Estimating profit shifting in South Africa using firm-level tax returns

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Aim of this research

- **To estimate the profit shifting** ***responses*** to tax incentives in South Africa **and benchmark this effect** against previous findings in other countries
- **To** ***indicate*** **the overall size of the issue** of profit shifting in South Africa **and the relevance of different profit shifting channels**

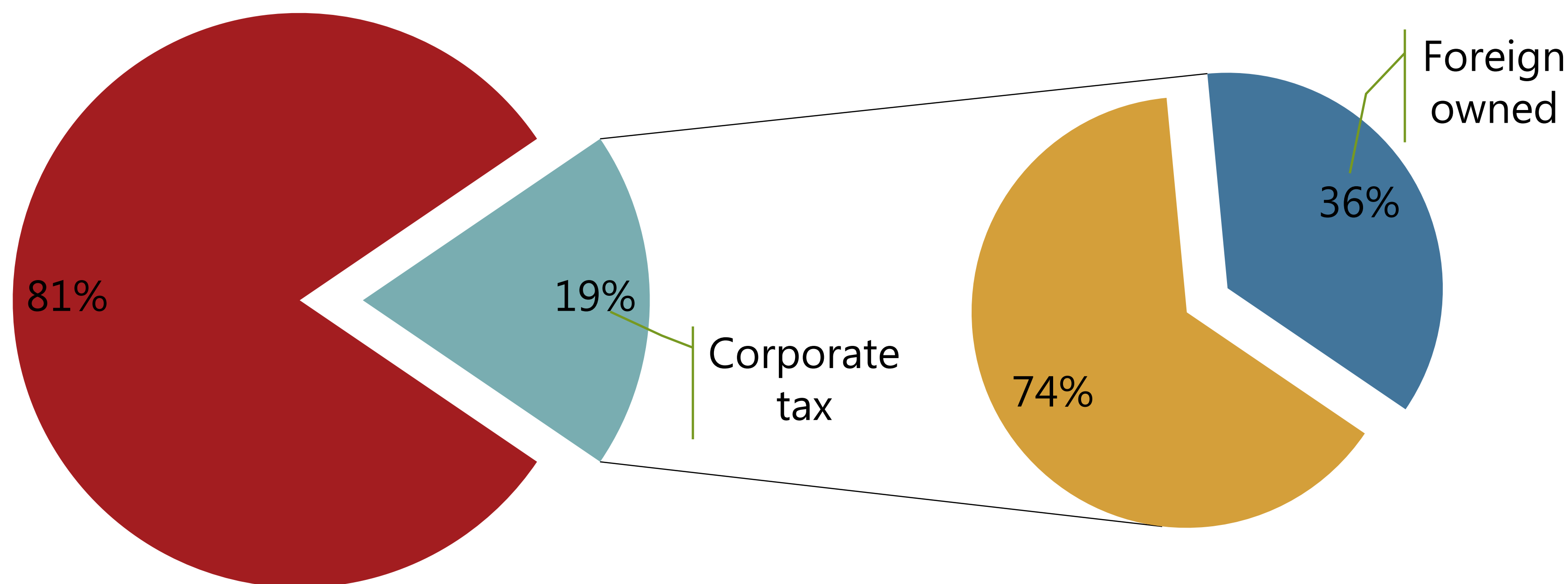
First: What is profit shifting?

- To move taxable profits without moving the corresponding activity in an effort to save taxes
- Example:
  - Corporate tax rate in South Africa is 28%
  - Corporate tax rate in the Cayman Islands is 0%
  - **A multinational enterprise saves 28 cents per dollar of taxable income shifted from South Africa to Cayman Islands**

Profit shifting in developing countries – perceptions more common than facts

- A wealth of studies estimating (and finding) profit shifting in developed countries
- International organizations argue that developing countries lack the institutional capacity to curb profit shifting (OECD 2014)
- However, most studies investigating profit shifting in developing countries rely on alternative (less reliable) methods – as data has previously not been available
- We are able to replicate state-of-the-art estimates of profit shifting and benchmark profit shifting responses in South Africa

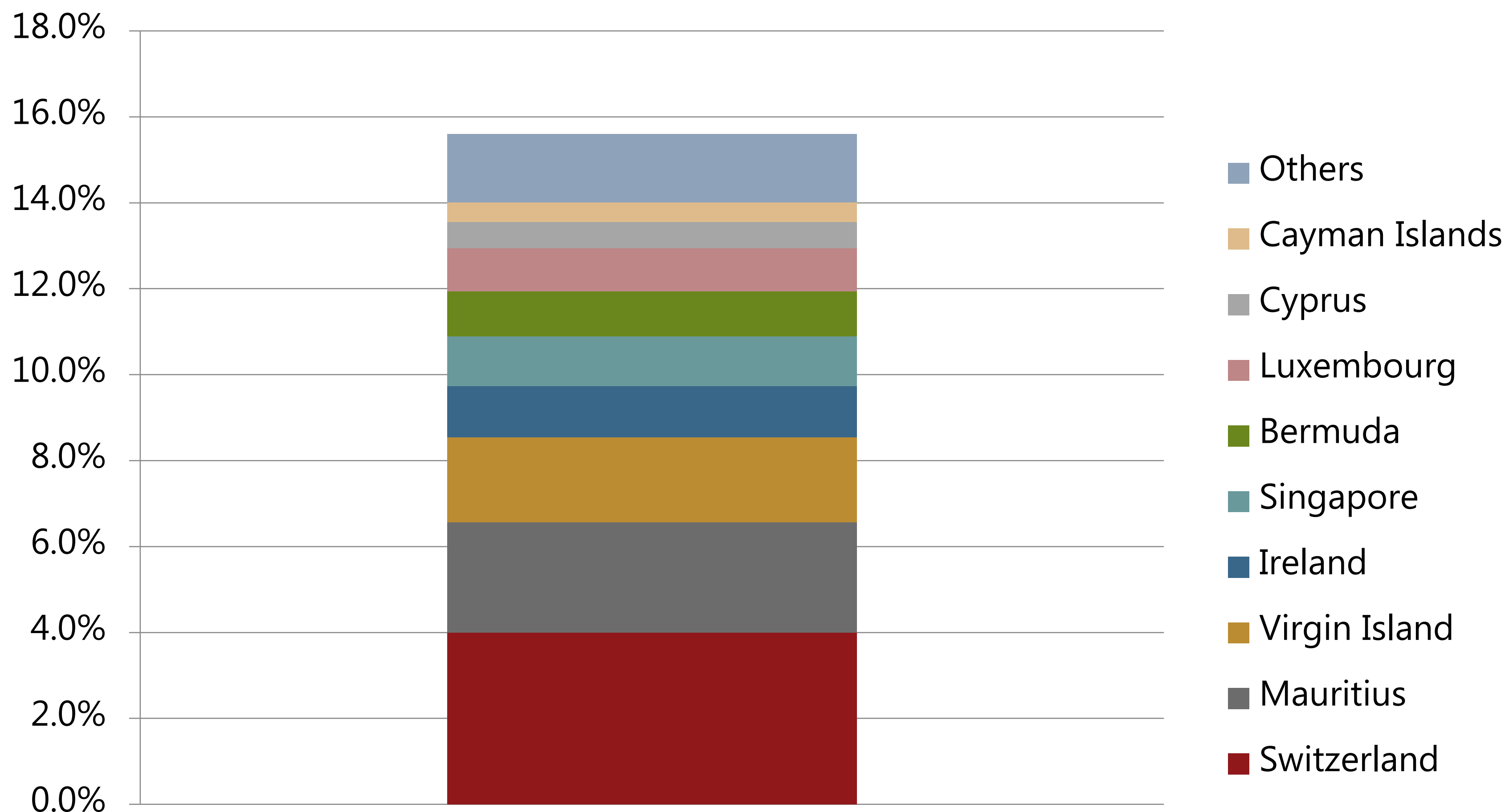
An important question to study



*For the year 2014

Source: SARS and Author calculations

Share of subsidiaries with parent in tax haven

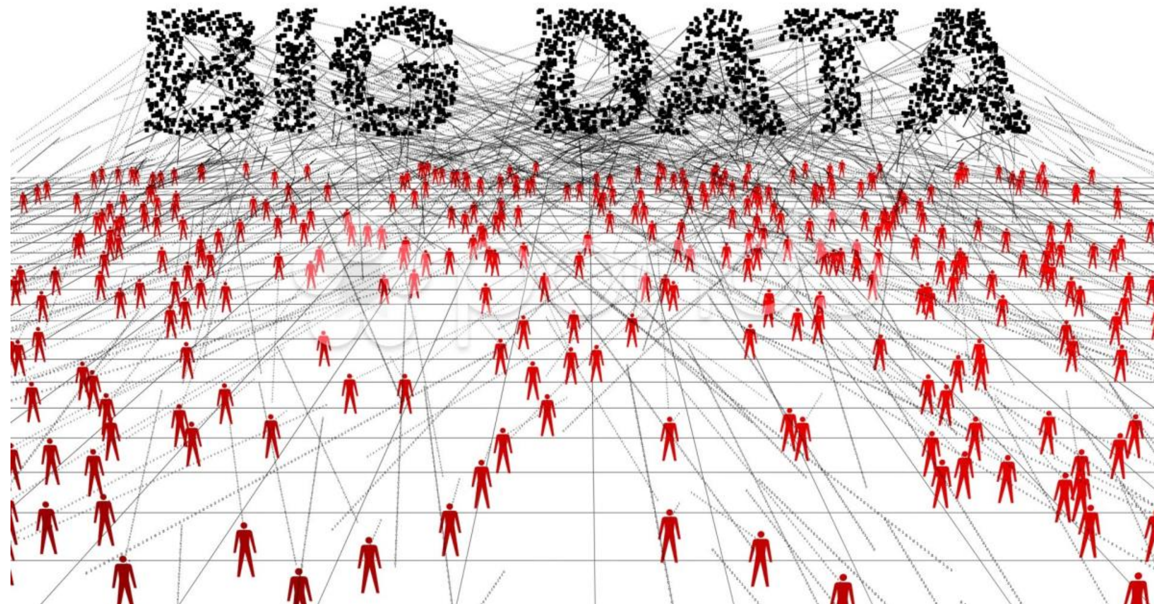


*For the tax year 2014

Source: SARS and Author calculations

We estimate profit shifting using “big data”

- Using the universe of firms tax returns and customs transactions we can look for patterns consistent with profit shifting behaviour
- This in turn allows us to estimate the size of profit shifting



We apply three different approaches to identify profit shifting

1. **Indirect evidence:**
   - **Detecting patterns in profitability**
2. Semi-direct evidence:
   - Detecting patterns in asset and liability locations
3. **Direct evidence (separate paper):**
   - **Detecting patterns in the transfer pricing of goods**

1) Indirect evidence: Patterns in profitability

- Imagine that we have two identical subsidiaries located in South Africa; that is, they are located within the same industry, have the same number of employees, same assets, etc..
- However, one subsidiary is owned by a parent in Mauritius (where the CIT rate is 15%) and one subsidiary is owned by a parent in Germany (where the CIT rate is 30%)
- If the subsidiary with the Mauritian parent report lower profits than the German owned subsidiary, this indicates profit shifting

Top down method cont.

- **We thus empirically ask the question**: After controlling for number of employees, assets and industry, **does a lower parent tax rate imply a lower profitability in South African subsidiaries?**
- $Specification$:

$$\log(\,taxable\ profits_i) = \alpha + \beta_1 \log(capital_i) + \beta_2 \log(labor_i) + \beta_3 Parent\ tax\ rate + \gamma X_i + \varepsilon_i$$

- *Pros: Widely used method – allows for benchmarking*
- *Cons: No "smoking gun"*

Results: Top down approach

- Absent profit shifting incentives – multinational subsidiaries in SA are more profitable than domestic firms
- However:
  - a 10 pct. pt. tax differential to the parent implies that the South African subsidiary reports 17 percent less profits
  - If the parent firm is resident in a tax haven, the subsidiary reports 30 percent less profits
- **This profit shifting response is roughly twice as large as the one measured in developed countries**

Transfer price manipulation by multinational enterprises in South Africa

Preliminary results

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Profit shifting via transfer mispricing of goods

- Multinational firms engage in two types of transactions:
  - Internal: i.e. between affiliates (with itself)
  - External: i.e. transactions with unrelated companies
- When trading internally:
  - Multinational firms have an incentive to raise the price on goods flowing from a low tax country to South Africa
- When trading externally:
  - Multinational subsidiaries will want to purchase the good as cheaply as possible (unaffected by the corporate tax rate in the partner country)

Transfer mispricing example (fictional)

- Bolts Incorporated imports bolts from itself (internally) and externally from Metal inc.

Wants to import at high price

Bolts Inc. Cayman Isl.
(0% Corp. Tax)

Wants to import at low price

Metal Inc. Cayman Isl.
(unaffilated)

$\frac{p_i}{p_e}$ =high

Wants to import at low price

Bolts Inc. France.
(33.33% Corp. Tax)

Bolts Inc. South Africa
(28% Corp. Tax)

$\frac{p_i}{p_e} = 0$

Wants to import at low price

Bolts Inc. France.
(unaffiliated)

Looking for transfer mispricing in the customs data

- Data on individual goods import transactions allows for a very convincing test of transfer mispricing
- Data includes information on
  - Product type (HS8-code)
  - Customs value and quantity
    - Possible to impute unit price
  - Firm id and firm charachteristics
  - Partner country
  - Related vs. Unrelated transaction

Transfer mispricing at first glance

$\frac{p_i}{p_e}$ = **Internal import price relative to external import price**	
Imported from high tax country	Imported from low tax country
104%	176%

- Suggestive of transfer mispricing
- However, we are literally comparing oranges and apples and bolts and books etc.

Exploiting the many dimensions of the customs data

- We can essentially compare:
- The same firm importing the same product from the same country the same year
- In these cases, how does the price differ when the trade is external vs. internal?
  - Preliminary answer: price is roughly 10 percent higher when import is internal and from a low tax country

Thank you!

Questions?

Arms-length-pricing: An attempt to stop transfer mispricing

- To curb transfer mispricing, the law states that MNEs should price their internal trades according to an "arms-length-principle"
- That is, a multinational enterprise should e.g. price an internal trade from one affiliate to another "as if" they were trading with an unrelated party.
  - A South African business would obviously not want to be paying extra for an import from Cayman Islands compared to France, all other things equal
- **Question: Is it working?**