

# Does the Value-Added Tax Add Value?

## Lessons Using Admin Data from a Diverse Set of Countries

**Anne Brockmeyer (World Bank) (r)**

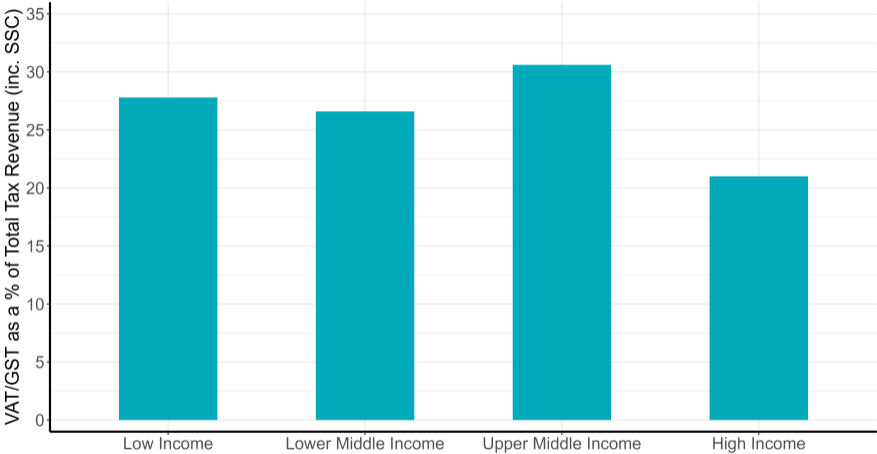
Giulia Mascagni (ICTD & IDS) (r)

Vedanth Nair (IFS & TaxDev) (r)

Mazhar Waseem (Manchester) (r)

Miguel Almunia (CUNEF) (r)

# VAT is a crucial source of tax revenue

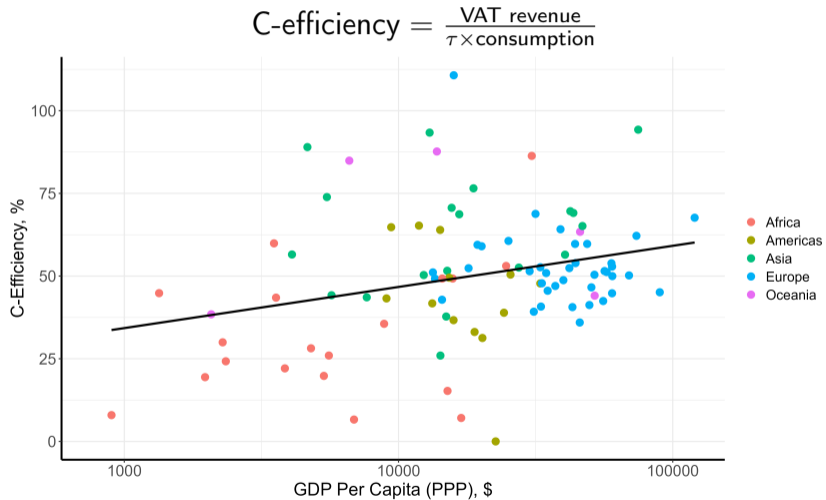


Source: GFS

# VAT is an attractive tax in theory...

- ▶ The VAT is **production efficient**
  - ▶ Does not distort input prices (destination-based)
  - ▶ Tax base is consumption
  
- ▶ The VAT is also considered to be **revenue efficient**
  - ▶ Firms report sales and purchases: cross-check seller and buyer reports
  - ▶ Built-in incentives: seller and buyer have opposing incentives to evade

# ...but the VAT falls short in lower-income countries



# A new analytical approach

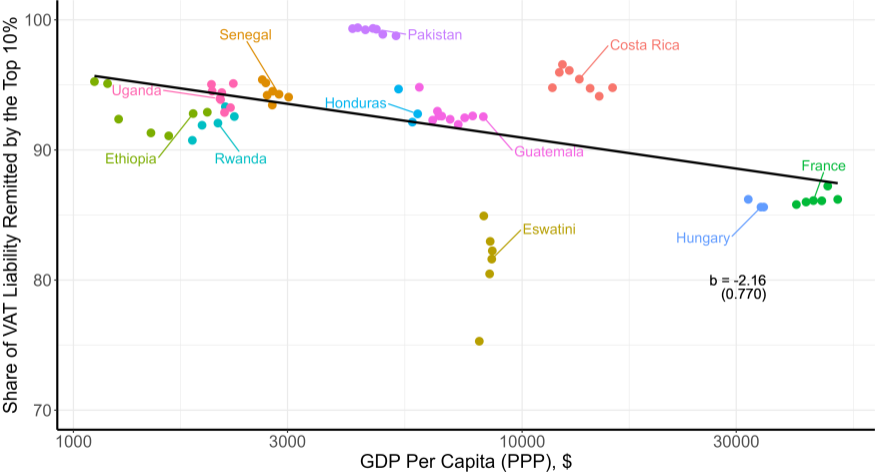
- ▶ **Administrative firm-level VAT return data from 11 countries**
  - ▶ Costa Rica, Eswatini, Ethiopia, France, Guatemala, Honduras, Hungary, Pakistan, Rwanda, Senegal & Uganda
  - ▶ GDP per capita ranging from \$500 to \$45,000
  - ▶ Broader agenda using micro-data for diverse set of countries (Bachas et al 2023 on ETRs; Bachas, Brockmeyer, Garriga & Semelet on firms & Covid)
  
- ▶ **Document four facts** about how real-world VATs function
  - ▶ How practice diverges from theory
  - ▶ Especially in lower-income countries

Fact #1:

VAT Revenue is Highly Concentrated

# VAT revenues are highly concentrated

Share of VAT liability remitted by the top 10%

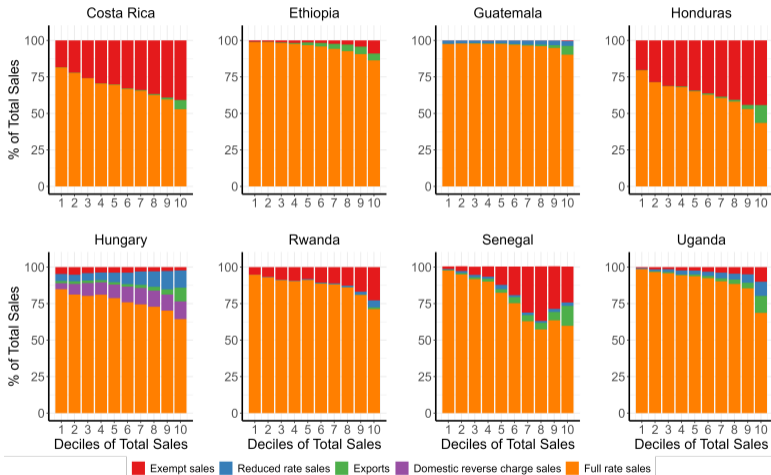


Fact # 2:

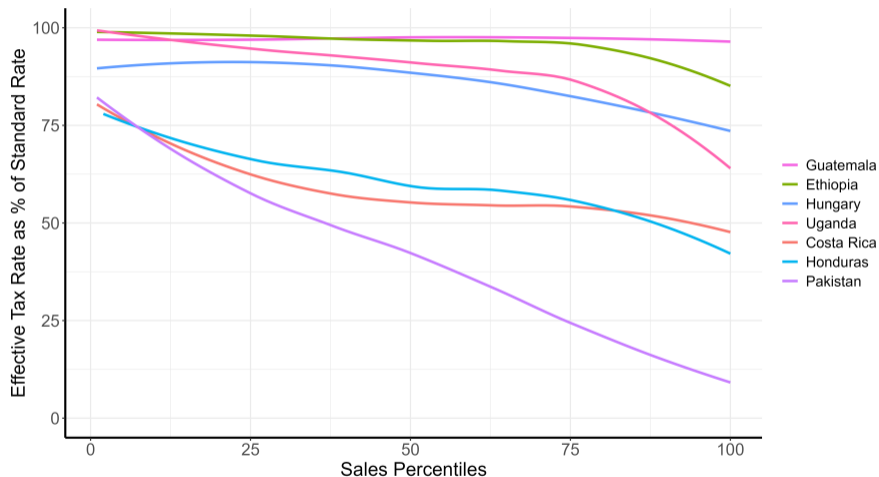
Effective Tax Rates Are Lower for Big Firms



# Large firms have more exempt or reduced-rated sales



# Effective tax rates are smaller for larger firms



▶ Positive and negative value added separately

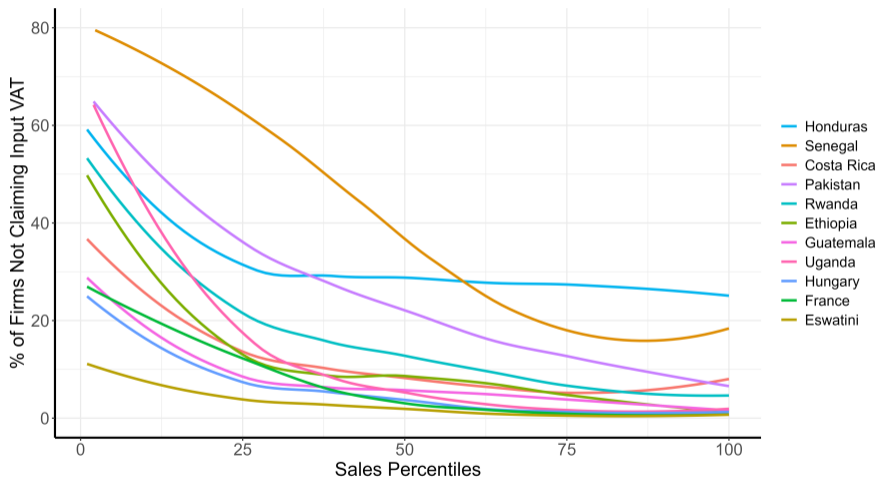
▶ Tax expenditures

▶ ETRs within industries

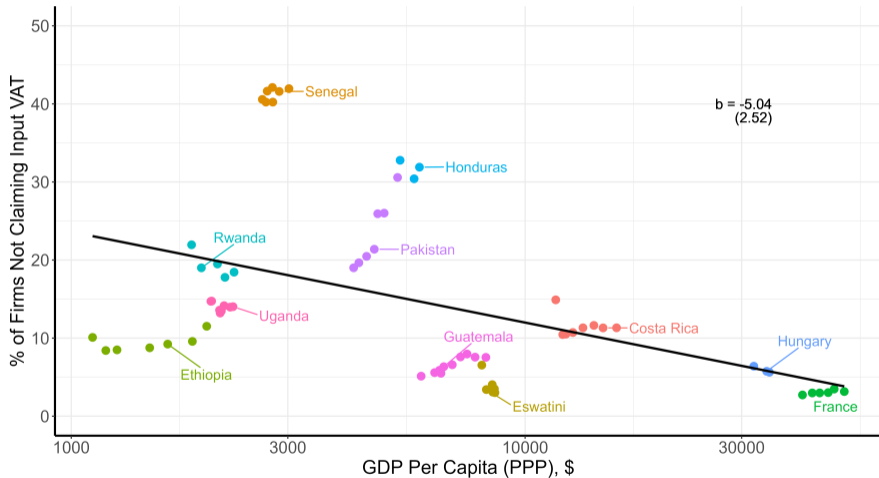
Fact # 3:

Nonclaiming of Input VAT Is Common

# Input VAT nonclaiming is common among small firms



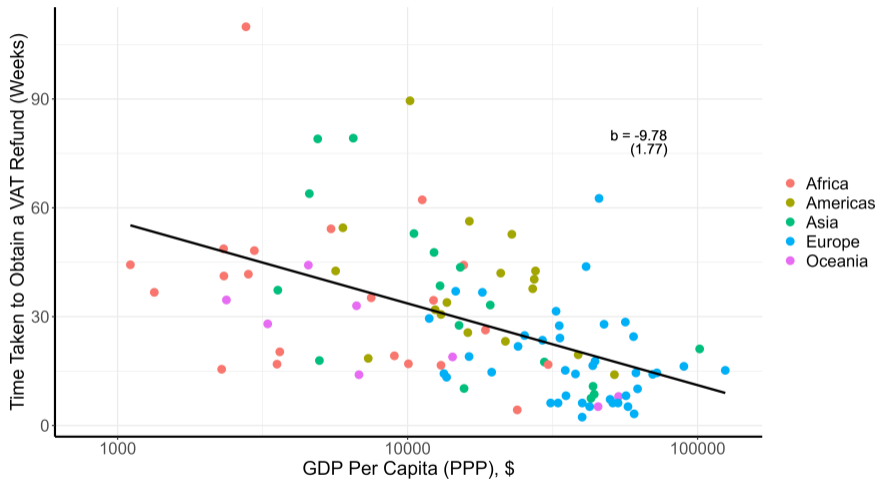
# Input VAT nonclaiming is especially common in LMICs



Fact # 4:

VAT Refunds Are Often Delayed

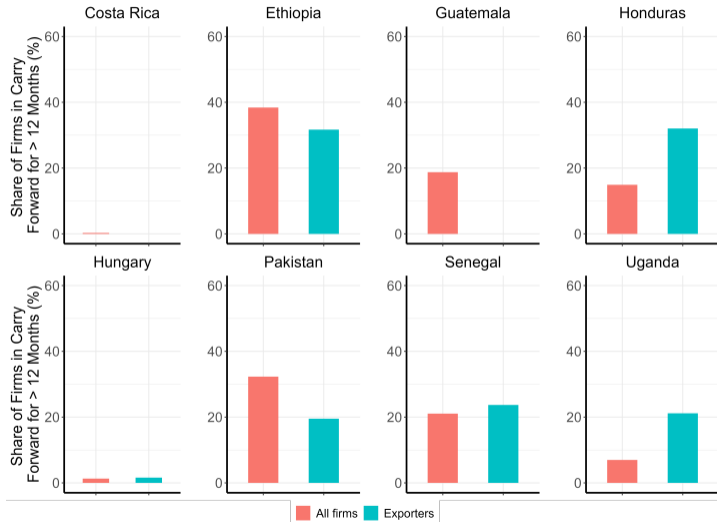
# VAT refunds often take months to obtain



Source: World Bank Doing Business

▶ Time take to comply with refunds

# Exporters are not immune to refund delays





# Alternative Policy Instruments?

# Policy simulations for Pakistan

---

**Actual VAT revenue  
in Pakistan (17% rate)**

---

Rs 1485bn

---

# Policy simulations for Pakistan

---

Actual VAT revenue in Pakistan (17% rate)	Simulated revenue from a RST (17% rate)
--	--

---

Rs 1485bn

Rs 455bn

---

- ▶ A retail sales tax (RST) would raise less than one third of the revenue
  - ▶ Due to lower compliance at final stage (last mile problem) and better compliance upstream (imports, manufacturing)

## Policy simulations for Pakistan

Actual VAT revenue in Pakistan (17% rate)	Simulated revenue from a RST (17% rate)	TOT rate required to get the same VAT revenue
Rs 1485bn	Rs 455bn	6.1%

- ▶ A retail sales tax (RST) would raise less than one third of the revenue
  - ▶ Due to lower compliance at final stage (last mile problem) and better compliance upstream (imports, manufacturing)
- ▶ Counterfactual turnover tax is very high
  - ▶ Due to lower revenue raised from imports
  - ▶ Such a high rate would yield large efficiency costs due to cascading (Keen, 2013) and incentives for vertical integration

# The VAT: flawed but irreplaceable

**Real-world VAT systems differ from the textbook model** in ways that affect the efficiency and equity property of the tax

**But** alternative policy instruments are not viable

- ▶ **Policy implications & avenues for future analysis:**
  - ▶ Limit exemptions and reduced rates + facilitate refund process
  - ▶ Task larger firms and digital intermediaries as withholding agents
  - ▶ Examine puzzling compliance behavior of small firms
  - ▶ Optimize use of data, taking into account spillover & GE effects in networks

What's next?

# **DATA**TAX

A lab to study taxes, firms and jobs

# Appendix

# Data

- ▶ Firm-level VAT declarations for 11 countries: Costa Rica, Eswatini, Ethiopia, France, Guatemala, Honduras, Hungary, Pakistan, Rwanda, Senegal & Uganda
  - ▶ Covering four continents, 500+ million people
- ▶ Net VAT = Output VAT – Input VAT is our measure of tax liability
- ▶ Common variables: firm's monthly sales, exports, exempt sales, output VAT, input VAT, other credits (incl. credits carried forward), sector
- ▶ Aggregate data to the yearly level, unless otherwise specified
- ▶ For some countries, we have transaction-level data on B2B sales



## Summary of findings: Four Facts

- ① **Revenue** is highly concentrated
  - ▶ Most VAT revenue is remitted by a few large firms
- ② Effective tax **rates** vary widely
  - ▶ Lower for larger firms
  - ▶ More heterogeneous for smaller firms
- ③ Many firms **do no claim** input VAT
  - ▶ Puzzling. Particularly common among small firms
- ④ **Refunds** are often delayed
  - ▶ Exporters are not immune to such delays

Despite all, the VAT outperforms a retail sales tax and a turnover tax in simulations

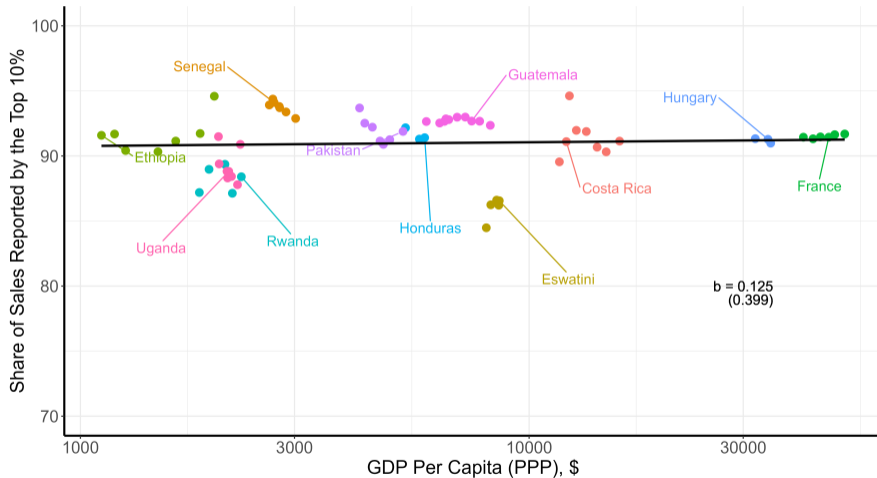
## Previous Literature & Contributions

- ▶ Overviews of VAT implementation in low and middle-income countries using **aggregate data**
  - ▶ Ebrill et al. (2001), Bird & Gendron (2007), Keen & Lockwood (2010), Keen (2013), Slemrod and Velayudhan (2022)
  - ▶ **This paper**: documents new patterns using **micro-data** from tax returns
- ▶ Empirical studies on various VAT issues:
  - ▶ Keen & Mintz (2004), De Paula & Scheinkman (2010), Pomeranz (2015), Naritomi (2019), Waseem (2020, 2022), Liu et al. (2021), Gadenne et al. (2022), Brockmeyer & Hernandez (2022)
  - ▶ **This paper**: provides a **cross-country perspective** and relates stylized facts to the level of development

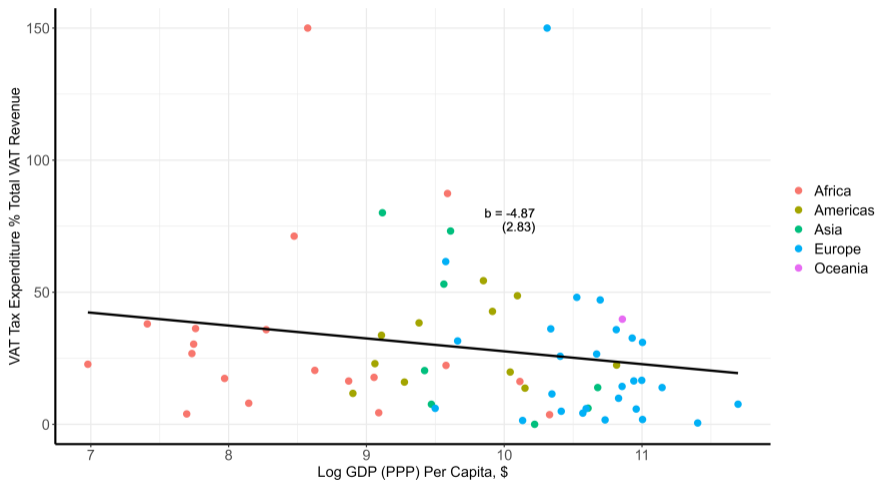


# Revenue concentration

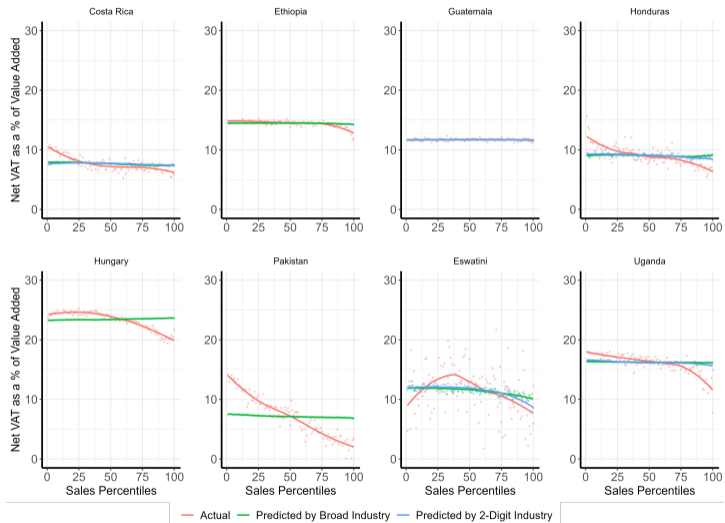
Share of total sales reported by the top 10%



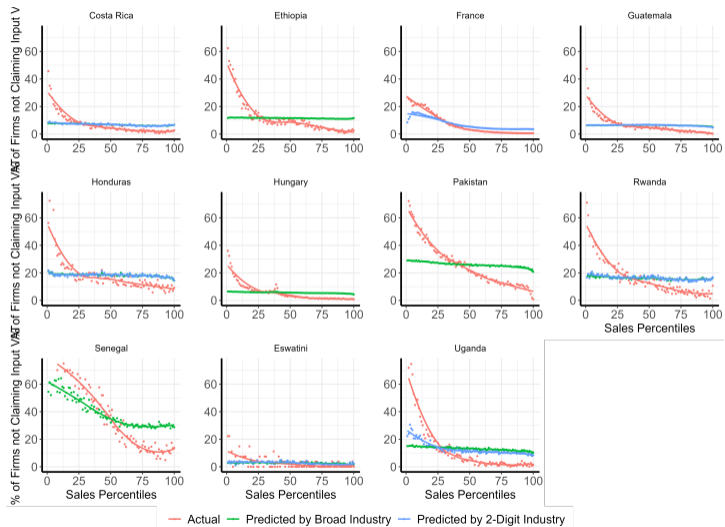
# Tax expenditure % GDP



# Effective tax rates within industries

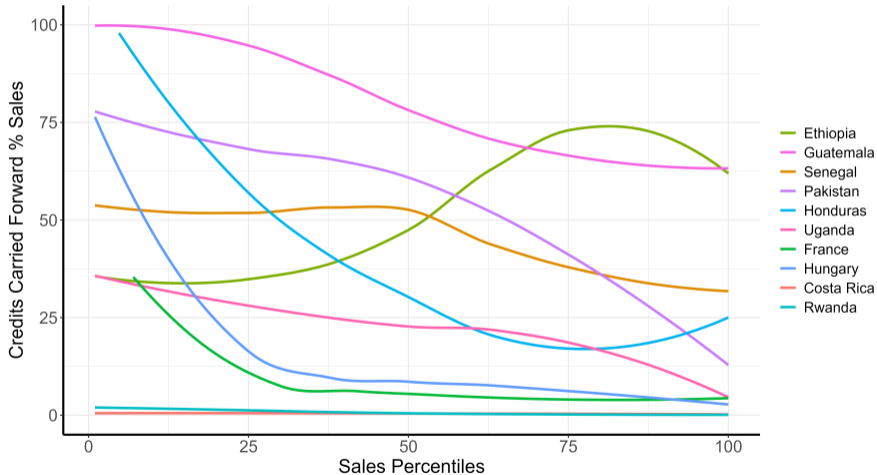


# Input non-claiming within industries



# Credits Carried Forward as Share of Sales

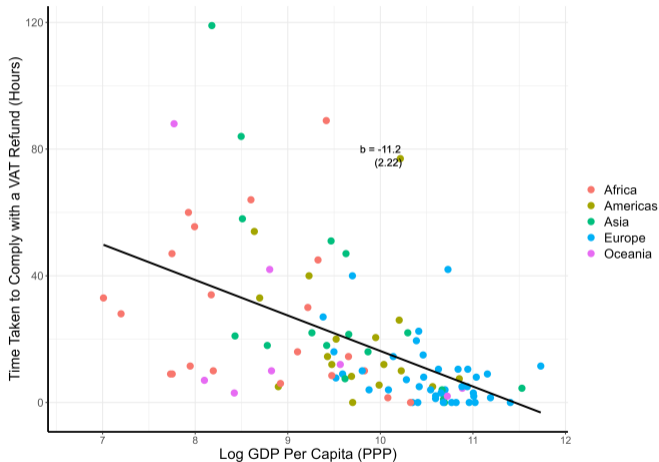
By Firm Size





# Refunds

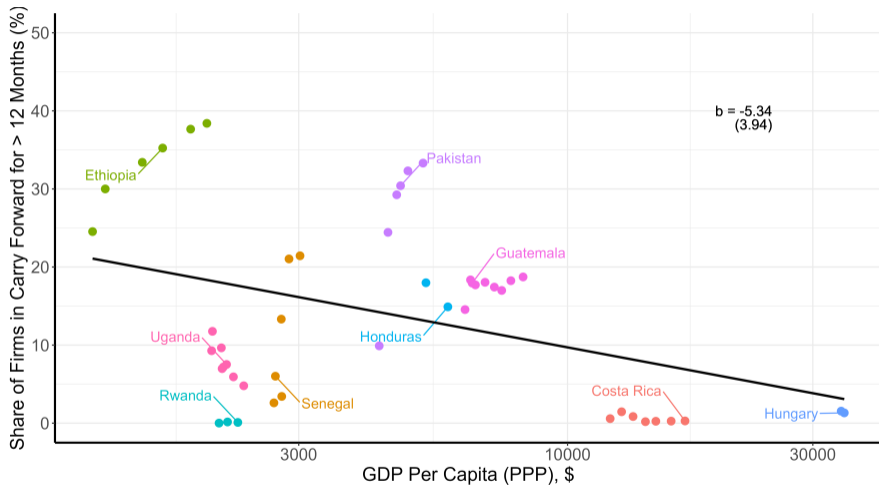
Time taken (hours) to comply with a VAT refund



Source: World Bank Doing Business

▶ Back

# Firms carry forward credits for many months, even years



# Why a retail sales tax isn't a viable alternative

Median manufacturing net VAT % retail net VAT

