**Universität Zürich**[UZH]

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E S S E N

# Can Tax Uncertainty be Reduced Using Advance Pricing Agreements?

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EEA, Milano – August 24th 2022

## Motivation

- OECD BEPS programme has increased tax uncertainty among firms

- Promotion of APAs as uncertainty-resolving tool by OECD, see e.g. OECD (2017)

- Are APAs used for resolving uncertainty in practice? Do they yield the intended effect?

# Advance Pricing Agreements
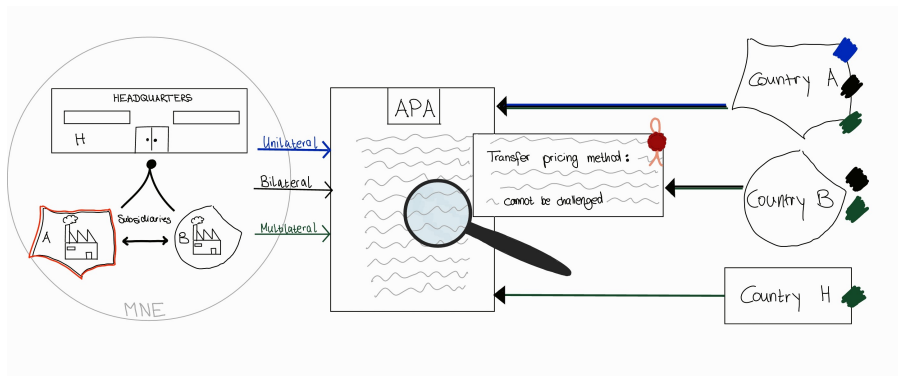
## Our Research

1. How are APAs designed?
☞ Collect data on APA legislation

2. Are APAs used in practice?
☞ Collect data on APAs concluded

3. What are the effects of APAs on firm profits?
☞ E.g. Becker et al. (2017): Resolving hold-up problem $\rightarrow$ profits $\uparrow$
or
E.g. Lohse and Riedel (2013): Payment for tax certainty $\rightarrow$ profits $\downarrow$
☞ Proxy APA-usage by country's APA legislation
$\Rightarrow$ Regress on firm data

# Our Results

1. Worldwide adoption of APA programmes

2. Steep increase in APA conclusion since 2010s

3. - Statistically significant positive effect on firm profits
   - Larger effects for multilateral APAs, large, intangible-intensive firms located in low-income countries

# Contribution

- Add to the (small, but growing) literature of advance tax rulings
- So far: Few descriptive analyses where only few countries, years, and APA characteristics were covered, see e.g. Rathke and Rezende (2016)
    - ☞ Comprehensive dataset with longitudinal, worldwide data on legislation status plus details of APAs and statistics

- Test theoretical predictions with data
- So far: Only subanalysis by Lohse and Riedel (2013)
    - ☞ Worldwide analysis, including heterogeneity of effects across APA, country, and firm types

# APA Legislation

# Data on APA Legislation

- Collected from publicly accessible Transfer Pricing Guides published by renowned tax advisory firms
    - Transfer Pricing Guide, Transfer Pricing Global Survey (EY)
    - Global Transfer Pricing Country Guide, Strategy Matrix for Global Transfer Pricing (Deloitte)
    - International Transfer Pricing (PwC)
    - Others, e.g. TPA, IBFD, PKF, OECD, and national government reports)

- Coverage
    - 146 countries
    - 1987-2020

- Provide information on
    - Date of introduction of formal APA programme
    - Availability of uni-, bi-, and multilateral APAs
    - Availability of rollback, renewal, SME-specific programme
    - Filing fee, min and max period of validity, eligibility threshold

# Descriptives on APA Legislation: Worldwide
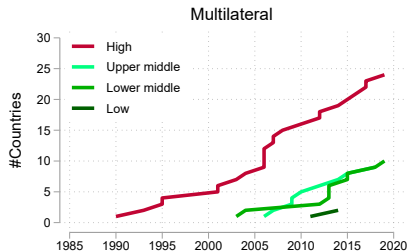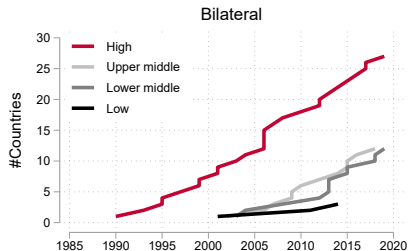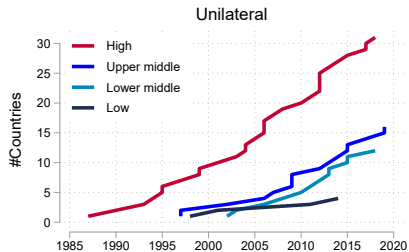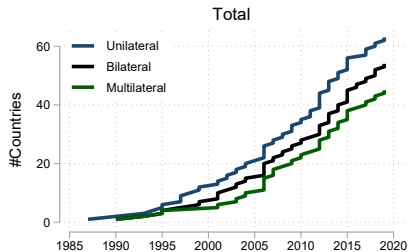
# APA Statistics

# Data on APA Statistics

- Collected from publicly accessible APA reports published by
  - European Joint Transfer Pricing Forum
  - Internal Revenue Service (USA)
  - Central Board of Taxes (IND)
  - State Tax Administration (CHN)

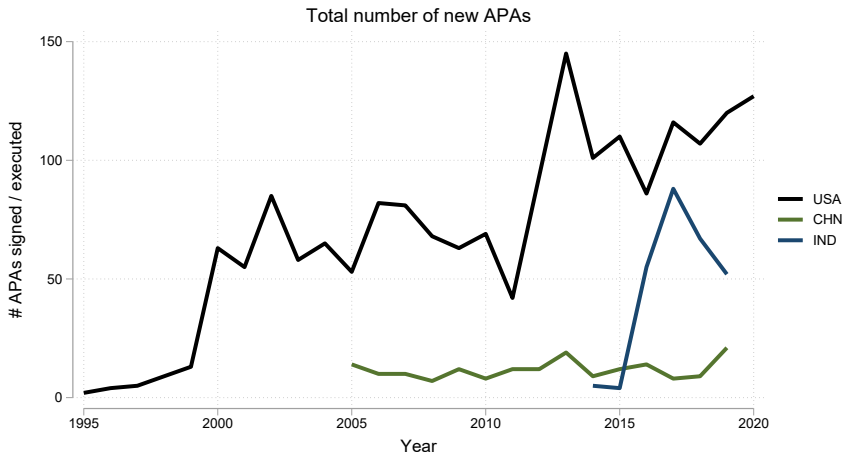- Coverage
  - 32 countries
  - 1995-2020

- Provide information on ...
  - # APAs negotiated, concluded, rejected, revised, ...
  - Distribution across industries, types of APAs and transactions, ...

# Descriptives on APA Conclusion: Europe
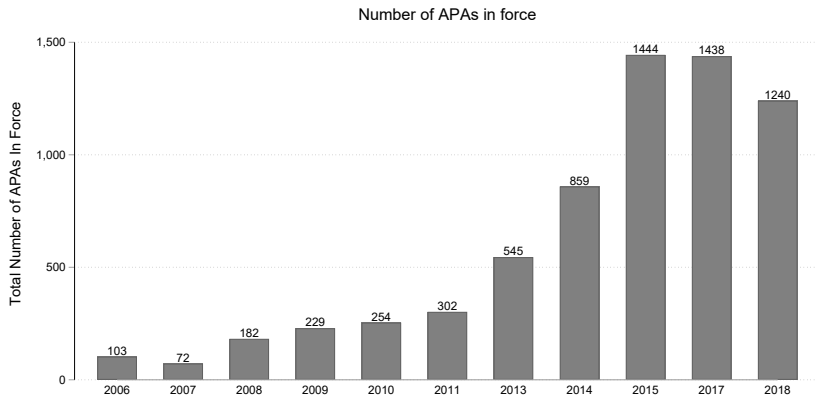


*Source:* Based on data from the EU Joint Transfer Pricing Forum.

# Descriptives on APA Conclusion: CHN, IND, USA



Total number of new APAs

*Source:* Based on data from national tax authorities.

# Regression Analysis

## Estimation Strategy

$$ln(EBIT_{ict}) = \beta_1 + \beta_2 APA_{ct} + \beta_3 X'_{ict} + \mu_i + \nu_t + \epsilon_{ict} \quad (1)$$

Dep. var.: $EBIT_{it}$ gives earnings before interest and taxes for firm $i$ in year $t$

Regressor: $\beta_2$ - $APA_{it}$ is a dummy equal to 1 if firm $i$ is located in country c that has an APA programme in year $t$

Controls: Rich set of firm- and country-level controls including production factors, development and governance indicators

Fixed effects: Firm-level $\mu_i$ and year-specific $\nu_t$

# Baseline

Table: Baseline Results

| Model | All (1) | All (2) | Unilateral (3) | Bi- and Multilateral (4) | Multilateral (5) |
|---|---|---|---|---|---|
| APA Law | 0.0187*** (0.0047) | 0.0919*** (0.0079) | | | |
| Unilateral | | | 0.0554*** (0.0106) | | |
| Bi- and Multilateral | | | | 0.0752*** (0.0071) | |
| Multilateral | | | | | 0.0883*** (0.0072) |
| Observations | 1,521,350 | 1,471,654 | 1,455,631 | 1,441,279 | 1,293,934 |
| $R^2$ (adjusted) | 0.492 | 0.821 | 0.821 | 0.821 | 0.821 |
| Firm FE | No | Yes | Yes | Yes | Yes |
| Industry-Year FE | No | Yes | Yes | Yes | Yes |
| Homecountry-Year FE | No | Yes | Yes | Yes | Yes |

*Notes:* Table 1 shows estimated coefficients of APA legislation in the host country on Earnings Before Interest and Taxes. Standard errors are clustered on the firm level. All firms included. ***,**,* indicate significance at the 1%, 5%, 10% levels. Fixed assets are in 1,000 USD, GDP is displayed in 10,000,000,000 USD, GDP per Capita is measured in 1,000,000 USD, GDP Growth and Unemployment are displayed in %.

# Heterogeneity

Table: Heterogeneity

| Model | Low Income (1) | Intangibles (2) | Large Firms (3) |
|---|---|---|---|
| APA Law | 0.0594*** | 0.0805*** | 0.0124 |
| | (0.0095) | (0.0089) | (0.0098) |
| APA × Low Income | 0.0734*** | | |
| | (0.0174) | | |
| APA × Intangibles | | 0.0319** | |
| | | (0.0160) | |
| APA × Large Firm | | | 0.1805*** |
| | | | (0.0134) |
| Observations | 1,245,347 | 1,245,347 | 1,245,347 |
| $R^2$ (adjusted) | 0.822 | 0.822 | 0.822 |
| Country Controls | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes |
| Industry-Year FE | Yes | Yes | Yes |
| Homecountry FE | Yes | Yes | Yes |

*Notes:* Table 2 shows estimated coefficients of APA legislation on EBIT. Standard errors are clustered on the firm level. All firms included. Categorisation into high-, middle- and low-income countries is based on World Bank classification from 2016. The low income dummy equals 1 if a country is categorised as "low", "lower middle", or "upper middle" income country by the World Bank in 2016. The intangibles indicator is equal to 1 if firms have more intangibles than the $75^{th}$ percentile of 2016. Large Firm is equal to 1 if the firm has a level of fixed assets above the sample median in 2016. Fixed assets are in 1,000 USD. ***,**,* indicate significance at the 1%, 5%, 10% levels.

# Sensitivity

- Alternative outcome: ☞ PLBT
- Alternative treatment variable: ☞ Use first APA
- Alternative clustering
- Alternative channel: ☞ Home VS Host country influence

⇒ The qualitative results are robust to these variations.

# Discussion

# Outlook

Next Steps:

- Expand dataset
    - ☞ Complete data on APA characteristics for the entire period
    - ☞ Incorporate new APA statistics
- Refine empirical analysis
    - ☞ Estimate effect from legislative details
    - ☞ Improve proxy by using data from APA statistics
- Investigate interaction with profit shifting
- Apply new DiD methods

# Conclusion

- Increasing importance of APAs

- Clear evidence for positive effects from APAs

- Quantitative effects differ across APA, firm, and country types

# Thank you for your attention!