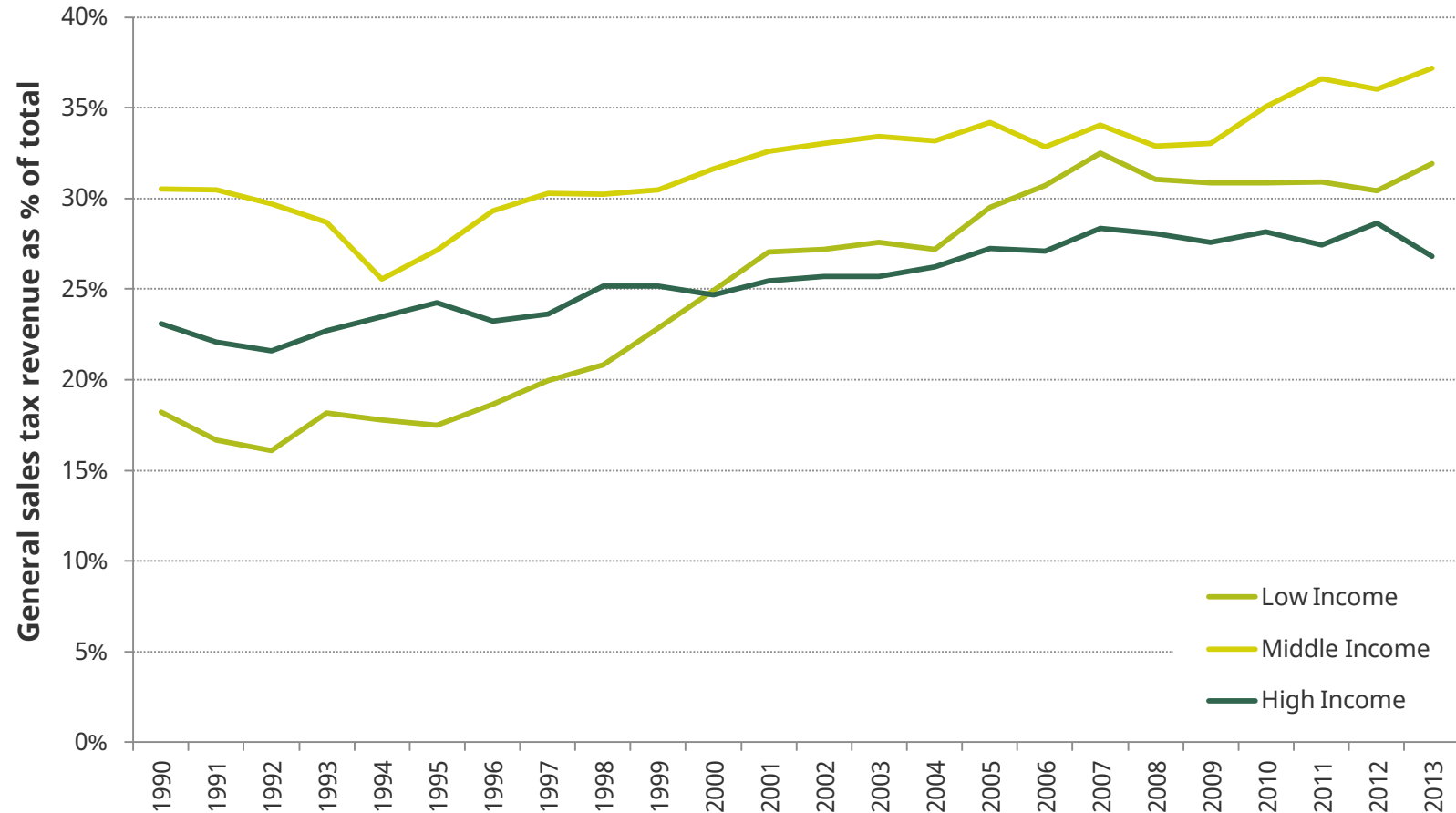
# Even more pressing in developing countries

## Strong relationship between development and size of state

- In period 2000-2009, tax/GDP ratio was 13.7% in low-income countries and 23.5% in high-income countries (McNabb & LeMay-Boucher, 2014). Why?
  - Resource constraints on tax administrations
  - Large informal sector
  - More corruption impacts ability to tax higher earners and tax morale
  - Public services (e.g. health care) as luxury goods? No consensus here (Acemoglu et al, 2013)
- Average rates of corporate tax have been falling and trade is on average becoming more liberalised

## Indirect taxes have an important role to play

# General sales tax revenues on the rise



Source: Figure 1 in Abramovsky, Phillips and Warwick (2017).

# Outline of presentation

## 1. Introduction

## 2. Principles of indirect taxation

- What should be the tax base?

## 3. Rate structure (of VAT)

### A. Equity arguments

### B. Efficiency arguments

- Should all goods/services be taxed at an equal rate?

# 1. Introduction

# Principles of tax system design

## Worth bearing in mind a few guiding principles for the design of a tax system when thinking about indirect taxes

- Simplicity – easy to understand and comply with
- Neutrality – treating similar activities in similar ways
- Stability – minimising the frequency of policy changes
- System as a whole – not evaluating a tax in isolation

All of this in order to minimise welfare losses, minimise administration costs and promote fairness and transparency for a given distributional outcome.

See the key references at the end of this lecture for more detail on these!



# Purpose of indirect taxes

## Indirect tax revenues represent more than 10% of UK GDP

We need to understand what they try to achieve and how their effect on agents' behaviour might determine what they do achieve

- Potential objectives
  - Raise government revenue for investment in public goods or to redistribute resources
  - Correct market failures when marginal social costs and benefits are not aligned by the market
  - Serve political causes such as protecting domestic industry

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- Potential objectives
  - **Raise government revenue for investment in public goods or to redistribute resources**
  - Correct market failures when marginal social costs and benefits are not aligned by the market
  - Serve political causes such as protecting domestic industry
- Today the focus is general commodity taxation

## 2. Principles of indirect taxation

# What makes a good indirect tax?

## Diamond-Mirrlees (1971)

### Production Efficiency Theorem

- There should be no taxation of intermediate goods, thus ensuring production efficiency in the economy – a second-best outcome
- The economy should be maintained at the boundary of Production Possibility Frontier

Any set of final prices for commodities achieved by a mixture of taxes on intermediate and final goods can be achieved by taxes on final goods alone while increasing overall output, which would be a Pareto-improvement

The result does require assumptions of constant returns to scale and no market failures

# What makes a good indirect tax?

## Production Efficiency Theorem

This theorem is closely linked to the general principle of Neutrality

- If taxes are levied on business inputs, a longer supply chain will attract more tax
- There would be distortive incentives for businesses to carry out multiple stages of production
  - So don't tax business inputs (different to taxing businesses more generally!)

Production Efficiency Theorem is why economists like Value Added Tax

- Collected incrementally at each stage of production; businesses can reclaim the VAT they have paid on inputs
- Ultimately the tax base is only consumption

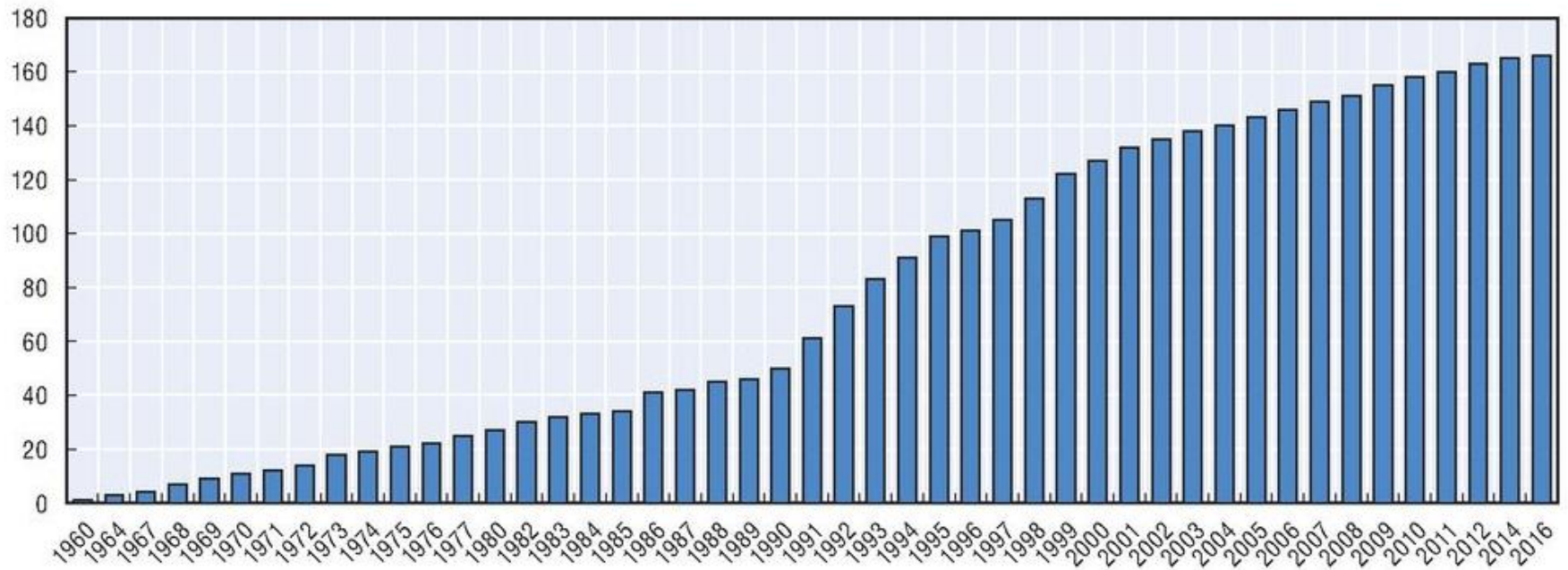
# Value Added Tax: Background

	VAT charged on sales	VAT reclaimed on input purchases	Net VAT liability
<i>Analysis of transactions</i>			
Sale from A to B for £100	£20	£20	£0
Sale from B to C for £300	£60	£60	£0
Sale from C to consumer for £500	£100	£0	£100
<i>Analysis of firms</i>			
Firm A	£20	£0	£20
Firm B	£60	£20	£40
Firm C	£100	£60	£40

Source: Mirrlees et al (2011)

# The spread of VAT

Figure 1.5. Number of countries having implemented a VAT 1960-2016



Source: OECD (2016)

# Desirability of VAT

## Why has it spread so rapidly?

- In general, it satisfies Production Efficiency Theorem
  - Considered by many to be a “pro-growth” tax
  - Exceptions include the cases of exemptions and unregistered businesses
- Also should aid tax compliance and formalisation
  - A trader evading VAT only escapes with the VAT due on that transaction
  - Dual invoice system provides a mechanism for cross-checking purchases against sales, increasing compliance
  - Unregistered firms cannot receive VAT refunds



# Implementation issues

## Exemptions

- Apply to certain goods and services and also for firms not registered for VAT
- Sellers are not required to charge VAT but they also cannot reclaim the VAT paid on inputs – there is “embedded VAT” in their sales
- Distort production decisions (violating Production Efficiency Theorem), create incentives to self-supply, and create additional compliance and admin costs

## Administration

- Compliance costs of VAT can be significant for smaller businesses – justification for a high registration threshold?
- VAT requires effective system of refunds to work well

## **3. Rate structure of VAT**

### **a. Equity arguments**

# Rate structure of VAT

Given the desirable properties of VAT, a major question surrounding its implementation concerns rate structure

Many countries have both reduced and zero rates of VAT for some goods as well as exemptions

- The UK has a standard rate of 20% but charges 5% for home energy supply and 0% for most food
- Financial services and property transactions are exempt from VAT

## **Should there be a uniform tax rate or is there a case for rate differentiation across goods and services?**

There are arguments relating to efficiency and to equity or fairness.

# Should they be taxed differently?



**VS**



# Rate structure of VAT

## Equity arguments I

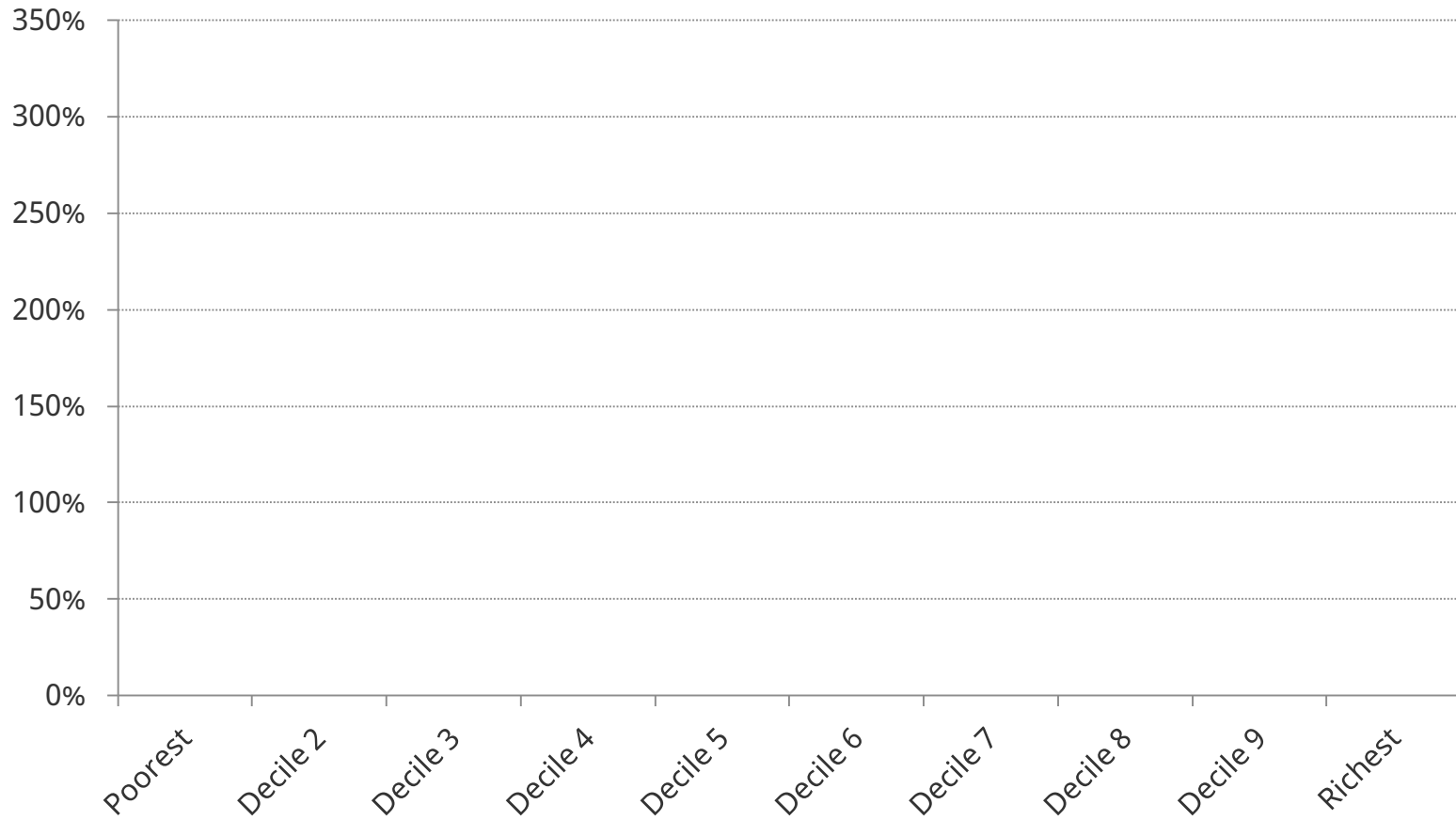
One of the most common justifications for differential tax rates is distributional. For instance, the poor spend a greater proportion of their budget on food and thus this should be taxed more lightly.

Is this a good reason for redistribution via differential commodity tax rates?

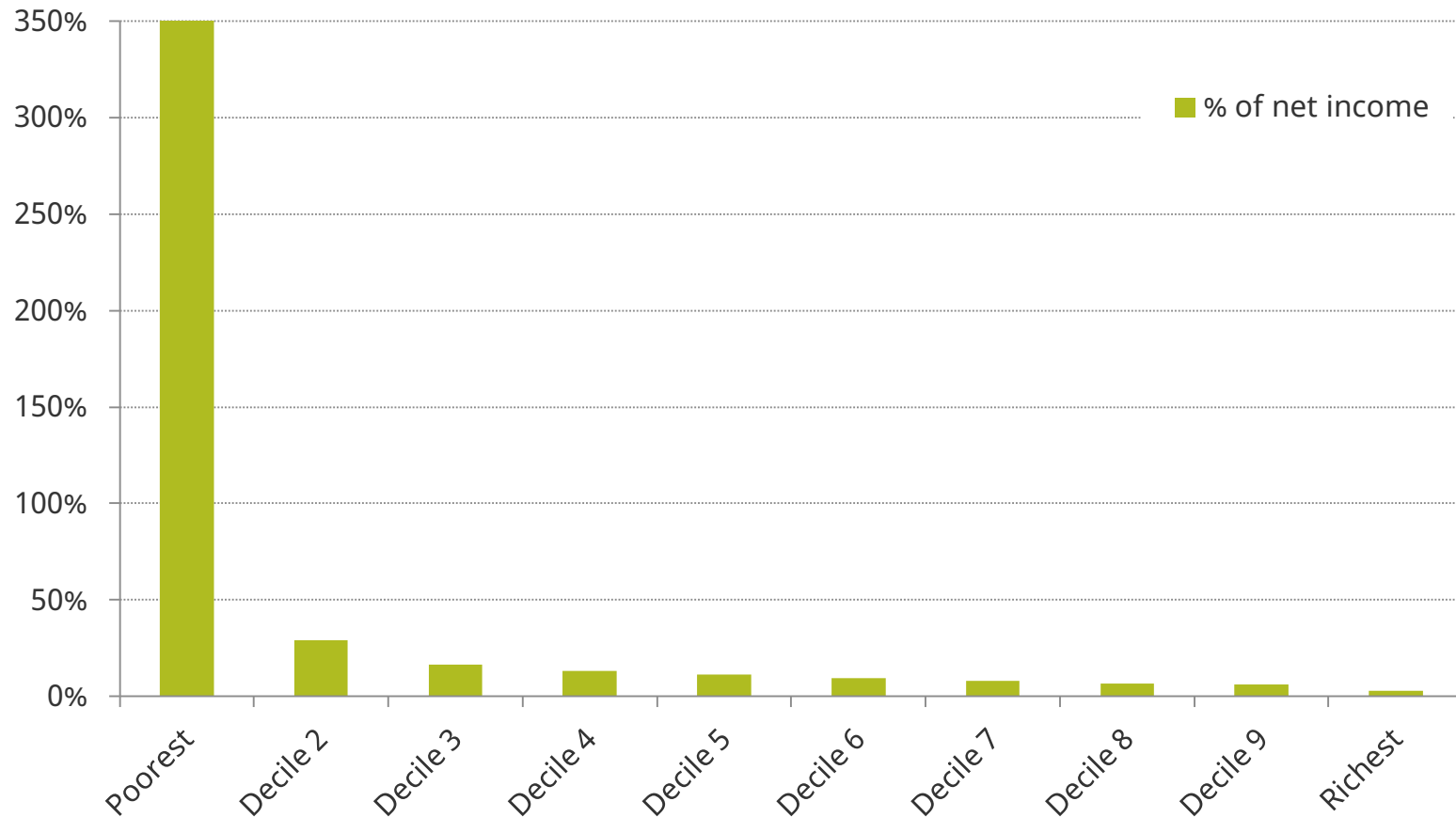
### Perhaps not – for two reasons

1. **Measurement:** the apparent distributional burden depends on how households are ranked and what the taxes are compared to.

# VAT expenditures in Ghana



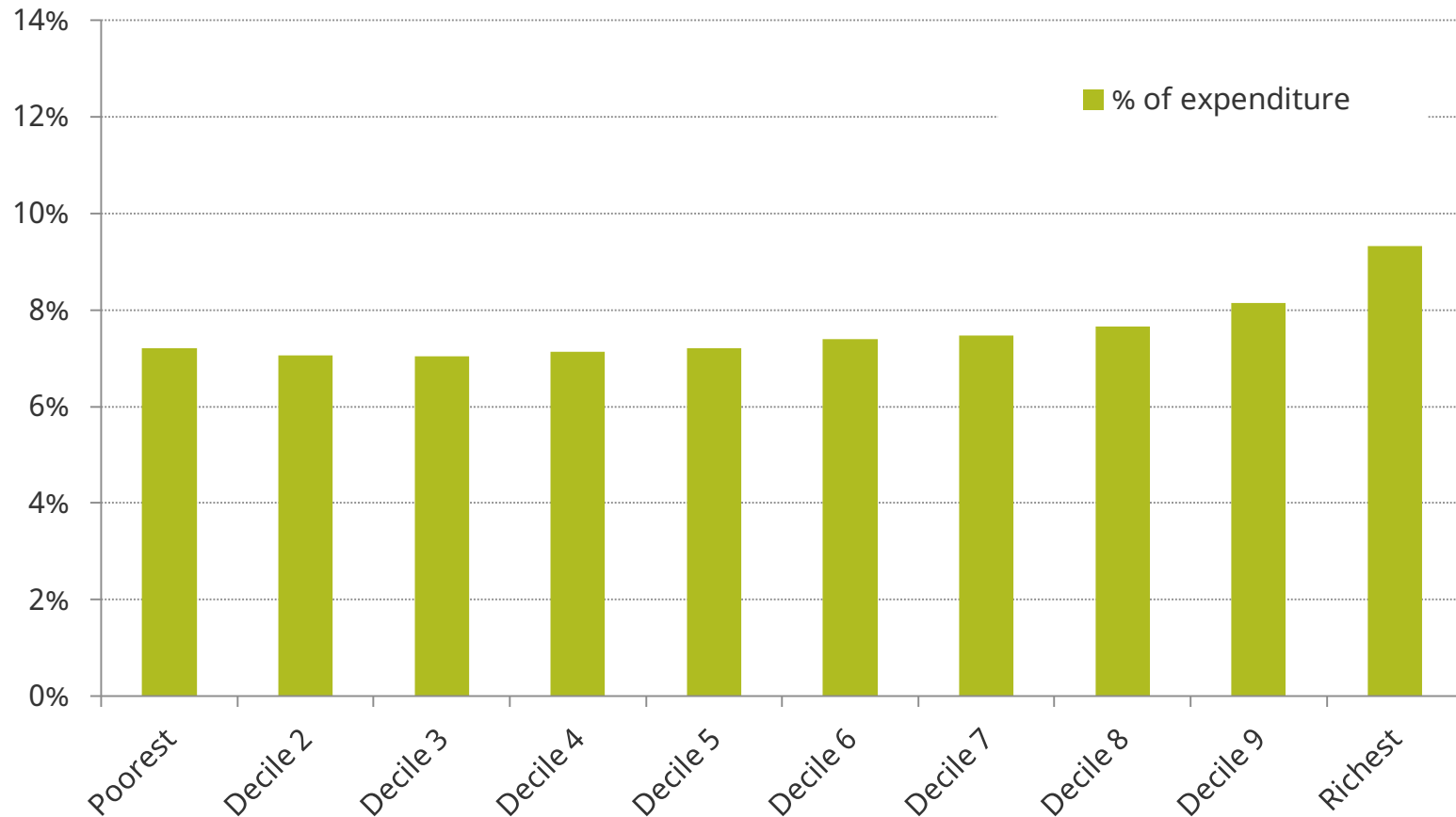
# VAT expenditures in Ghana



Note: Households ranked by net income per capita

Source: Author's calculations using GHATAX

# VAT expenditures in Ghana



Note: Households ranked by monetary expenditure per capita

Source: Author's calculations using GHATAX



# Rate structure of VAT

## Equity arguments I

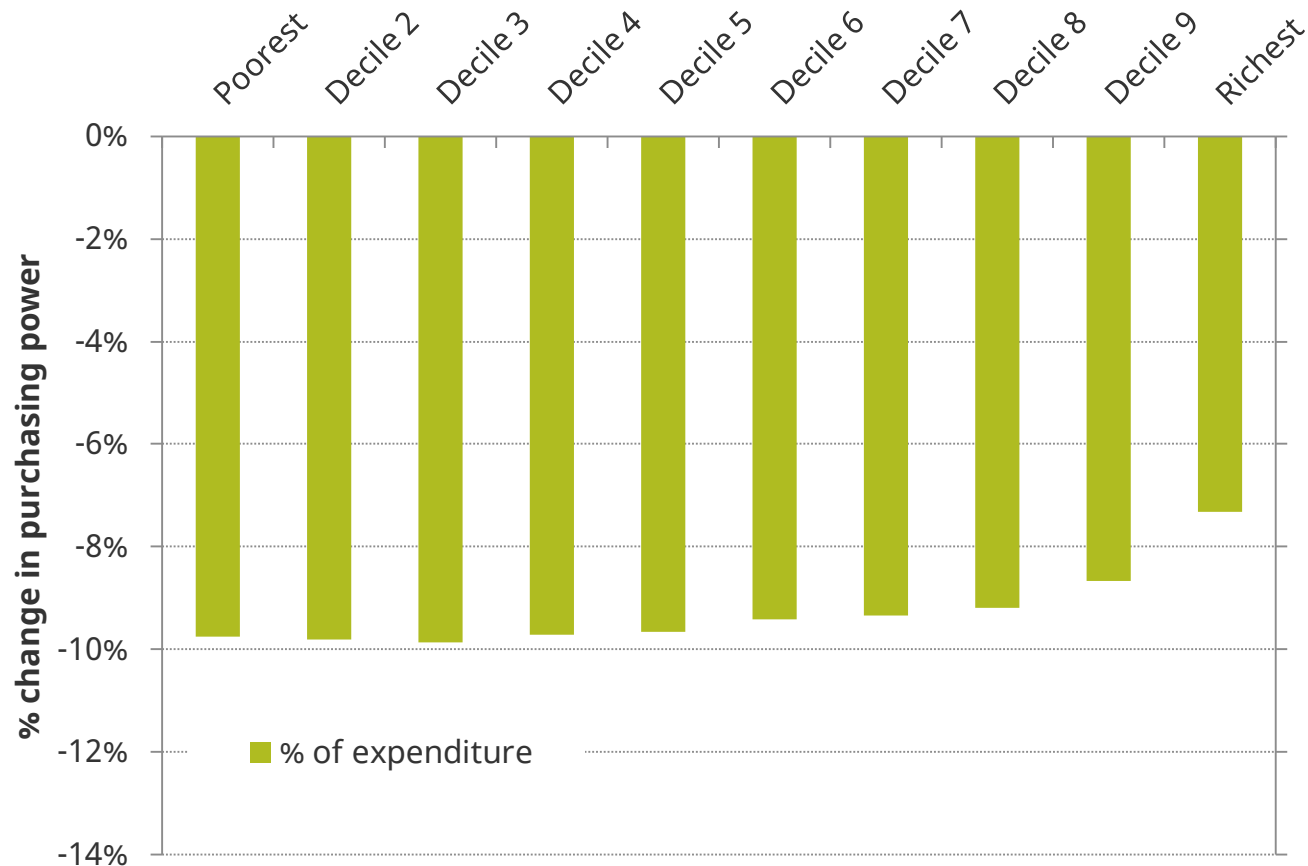
One of the most common justifications for differential commodity tax rates in policy debates is distributional. For instance, the poor spend a greater proportion of their budget on food and thus this should be taxed more lightly.

Is this a good reason for redistribution via differential commodity tax rates?

### Perhaps not – for two reasons

- 1. Measurement:** the apparent distributional burden depends on how households are ranked and what the taxes are compared to.
- 2. Absolute vs relative amounts:** Even if the poor do spend proportionally more on lower-rate commodities, they are unlikely to spend more in absolute terms.

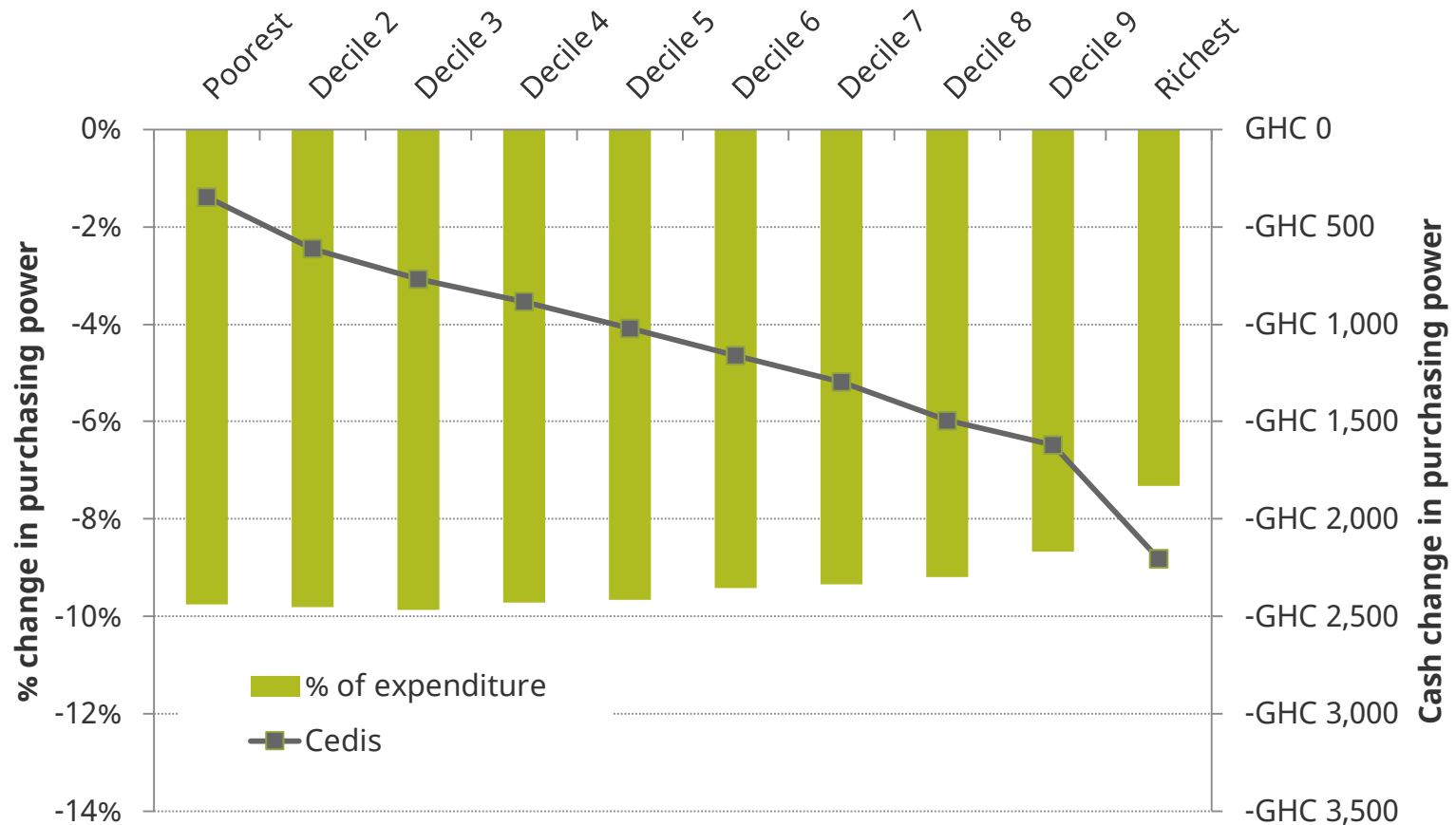
# Removing VAT exemptions in Ghana



Note: Households ranked by monetary expenditure per capita

Source: Author's calculations using GHATAX

# Removing VAT exemptions in Ghana

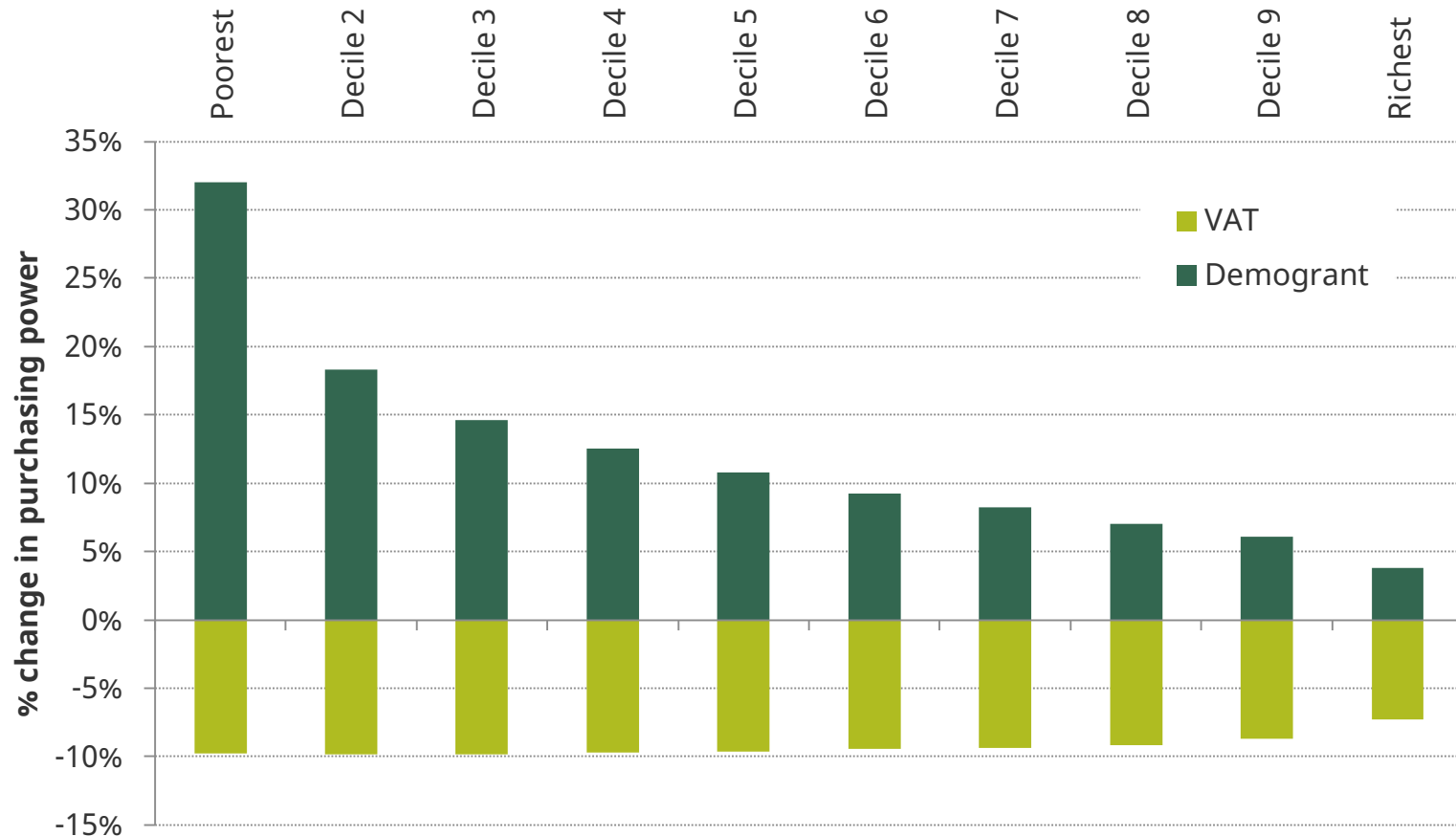


Note: Households ranked by monetary expenditure per capita

Source: Author's calculations using GHATAX

# Removing VAT exemptions in Ghana

## ...and using the revenue to fund a universal cash transfer



Note: Households ranked by monetary expenditure per capita

Source: Author's calculations using GHATAX

# Rate structure of VAT

## Equity arguments I

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Thus, **in countries with sophisticated tax and benefit systems**, indirect tax rates are unlikely to be an effective way to redistribute resources

# Rate structure of VAT

## Equity arguments II

- “Specific egalitarianism” – inequality should be limited in specific domains as an end in itself.
  - “Essentials of life” (e.g. food or fuel) that some individuals will not buy enough of when they are taxed
- Some purchases provide signals of consumer characteristics allowing targeting of specific distributional goals (e.g. wheelchairs)
- Horizontal equity – treating similar people similarly – is also important. Differential rates arbitrarily penalise people with different preferences – a violation of Neutrality.

# Should they be taxed differently?



**VS**



## **3. Rate structure of VAT**

### **b. Efficiency arguments**



# Rate structure of VAT

## Efficiency arguments I

- Taxes distort decisions of agents and this leads to a loss of welfare
- In general, uniformity is desirable insofar as it reduces distortions – Neutrality again

Ramsey (1927) reaches a different conclusion

- Imagine government needs to attain a revenue target using proportional taxes whilst minimising total utility loss
- His result is known as the Inverse Elasticity Rule – charge a higher tax rate on commodities with more inelastic demand
- Intuition is that this distorts choices less and thus minimises deadweight welfare loss

# Should they be taxed differently?



**VS**



# Rate structure of VAT

## Efficiency arguments II

Atkinson & Stiglitz (1976)

- Argue that commodity taxation is superfluous when a non-linear wage tax is available
- A key assumption is that of *weak separability between commodities and work*

However, if a link does exist between consumption choices and work, commodity taxation might be used to offset some of the distortion induced by direct taxes

- Evidence suggests a link exists (Crawford, Keen and Smith, 2008)
- Most food products are found to be leisure complements while alcohol, food eaten out and petrol are substitutes

# Rate structure of VAT

## Efficiency arguments III

In general, there is an efficiency argument for imposing lower taxes on things that are complements to formal market activity

- Commodities complementary with work
- Services that might be produced at home (Kleven et al, 2000)
- Activity that can easily switch to informal sector (Piggott and Whalley, 2001)

This could help offset some of the disincentive to work created by other parts of the tax system

But again, a question of implementation arises – it would be hard to know what to tax differently on these grounds and could make the system complicated

# Should they be taxed differently?



**VS**



# Rate structure of VAT

## Efficiency arguments IV

A uniform rate of commodity taxation is also likely to be conducive to a more simple and stable tax system:

- Reduced compliance costs for businesses who would not need to classify their sales and fill out additional paperwork to comply with different rates
- Lesser workload for the revenue authority in terms of determining what category goods should fall into
- Avoidance of political lobbying invited by differentiated regime

# Summary

Production Efficiency Theorem (plus some benefits related to compliance) is why economists like VAT – business inputs are not taxed

- But some issues of practical implementation remain

The rate structure of VAT is a complex policy question – should the rate be uniform?

- On equity grounds, it depends on the direct tax and benefit system
- On efficiency grounds, there are arguments for differential rates: offsetting distortions from direct tax system or minimising distortion of consumption
- But implementing such optimal taxes would be difficult and in general neutrality is desirable
- Note that where externalities exist, we can look to other tax instruments (System as a Whole)

The overall case probably favours uniformity aside from some particularly compelling cases, such as childcare

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