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

Total taxes

Corporate taxes

*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:**

\[
\log(\text{taxable profits}_i) = \alpha + \beta_1 \log(\text{capital}_i) + \beta_2 \log(\text{labor}_i) + \beta_3 \text{Parent tax rate} + \gamma X_i + \varepsilon_i
\]

• **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)

\[
\frac{p_i}{p_e} = \text{high}
\]

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

**Wants to import at low price**

Metal Inc. Cayman Isl. (unaffiliated)

\[
\frac{p_i}{p_e} = 0
\]

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

**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 characteristics
  - Partner country
  - Related vs. Unrelated transaction
Transfer mispricing at first glance

\[ \frac{p_i}{p_e} = \text{Internal import price relative to external import price} \]

<table>
<thead>
<tr>
<th>Imported from high tax country</th>
<th>Imported from low tax country</th>
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<tbody>
<tr>
<td>104%</td>
<td>176%</td>
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</table>

• 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?**