The Global Minimum Tax

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May 2022

Introduction

Ambitious international tax reform passed in October 2021 including a Global Minimum Tax of 15%

Goals: Fix the global corporate tax system by
- curbing profit shifting to tax havens
- stop race-to-the-bottom in corporate tax rates

Key mechanism: Top-up taxes in the home country of multinational firms:
- Google's profits in Bermuda are taxed at 1%
- the U.S. imposes a 14% top-up tax on those profits

Early literature

What is the welfare effects of the global minimum tax in non-havens such as United States, Germany and Sweden?

Early papers: Revenue gain equals profits in havens times top-up tax rate

- $50 billion for the European Union (Barake et al., 2021)

Analytical limitations:

- holds constant profit shifting behavior
- holds constant national tax policies

This paper

What is the welfare effects of the global minimum tax in non-havens such as United States, Germany and Sweden?

Method: Theoretical model of international tax competition with heterogeneous countries

- firms are optimizing
- global equilibrium in national policies

Main result: Global minimum tax does not necessarily improve welfare - notably if the rate is low

Key mechanism

Without a Global Minimum Tax: Tax havens compete for profits and set $t = 0$

With a Global Minimum Tax: Top-up taxes create floor under effective taxation and tax havens set $t = t_{GMT}$

Higher equilibrium tax rates in havens affect welfare in non-havens through two channels:

- Mechanical drop in firms' after-tax profits and in shareholders' consumption (welfare $\downarrow$)
- Firms shift less profits: No effect on firms' after-tax profits but increase in government revenue in non-havens (welfare $\uparrow$)

Some numbers

What is the welfare effect of introducing a global minimum tax at a rate of 1%? - assume

- profit shifting to havens of \$600 billion annually (Tørsløv et al., 2018)
- corporate tax rate of 20% in non-havens

Mechanical drop in shareholders' consumption: \$6 billion

How large should the reduction in profit shifting be for the reform to improve welfare?

- if $W'_C \approx 0$: even tiny profit shifting response ensures $\Delta W > 0$
- if $W'_C \approx W'_G$: reduction of \$30 billion required for $\Delta W > 0$

Background

Background

BEPS process $\rightarrow$ More than 100 countries agree on action plan to combat profit shifting in 2013

Concerns that BEPS package is insufficient $\rightarrow$ many countries unilaterally adopt non-standard taxes on digital industry

Agreement on two-pillar reform in October 2021

- **Pillar I**: Give some taxing rights to "market countries"
- **Pillar II**: Global Minimum Tax enforced through top-up taxes

More detail on Pillar II

More than 100 countries (including the U.S.) will introduce the Global Minimum Tax at the rate of 15% as from 2023

Main enforcement device: Top-up taxes in home countries
- if a firm's profits in country j is taxed at $t<15\%$
- the firm's home country imposes top-up taxes
- total tax rate on profits from all sources at minimum 15%

Top-up taxes computed based on Country-by-Country reporting introduced in 2018

Other features:
- scope: only large firms (revenue $>$ \$750 million)
- carve-out rules: "discount" for real production factors
- denied deductions in other countries can replace top-up taxes in home

Model

Model overview

World economy has N countries: some are **havens** and others are **non-havens**.

Three types of agents

- **Firms**: Real operations in non-havens that are *fixed* but can shift profits to havens
- **Households**: Own firms and consume their net profits
- **Governments**: Tax profits and provide a public good

Equilibrium Without Global Minimum Tax

Firm behavior

Let t_L denote the lowest tax rate in the world

The firm based in country i reports profits in this way:

(a) In each country j where $t_j > t_L$, the firm **under-reports** up the point where

$$s'(\triangle_{ij}^*) = t_j - t_L \tag{1}$$

(b) In each country j where $t_j = t_L$, the firm **over-reports**:

$$\frac{\sum_j \triangle_{ij}^*}{H} \tag{2}$$

Government policies (havens)

Nash equilibrium where all havens set $t = 0$

- havens have no local firms and only get revenue from taxing shifted profits
- all shifted profits are booked where the tax rate is lowest
- Bertrand-style tax competition leading to zero rates

Government policies (non-havens)

Non-havens take profit shifting opportunities for given and set policies that satisfy

$$\frac{W'_G}{W'_C} = \frac{\Omega}{1+\epsilon}$$

where
- W'_G is the marginal social value of the public good
- W'_C is the marginal social value of dividend payouts
- ϵ is the tax elasticity of reported profits
- Ω is share of local profits accruing to local firm

Two policy externalitities: **profit shifting** ($\epsilon < 0$) and **tax exporting** ($\Omega < 1$)

Equilibrium
With
Global Minimum Tax

Firm behavior

Profit reporting is guided by the same equations *except* that $\max(t_M, t_L)$ is the relevant tax measure from firms' perspective rather than t_L.

(a) Firms **under-report** in each country with $t_j > t_M$

(b) Firms **over-report** in each country with $t_j \leq t_M$

Government policies (havens)

Nash equilibrium where all havens set $t = t_M$

- havens with $t < t_M$ no more attractive for firms than havens with $t = t_M$
- no incentive for havens to set $t < t_M$

Key insight: Global Minimum Tax induces one-to-one increase in equilibrium tax rates in havens

Welfare

Welfare analysis

Key question: Does the Global Minimum Tax make non-havens better off?

- What is the welfare effect of a marginal increase in the rate Global Minimum Tax rate? ("small reform")

- What is the welfare effect of introducing the Global Minimum Tax at a high rate? ("large reform")

Simplifying assumption: $\Omega = 1$

- no tax exporting
- profit shifting is only externality

Small reform

Consider small increase in global minimum rate:

$$\frac{dW}{dt_M} = W_C' \underbrace{\left(- \triangle_{ii}^{*} \right)}_{\partial C / \partial t_M} + W_G' \underbrace{\left(\frac{d\pi_{ii}}{dt_M} t_i \right)}_{\partial G / \partial t_M}$$

Two effects on welfare with opposite signs:

(i) Higher tax on shifted profits reduces consumption

profit shifting response has no effect on consumption (envelope theorem)

(ii) Reduced profit shifting increases public good

national policy response has no effect on welfare (envelope theorem)

Large reform

If Global Minimum Tax is introduced at a rate that is sufficiently high, profit shifting ends: $\triangle_{ii} = 0$ and $\epsilon = 0$.

This implies that non-havens are at the first-best:

$$\frac{W'_G}{W'_C} = 1$$

Unambiguous welfare gain through two channels:
- zero leakage to havens
- no distortion of policy choice

Concluding remarks

Limitations

The model makes many simplifying assumptions:

- real capital completely immobile

- havens are perfect substitutes

- no non-fiscal value of attracting profits

- no carve-out rules and out-of-scope firms

Any model feature that creates spill-overs between non-havens (mobile real capital, tax exporting etc) complicates the welfare analysis

Summary

Simple model of international tax competition to study the welfare effects of the Global Minimum Tax in non-havens

At a low rate, the welfare effects are ambiguous:

- Higher taxation in havens lowers private consumption (welfare $\downarrow$)
- Less profit shifting raises government revenue (welfare $\uparrow$)

At a sufficiently high rate, the welfare effect is unambiguously positive