The race to the bottom is accelerating

Global corporate tax rates (%)

- United states
- Africa
- World
- Latin America
- OECD
- EU
- Asia

Year:
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
APPLICATION: Executive Compensation and the Agency Problem

Many recent compensation packages seem wildly out of proportion to the executives’ actual value.

• In 2012, Amgen CEO Kevin Sharer earned $21.1 million, plus a jet and other perks, while shareholders lost 3%.

• In 2008, the Abercrombie and Fitch CEO received $71.8 million in compensation, including $6 million retention bonus. In 2007, A&F’s stock dropped more than 70%.

• In 2011, Hewlett-Packard’s CEO was fired after a disastrous term, but got a $13 million firing benefit.
24.1 APPLICATION: Executive Compensation and the Agency Problem

How can poor executives receive such high compensation?

- Owners cannot fully track manager’s compensation, so managers compensate themselves well.
- Owners try to control executives through the use of a board of directors.
  - **Board of directors**: A set of individuals who meet periodically to review decisions made by a firm’s management and report back to the broader set of owners on management’s performance.
24.1 APPLICATION: Executive Compensation and the Agency Problem

• The issue of executive compensation came to a head in 2008–2009.

• Thousands of traders and bankers received huge bonuses as the financial crisis battered shareholders.

• Following public outrage, Congress voted to limit compensation of firms accepting bailout funds.

• But compensation remains uncapped at the vast majority of financial and other firms in the United States.
24.1 Firm Financing

Firm wants to finance an investment

Firm raises money by

Issuing bonds (debt finance)
Bondholders receive interest dividends

Issuing shares of stock (equity finance)
Shareholders receive dividends
Shareholders receive capital gains

Firm uses funds from retained earnings
24.2 Corporate Tax Rate

![Marginal tax rate graph](image)
The Consequences of the Corporate Tax for Investment: Theory

Cost and return per dollar of investment per period, in dollars

Marginal cost:

\[ MC = \delta + \rho, \text{ return required per period} \]

\[ MC_2 = (\delta + \rho) \times (1 - [\tau \times Z] - \alpha) \]

Marginal benefit:

\[ MB_2 = MP_K \times (1 - \tau) \]

\[ MB_1 = MP_K, \text{ actual return per period} \]
APPLICATION: The Impact of the 1981 and 1986 Tax Reforms on Investment Incentives

TRA 1981 created new incentives to spur investment by corporate America.

- Depreciation schedules were made much more rapid and an investment tax credit was introduced.
- ETR on equipment averaged −18.2%.
- Contributing to the low effective tax rates in the early 1980s were active tax avoidance and/or evasion strategies by corporations.
APPLICATION: The Impact of the 1981 and 1986 Tax Reforms on Investment Incentives

• The Tax Reform Act of 1986 made three significant changes to the corporate tax code:
  o Lowered the top corporate tax rate from 46% to 34%.
  o Slowed depreciation schedules significantly and ended the ITC.
  o Significantly strengthened the corporate version of the Alternative Minimum Tax (AMT).

• Corporate use of legal loopholes in the tax codes rebounded in the late 1990s and continues today.
24.5 The Consequences of the Corporate Tax for Financing

**Taxation as Earnings Pass Through Firm**
- Firm earns $1
- Firm pays income to bondholders $1
- Firm pays tax on income and distributes after-tax income to stockholders $1(1 – \(\tau_c\))

**Taxation as Earnings Are Distributed to Individual Investors**
- Bondholders pay income tax on interest received $1(1 – \(\tau_{int}\))
- Stockholders pay income tax on dividends $1(1 – \(\tau_c\))(1 – \(\tau_{div}\))
- Stockholders pay income tax on capital gains after they sell stock $1(1 – \(\tau_c\))(1 – \(\tau_{cg}\))
### Why Not All Debt?

<table>
<thead>
<tr>
<th></th>
<th>Share of Financing</th>
<th>Possible Gain</th>
<th>Possible Loss</th>
<th>Expected Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity holders</td>
<td>$1m</td>
<td>$3m</td>
<td>$2m</td>
<td>$0.5m</td>
</tr>
<tr>
<td>Debt holders</td>
<td>$5m</td>
<td>0</td>
<td>$10m</td>
<td>−$5m</td>
</tr>
<tr>
<td>Equity holders</td>
<td>$5m</td>
<td>$3m</td>
<td>$10m</td>
<td>−$3.5m</td>
</tr>
<tr>
<td>Debt holders</td>
<td>$1m</td>
<td>0</td>
<td>$2m</td>
<td>−$1m</td>
</tr>
</tbody>
</table>

- Bankruptcy creates an agency problem between debt and equity holders.
- High debt-equity ratios exacerbate this problem.
24.5 APPLICATION: The 2003 Dividend Tax Cut

• The 2003 tax reform reduced the dividend and capital gains rates to 15%, making dividends more attractive.

• Proponents hoped the cut would stimulate the economy, and end double taxing of corporate income.

• Opponents argued that the tax cut would worsen the fiscal balance and make the tax burden less progressive.

• Research shows that the 2003 reform increased dividend payments, but whether this tax cut actually raised investment remains unanswered.
Figure 1

Total Regular and Special Dividends (Updated to 2006Q2)

Source: Chetty and Saez (2005), using data through 2006Q2.
Figure 2
Regular Dividend Initiation in Top 3807 (Constant Sample Size) Firms

Source: Chetty and Saez (2005)
Figure 3

Dividend Payers in Top 3807 Firms

Source: Chetty and Saez (2005)
Figure 4
Effect of Tax Cut on Initiations: Breakdown by Executive Ownership

Source: Chetty and Saez (2005)
Figure 6

Effect of Tax Cut on Initiations: Breakdown by Institutional Ownership

Source: Chetty and Saez (2005)
FIGURE 2  
Effects of the 2003 Dividend Tax Cut  

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment per dollar of lagged capital</th>
<th>Net Investment</th>
<th>Employee Compensation</th>
<th>Total Payouts to Shareholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>$.32</td>
<td>$.20</td>
<td>$.14</td>
<td>200% ($0.063)</td>
</tr>
<tr>
<td>2008</td>
<td>$.28</td>
<td>$.050</td>
<td>$.17</td>
<td>150% ($0.056)</td>
</tr>
<tr>
<td>2009</td>
<td>$.24</td>
<td>$.025</td>
<td>$.16</td>
<td>100% ($0.031)</td>
</tr>
<tr>
<td>2010</td>
<td>$.20</td>
<td>$.000</td>
<td>$.15</td>
<td></td>
</tr>
</tbody>
</table>

Notes: These figures plot the time series of annual mean outcomes for C-corporations and S-corporations in the main analysis sample net of a rich set of controls. Investment equals the cost of all newly purchased tangible capital assets. Net investment equals the annual dollar change in tangible capital assets. Employee compensation equals the sum of all non-officer wages, salaries, benefits, and pension contributions. Total payouts to shareholders equals dividends plus share buybacks (non-negative annual changes in treasury stock). Each graph is constructed by scaling each observation by either the firm’s tangible capital assets or revenue averaged over the two preceding lags; winsorizing (top-coding) observations at the 95th percentile; regressing this scaled outcome variable within every year on a C-corporation indicator, two-digit NAICS industry fixed effects, and quartics in age, lagged revenue, lagged profit margin, and revenue growth; and requiring that the vertical distance between the two lines equals the regression coefficient on the C-corporation indicator and that the weighted average of the lines equals the sample average in that year. The regressions are dollar-weighted (each observation is weighted by its lagged revenue) and flexibly control for any time-varying industry or firm-size shocks by non-parametrically reweighting the S-corporation sample within every year to match the distribution of C-corporations across 190 industry-firm-size bins as detailed in Section III.E. The payouts graph is included as a test for an immediate behavioral response in financial outcomes and differs from the other graphs in two ways that account for income-tax-induced differences in baseline payout levels and for slightly differential pre-trends as detailed in Section V.A.
APPLICATION: A Tax Holiday for Foreign Profits

• The American Jobs Creation Act of 2004 cut the tax rate on repatriated profits from 35% to 5.25% for one year.
• Repatriated profits had to be spent on job creation.
• Critics worried about the difficulty in controlling how companies would spend the money.
• Others were skeptical of the bill’s ostensible intention of stimulating the economy.
• No evidence that it stimulated the economy, and it cost the government at least $3.3 billion.
in the United States. Google US had an incentive to charge less than the then-current market value of its technologies, but we do not know if it was able to do so or if the arm’s length rules were strictly enforced—the purchase price is not public information. In any case, since Google’s market value increased enormously after its 2003 initial public offering, it is apparent that Google US was able—whether intentionally or not—to “sell” its intangibles to its offshore subsidiary for what, in retrospect, was a low price.

The Irish/Bermuda hybrid then created another Irish subsidiary, “Ireland Limited,” and granted it a license to use Google’s technologies. In turn, this subsidiary puts Google’s intangible capital to use by licensing it to all Google affiliates in Europe, the Middle East, and Africa. (A similar strategy, with Singapore in lieu of Ireland, is used for Asia.) Google France, for instance, pays royalties to “Ireland Limited” in order to have the right to use the firm’s technologies. At this stage, the bulk of Google’s non-US profits end up being taxable in Ireland only, where the corporate tax rate is 12.5 percent.

The next step involves stripping the profits out of Ireland and making them appear to have occurred in Bermuda, where the corporate tax rate is zero percent. This is done by having “Ireland Limited” make a royalty payment to “Google Holdings.” There are two potential obstacles here. Ireland, first, withholds a tax on royalty payments to Bermuda; to avoid this tax, a detour by the Netherlands is necessary.
drawing on national accounts and balance of payments statistics. One advantage of these data is that they do not suffer from the double-counting issues pervasive in US multinational firm operations data (as discussed in Bureau of Economic Analysis 2013; Hines 2010a). In the balance of payments data, profits that pass through chains of entities in Bermuda, Ireland, and the Netherlands—like in the “double Irish Dutch sandwich” arrangement—are consolidated and counted only once, in such a way that $1 of foreign profit recorded in the balance of payments directly contributes to US national income.

Consider then the basic macroeconomic aggregates of the US economy in 2013. National income (that is, GDP minus capital depreciation plus net income received from abroad) is equal to $14.5 trillion. Of this, US corporate profits (net of capital depreciation and interest payments) account for 14.5 percent, or $2.1 trillion. “US corporate profits” should be understood as the profits of US-owned firms: they include $1.7 trillion of domestic profits, plus $650 billion of profits made by foreign firms owned by US residents, minus $250 billion made by domestic firms owned by foreigners. So 31 percent (650/2,100) of US corporate profits were made abroad in 2013. Where do the $650 billion of foreign profits come from? The balance of payments provides a country-by-country decomposition of this total, indicating that 55 percent are made in six tax havens: the Netherlands, Bermuda, Luxembourg, Ireland, Singapore, and Switzerland (Figure 2). The use of tax havens has steadily increased since the 1980s and continues to rise. Moreover, the trend toward more
widespread use of tax havens by US-owned corporations shows no particular sign of slowing down.

As tax havens rose as a share of foreign profits (to 55 percent today) and foreign profits rose as a share of total US corporate profits (to about one-third), the share of tax havens in total US corporate profits reached 18 percent (that is, 55 percent of one-third) in 2013. That is a tenfold increase since the 1980s, as shown by Figure 3. The high level of tax-haven profits is all the more remarkable given that many US-owned companies have no overseas activity at all. (The rapid increase during the financial crisis is due to the relative strength of offshore profits at a time when domestic profits collapsed.)

Considerable care is needed when interpreting balance of payments statistics. These data do not reveal the real source of profits, but mainly the location of the holding companies involved in tax planning. Imagine that a US firm has an affiliate in France but this affiliate is owned through an Irish holding. In the US balance of payments, a lot of the income generated in France will get counted to Ireland, particularly if the French affiliate is a disregarded entity for US tax purposes under the “check the box” rules. One potential reason for having an Irish intermediary is that it can make it easier to avoid French taxes and facilitate deferral of US taxes. But the balance of payments statistics do not

\[
\begin{align*}
\text{Source: Author's computations using National Income and Product Accounts and balance of payments data. See online Appendix.} \\
\text{Note: This figure charts the ratio of profits made in the main tax havens (Netherlands, Ireland, Switzerland, Singapore, Luxembourg, Bermuda, and other Caribbean havens) to total US corporate profits (domestic plus foreign).} \\
\text{Source: Zucman JEP 2014}
\end{align*}
\]
account of the taxes then paid by shareholders when profits are distributed, so as to capture the effective rate on capital income).

Figure 5 reports nominal and effective corporate tax rates on US corporate profits by decade since the 1950s. The figure shows that the effective corporate tax rate is always below the US federal nominal rate. Indeed, not all corporate profits are taxable; when they are, the IRS definition of profits is usually narrower than that used in the national accounts; and companies can defer taxes by retaining income abroad. The Tax Reform Act of 1986 attempted to bring the two rates in line—the nominal rate was reduced to 34 percent in 1988 in exchange for a base broadening. For about a decade, that strategy proved successful. But the situation changed in the late 1990s. From 1998 to 2013, the effective tax rate paid by US-owned firms has been reduced by a third, from 30 to 20 percent. If it had stayed constant, these companies would have, all else equal, paid $200 billion in additional taxes in 2013.

Not all of that decline should be attributed to increased tax avoidance. Although the nominal federal corporate tax rate has remained constant since 1998, tax revenues have been affected in other ways. First, changes in US laws have narrowed the tax base. For example, corporations can deduct 9 percent of manufacturing income (broadly interpreted) from taxable profits since 2004, reducing the effective rate by about 0.4 percentage point (Government Accountability Office 2013a, p. 26).
From 2001 to 2004 and again from 2008 to 2013, “bonus depreciation” was in force, altering the timing of depreciation deductions, although not their amount (Zwick and Mahon 2014). Some loopholes, on the other hand, have been plugged, such as tax cuts for profits derived from exports, which were found to contradict World Trade Organization rules.

Second, part of the large 2007–2010 decline in the effective tax rate owes to a drop in corporations’ realizations of capital gains and a rise in bad debt expenses, in both cases reducing taxable profits but not profits as measured in the national accounts. In recent years, revenues have also been affected by tax loss carryforwards from the 2008–2009 crisis. The net effect of the Great Recession, however, should not be overstated: in 2013, four years after the end of the recession, and despite a surge in profitability, the effective rate (20 percent) is still almost as low as in the 2009 trough (18.4 percent).5

Third, the profits made by S-corporations are included in national accounts profits, although they are not subject to corporate taxes, so for these firms, the effective corporate tax rate is zero percent. S-corporations are firms with less than

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5 This is not apparent in Figure 5 because this figure displays decade averages. Yearly estimates of the effective corporate tax rate are available online in the Excel Data Appendix to this article. Yearly data can be volatile, in particular because of year-to-year swings in capital gains realizations; to analyze long-run trends it is preferable to focus on decade averages as in Figure 5.
Exhibit 5: Earnings repatriated by all US firms as of 2Q 2016

Repatriated foreign earnings by US firms (rolling 4-quarter sum)

Source: Bureau of Economic Analysis, Goldman Sachs Global Investment Research
The race to the bottom is accelerating
Average tax rates by income group in 2018 (% of pre-tax income)

- Corporate & property taxes
- Consumption taxes
- Payroll taxes
- Individual income taxes
- Estate tax
Federal tax revenue (% of national income)

- Individual income tax
- Corporate income tax
Capital, profits & wages of US firms in tax havens
(% foreign capital, profits, and wages of US firms)

Profits booked in tax havens
Capital in tax havens
Wages paid to employees in tax havens
Profits booked by US firms in tax havens
(% of foreign profits of US firms)

- Ireland
- Switz.
- Caribbean
- Netherlands & Luxembourg
- Singapore
- Puerto Rico
- Luxembourg
No evidence the TCJA is working as advertised

Year-over-year change in real, nonresidential fixed investment, 2003Q1–2019Q4

Source: EPI analysis of data from table 1.1.6 from the National Income and Product Accounts (NIPA) from the Bureau of Economic Analysis (BEA).