

Who owns tobacco stocks?

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Abstract

We compare the ownership characteristics of tobacco stocks with their peers in the same country and industry group. We find lower reported ownership for stocks in the tobacco industry, which suggests that anonymous investors are larger owners of these sin stocks. Compared to peer stocks, U.S. and U.K. asset managers collectively overweight tobacco stocks, while norm-constrained investors such as sovereign wealth funds and pension funds underweight tobacco stocks. Passive managers have large stakes in tobacco stocks that are in line with the weights of these stocks in broad capitalization-weighted indices, indicating that passive replication of ethically screened indices is still a niche. We also identify some prominent active investors who take large positions in tobacco stocks.

Keywords: Divestment; Environmental, Social, and Governance (ESG); Exclusion; Socially Responsible Investing (SRI); Sustainable Development Goals (SDGs); Sustainable investing; Tobacco.

JEL Classification: G11; G12; G14

1. Introduction

Investing in the shares of firms with morally questionable business models raises ethical concerns. Investing in tobacco stocks is probably the best example of this, since smoking leads to millions of premature deaths. Wander and Malone (2006) describe how tobacco control advocates in the U.S. already urged pension funds to divest from tobacco companies in the 1990s. The Tobacco-Free Finance Pledge is a recent global initiative with the mission to inform, prioritize, and advance tobacco-free finance with the vision that this leads to a world free from tobacco. At the start of 2021, the pledge was signed by 160 investors representing USD 11 trillion in assets under management.² This still underestimates the total amount of assets applying exclusionary screens on tobacco, since not all investors who have divested from tobacco firms choose to sign the pledge. Blitz and Swinkels (2020a) give examples of several large asset managers and institutions that have explicit policies to exclude tobacco stocks, but also of those that do invest in tobacco firms.

It is commonly assumed that investors can contribute to a more sustainable world by divesting from unsustainable firms. However, divestment comes down to a transfer of ownership from concerned investors to other investors. Thus, there is no obvious direct channel between divestments from tobacco and fewer premature deaths from smoking.³

² Source: <https://tobaccofreeportfolios.org/>

³ Although divestments have zero direct implications, they might contribute to a more sustainable world via other, indirect channels, such as a higher cost of capital or due to signaling. Blitz and Swinkels (2020b) discuss each of these indirect channels in more detail.

Any improvement in the sustainability profile of the portfolio of an individual investor, i.e. at the micro-level, has zero direct implications at the macro-level, because the excluded securities must end up being owned by some other investor.⁴ In other words, if one investor divests from tobacco stocks, another investor will have an increased position in tobacco stocks, by definition. In this paper we examine the ownership of tobacco stocks, i.e. which investors ultimately hold tobacco stocks and which ones do not, without making a moral judgement on this.

There are at least five strong arguments put forward by the group of investors who exclude tobacco from their portfolio. First, tobacco is simply bad, because there are clear adverse health effects and there is no safe level of tobacco consumption. Second, it is morally objectionable to earn money with providing smoking products, and even worse, contribute to the expansion of the tobacco industry. Third, tobacco investments may turn out to be 'stranded assets', if governments around the world discourage smoking further, and perhaps eventually prohibit it altogether, putting tobacco companies out of business.⁵ Fourth, investors can earn the equity premium without investing in these sin stocks. Although historically sin stocks have outperformed the market, Blitz and Fabozzi (2017) shows that this can be explained by their factor characteristics, which may also be

⁴ This does not hold when an investor sells the shares back to the company during share repurchase programs, as is frequently the case according Blitz and Swinkels (2020a). However, in such case, the remaining shareholders own a larger share of the existing company. Therefore, economically, this is not different from transferring existing shares to the remaining shareholders.

⁵ For example, Smith and Malone (2020) advocate for government policies to reduce the number of tobacco sales outlets as an alternative to outright prohibition is likely to reduce smoking.

obtained with other, more sustainable stocks. Finally, engagement with the tobacco industry is often considered to be futile.⁶

However, there are also compelling arguments for not divesting from tobacco shares.⁷ First, these firms operate within democratic established laws, provide for jobs, and consumption goods that people seem to enjoy, at least in the short run. Second, systematically excluding any investment based on subjective moral considerations would conflict with the fiduciary duty to obtain the best financial results for clients. Third, investors may also choose to stay invested in tobacco shares because they believe that changes for the better are more likely to be realized by exercising one's voting rights as a shareholder and through engagement, instead of divesting from controversial firms and ending up on the sideline.⁸ Fourth, investors in tobacco shares have not financed the expansion of the tobacco industry over the past two decades.⁹ And in the future providing fresh capital to tobacco firms could be beneficial to society if these firms wish to invest in developing less harmful alternatives to smoking.¹⁰ Finally, tobacco investments have been great financial investments historically, and with high barriers to

⁶ See, e.g., Bauer (2018) and Van Schalkwyk, Diethelm, and McKee (2019).

⁷ Cohen, Ashley, Ferrence, Brewster, and Goldstein (1999) also mention that institutions that invest in the tobacco industry help to legitimize it and its products. Moreover, it potentially limits their support for tobacco control initiatives, as it may have negative financial consequences.

⁸ See, e.g. Crosby (2009) as an example of the impact that investor resolutions can have in the tobacco industry. Smith and Malone (2003) show that Philip Morris Companies considered selling off its tobacco business under external and internal pressures. However, in 2003 it opted for a rebranding strategy and change its name to Altria. In 2008, it spun off Philip Morris International.

⁹ See Blitz and Swinkels (2020a).

¹⁰ An example of a recent innovation in the industry are e-cigarettes. Levi et al. (2018) estimate that replacing cigarettes with e-cigarettes would save 1.6-6.6 million premature deaths and 20.8-86.7 million life years in the U.S. alone.

entry and high dividend yields they may well remain an attractive investment going forward.¹¹

In this paper, we do not take a stance on whether the arguments in favor of or against investing in tobacco stocks are stronger. Instead, we examine which (types of) investors currently own tobacco stocks. To this end, we analyze ownership data that is available because of regulatory requirements and through voluntary disclosures by investors. We compare the ownership characteristics of tobacco stocks with their peers in the same country and industry group. Specifically, we consider the number of reported owners, ownership concentration, and the total ownership they represent. We also examine geographic differences in ownership. We proceed by documenting ownership of norm-constrained asset owners such as sovereign wealth and pension funds. We also analyze strategic entities, passive owners with a focus on the “big three”, and the largest active owners.

Our research contributes to the large and growing literature on sustainable investing. Hong and Kacperczyk (2009) report that institutional ownership is lower for so-called sin stocks, which they define as stocks in the tobacco, alcohol, and gambling business in the United States. They also report that investors that are more constrained by social norms are less likely to own sin stocks. Durand, Koh, and Tan (2013) examine whether these findings can be extended to countries in the Pacific Basin. They find that for the countries

¹¹ See Kanuri and McLeod (2016) for a performance analysis of stocks with high barriers to entry, or have a wide ‘moat’ according to Warren Buffett.

culturally similar to the U.S., Australia and New Zealand, institutional ownership is significantly lower for sin stocks, but that this is not the case for India, Japan, South Korea, Malaysia, and Singapore. Fauver and McDonald IV (2014) also find evidence that norms are culturally dependent across a sample of 20 countries. Our study adds to this literature by using the latest data and by examining ownership characteristics in much more detail. Using data from 41 countries, Dyck, Lins, Roth, and Wagner (2019) find that institutional owners transplant their social norms regarding environmental and social issues to the companies they invest in. Oikonomou, Yin, and Zhang (2020) find that long-term shareholders are primarily responsible for the positive social performance of companies. Tao, Hui, and Chen (2020) show that institutional shareholders initiate ESG-related shareholder proposals to generate real-world impact. Note that our study focuses on *ownership* of sin stocks, and not on their *returns*. The latter has been extensively examined by Fabozzi, Ma and Oliphant (2008), Statman and Glushkov (2009), Blitz and Fabozzi (2017), and Dimson, Marsh, and Staunton (2020). Our case study on the tobacco industry complements the studies of Fu, Lin, and Zhang (2020), who examine the ownership of the gaming industry in Macau, and Benz, Paulus, Scherer, Syryca, and Trück (2021), who examine ownership among carbon-intensive firms.

Our findings can be summarized as follows. First, we find lower reported ownership for stocks in the tobacco industry compared to other stocks from the same industry group. This suggests that investors who do not need to disclose their positions are larger owners of these 'sin' stocks. Second, we find that putting aside the strong home bias both for

tobacco and peer stocks, U.S. and U.K. asset managers seem to be least concerned with investing in tobacco stocks. Third, we do not find evidence that hedge funds, which are often regarded to be the least norm constrained institutional investors, invest heavily in tobacco stocks. Fourth, we document that sovereign wealth funds and pension funds invest less in tobacco stocks than in peer stocks. Fifth, we find that although passive investors have very large holdings in tobacco stocks, they have similarly large holdings in peer stocks. This indicates that passive managers predominantly replicate broad capitalization-weighted indices that include tobacco stocks, and that passive replication of ethically screened indices which excludes such stocks is still a niche. We also identify some prominent active investors who take large positions in tobacco stocks, in an absolute sense as well as relative to their investments in peer stocks.

2. Data

The tobacco industry has consolidated considerably over the past two decades. Currently, the MSCI World Index contains six shares in the industry Tobacco (Global Industry Classification Standard [GICS] 302030): Philip Morris (ticker: PM), Altria Group (MO), British American Tobacco (BATS), Imperial Brands (IMB), Japan Tobacco (2914), and Swedish Match (SWMA). The first two have their main listing in New York, the next two in London, and the last two in Tokyo and Stockholm, respectively. For each of these stocks, we create a peer-group of similar stocks. We first match these on MSCI World Index membership, country, and industry group. The industry group Food, Beverage,

and Tobacco (GICS 3020) contains the industries Beverages (GICS 302010) and Food Products (GICS 302020) in addition to Tobacco. The peer-group for Swedish Match is empty, and is therefore expanded to other Scandinavian countries (Norway and Denmark) and to the Sector Consumer Staples (GICS 30), which also contains the industries Food & Staple Retailing (GICS 301010), Household Products (GICS 303010) and Personal Products (GICS 303020). A full list of peers can be found in Appendix A.

We obtain our ownership data from Refinitiv (previously Thomson Reuters) Share Ownership and Profile data as of 31 December 2019. This is a consolidation of many data sets that are largely based on regulatory disclosure requirements.¹² For the U.S., they combine so-called 13F filings of institutional investors with Declarable Stakes, and Insider data, but also data that is voluntarily disclosed by certain investors, for example in their annual report.¹³ For the U.K., the share register data is used, as well as data from the Regulatory News Service, the London Stock Exchange's official news outlet. For Japan and Sweden, most data is coming from mutual fund disclosures either through direct reports or derived data disclosures, supplemented with regulatory data on large stakes and insiders.

¹² Source: https://www.refinitiv.com/content/dam/marketing/en_us/documents/fact-sheets/ownership-profiles-fact-sheet.pdf and http://banker.thomsonib.com/ta/help/webhelp/Ownership_Glossary.htm

¹³ Anderson and Brockman (2018) caution researchers to blindly use 13F filings, as they are not checked by the SEC and contain errors. We do not find obvious errors in our data set, but note that one stock in the peer group has reported ownership of 103.5%. This could happen if the stock is short sold, but may also be due to differences in reporting dates between ownership. For example, the 10.97% ownership of Adolph Coors Company has a reporting data of 15 March 2019, while the 13F filings are based on 31 December 2019.

3. Who owns tobacco stocks?

3.1 Ownership characteristics

We compare the six tobacco stocks in our sample with the average of their peers. Table 1 contains the aggregated ownership information as of 31 December 2019. The tobacco stocks have a larger market capitalization than their peers for the U.S. and Japan. For the U.K. and Sweden the average size of the tobacco companies is closer to their peers. We also observe that tobacco companies tend to have much higher dividend yields than their peers, suggesting that they are mature, cash-rich companies that do not need their stock exchange listing for raising fresh capital, which is consistent with the findings of Blitz and Swinkels (2020a). While the dividend yield of Swedish Match appears relatively low at 2.2%, we note that it has a net payout yield of 6% due to its share repurchase program.

[INSERT TABLE 1 HERE]

Due to different reporting obligations, the total ownership that is accounted for differs across countries. The available data allows us to identify 85.1% of the owners of the peers of Philip Morris and Altria Group, while this number is 71.0% in the U.K., and even lower in Japan (57.9%) and Sweden (58.7%). The obvious implication of this is that we are less

certain about the ownership of tobacco shares for markets where reporting obligations are lower.

The number of reporting owners for Philip Morris (2,362) and Altria group (2,227) is substantially larger than average the number of reported owners for their peers (1,388). The same is true in the U.K., where British American Tobacco (748) and Imperial Brands (570) have more reporting holders than their peers (514). A similar pattern can also be seen for in Japan, where Japan Tobacco has 436 reporting owners, versus only 274 on average for its peers. However, in Sweden the number of reporting owners is lower for tobacco stocks. Hence, it is difficult to draw strong conclusions, but it seems that there are more reporting owners for tobacco stocks than for peers.¹⁴

For five out of six tobacco companies, we see that total reported ownership is substantially below that of its peers. For Philip Morris and Altria Group, reported ownership amounts to 75.4% and 64.1% respectively, while the reported ownership of their peers is 85.1%, so a difference of about 10-20%. In the U.K., reported ownership of Imperial Brands is similar as for the peer group, but for British American Tobacco it is more than 15% lower. The differences for Japan Tobacco and Swedish Match are smaller, but still reported ownership is 5% lower for the tobacco stocks. These findings are consistent with the theory that investors who can fly below the radar, and therefore are

¹⁴ In the asset pricing model by Merton (1987), a small number of investors is associated with higher future returns, while in the model by Chen, Hong, and Stein (2002) a small number of investors predicts higher future returns. Hardouvelis, Karalas, and Vayanos (2021) report that for small capitalization stocks, a wider investor base is associated with lower returns, but for large capitalization stocks a wider investor base implies higher returns. We document a larger number of investors for large capitalization tobacco stocks, which would be consistent with a premium for tobacco stocks.

less constrained by social norms, are more likely to absorb the supply from tobacco divestments than other investors with public reporting obligations.¹⁵ We also see that the total ownership of the 10 largest owners is lower for tobacco stocks. The only exception is Japan Tobacco, which is a special case because the Ministry of Finance of Japan is a strategic owner of one-third of the company.

Table 1 also shows that domestic investors have relatively high ownership of the local stock market. There are several explanations for the relatively low number of foreign investors. First, reporting obligations for foreign investors may be lower. Second, foreign investors may invest through mutual funds managed by U.S. asset managers, which hides the identity and location of the end investor. Third, several foreign investors have set up special asset management entities, which are treated as domestic investors. Finally, investors may have a strong preference to hold domestic stocks. This means that investors purchase proportionally more domestic assets than is warranted based on the weight in the market index. The home bias may be a behavioral bias such as a familiarity bias, but it can also be rational if domestic dividends or capital gains are taxed differently across countries, or if domestic investors are more likely to wish to exert control over the company.¹⁶

For the U.S., only about 15% of reported ownership is by foreign investors, similar for tobacco stocks and their peers. Foreign ownership is largest for U.K. investors, who tend

¹⁵ Jank, Roling, and Smajlbegovic (2021) use a proprietary data set to show that many short sellers choose to stop accumulating short positions just before they reach the mandatory disclosure threshold.

¹⁶ For a recent literature survey on the home bias, see Gaar, Scherer, and Schiereck (2020).

to own relatively more tobacco stocks compared to the peer group. Other European investors are relatively smaller owners of U.S. tobacco stocks than peer stocks. We see a similar pattern for the tobacco companies from other countries as well. For the two U.K. tobacco stocks, U.S. investors are approximately equally large owners as U.K. investors, with both groups having about 30% ownership. U.S. investors have on average a slightly higher ownership of U.K. tobacco stocks compared to peer stocks, while U.K. investors have a slightly lower ownership. Again, other European investors have substantially lower ownership of tobacco stocks than of peer stocks. Reported ownership of Japanese stocks is mostly by Japanese investors, which includes corporate cross-holdings that are common in that market. It is remarkable that for Swedish Match, ownership by U.S. investors is largest, and that U.K. investor ownership is similar to other European ownership. The latter own only 15.9% of Swedish Match, while they own 39.0% of the peer group. U.S. investors own 20.2% of Swedish Match, but only 12.3% of the peers, while for U.K. investors the numbers are 15.0% and 4.9%, respectively. Dutch institutional investors largely avoid investing in the tobacco industry, as evidenced by the near-zero holdings for tobacco stocks in combination with positive weights for peer stocks. Investors from Australia and New Zealand also stand out with relatively low ownership of tobacco stocks. These pronounced geographic differences in tobacco share ownership indicate that societal norms vary substantially across countries.¹⁷

¹⁷ The commitment of Australia's government and superannuation funds to divest from tobacco dates back to 2013, when these funds sold off AU\$ 1 billion worth of tobacco shares. Source: Jones and Sanders (2013).

The investor type information is not very specific. Unfortunately, in addition to the categories ‘investment advisor’, which contains mostly asset managers, and ‘hedge funds’ there is also a combined category ‘investment advisor / hedge fund’. This combined category makes it difficult to ascertain whether hedge funds are on the other side of the tobacco divestments. If we look at the relatively small separate category Hedge Funds, it seems that they have lower ownership in tobacco stocks than in their peers. This contradicts the popular notion that less norm constrained investors, such as hedge funds, are more likely to invest in tobacco stocks. The category Other contains strategic investors such as government institutions, corporations, and individuals.

3.2 Norm-constrained investors

In this subsection, we zoom in on investors that are likely to be more norm-constrained than others, specifically sovereign wealth funds and pension funds.¹⁸ Due to the public nature of their investments, diverse constituencies, and exposure to public scrutiny, Hong and Kacsperczyk (2009) hypothesize that these investors are more likely to avoid investing in sin stocks. This shunning of sin stocks may come at the expense of lower expected Sharpe ratios for these sustainable investors; see Pástor, Stambaugh, and Taylor (2020), Pedersen, Fitzgibbons, and Pomorski (2020), and Zerbib (2020), among others.

In Table 1 the total ownership of the category ‘pension funds’ is also included. Pension funds generally invest much less in tobacco stocks than in peer stocks. The only exception

¹⁸ Other investor types that are likely to be norm-constrained are “foundations”, but their ownership tends to be very small.

is Imperial Brands, for which reported ownership of 2.0 percent is marginally higher than the 1.9 percent reported for pension funds for peer stocks. Among the large pension funds that are included in the ownership records, we observe that five have public issued a tobacco exclusion policy: APG Asset Management, PGGM Asset Management (both asset managers of large pension funds in the Netherlands), AustralianSuper, California Public Employees' Retirement System, and California State Teachers Retirement System. Our ownership data confirms their stated intentions, as we find that they do not hold any tobacco stocks, while they do have positions in peers.¹⁹ The exclusion policies of these large pension funds are a major reason for our earlier result that investors in the Netherlands and Australia are shunning tobacco stocks.

Table 1 also shows that the category 'sovereign wealth funds' owns less tobacco stocks than peer stocks. For example, they own only 0.2 percent of Philip Morris and Altria Group, while they own 1.1 percent in the group of peer stocks. The difference is smallest in Sweden, where sovereign wealth funds hold 1.6 percent of Swedish Match and 1.9 percent of peers. We can also drill down one layer further at the identity of sovereign wealth funds. The Alberta Investment Management Corporation and Norges Bank Investment Management, the asset managers of the sovereign wealth funds of the province Alberta in Canada and Norway, have explicitly excluded equity investments in tobacco companies from their portfolios. This is confirmed by our empirical analysis, as

¹⁹ Gibson, Glossner, Krueger, Matos, and Steffen (2020) find that institutional portfolios have better ESG footprints when they have publicly committed to responsible investing, at least outside the U.S.

they do not appear as owners of tobacco stocks, while they do have holdings in peer stocks.

Altogether, our data shows that among norm-constrained investors such as large pension funds and sovereign wealth funds, ownership in tobacco shares is relatively low. This is likely due to the explicit exclusion policies by several of these funds. For the pension funds and sovereign wealth funds that do invest in tobacco shares we observe that their ownership of tobacco stocks is comparable to their ownership of peer stocks, implying that they stay close to market capitalization weights. According to our data, none of the large pension funds or sovereign wealth funds has a large overweight in tobacco stocks.

3.3 Strategic and passive investors

Some investors have large stakes in companies because they have special interests in these companies. This can be individuals (often founders), other companies (parent or sister companies), or government-related institutions, among others. As can be seen from the peer group, it can be quite common that a strategic investor owns a substantial part of the outstanding shares. However, for the six tobacco stocks in our sample this is only the case for Japan Tobacco. The Ministry of Finance of Japan started privatizing the company in 1994, owning two-thirds in 2002, which was further reduced to a half after 2004, and reduced to the legal minimum of one-third in 2013 when its stake was sold to help rebuild the region struck by earthquake and tsunami.²⁰ As an aside we note that the

²⁰ See Levin (2005) and MacKenzie, Eckhardt, and Prastyani (2017) for a more detailed description.

biggest tobacco company in the world, China Tobacco, is fully owned by the Chinese government. This firm is not included in our sample because it is not publicly listed.²¹

Passive asset managers are large owners of tobacco stocks. In the U.S., they own on average 27% of tobacco shares. Passive ownership of the non-US tobacco stocks is considerably lower, at 5-15%, which could either be because passive investing is less popular outside the U.S., or because reporting requirements are different there. The majority of U.S. passive ownership (19% out of 27%) is managed by the “Big Three” passive managers: Vanguard, BlackRock, and State Street.²² Although these three are among the largest investors, they are also large investors in the peer group. For a passive investor that tracks a market capitalization index, the ownership weights for all stocks should be similar. However, passive investors typically track ‘free float adjusted’ indexes, which means that strategic owners are excluded from the total share count, leading to lower ownership of companies with higher strategic ownership. This helps to explain why ownership in the peer group in the U.K. and Sweden is somewhat lower, while in Japan it is somewhat higher. Differences in ownership weights may also arise because these asset managers which are primarily known for passive investing also run active

²¹ Hogg, Hill, and Collin (2016) analyze the relationship between state-owned tobacco companies and effective measures to reduce tobacco consumption.

²² *Vanguard* is a combination of these entities listed in the database: “The Vanguard Group, Inc.”, “Vanguard Investments Australia Ltd.”, “Vanguard Global Advisers LLC”, and “Vanguard Capital Wealth Advisers, LLC”. *BlackRock* is a combination of these entities listed in the database: “BlackRock Institutional Trust Company, N.A.”, “BlackRock Investment Management (UK) Ltd.”, “BlackRock Asset Management Ireland Limited”, “BlackRock Financial Management, Inc.”, “BlackRock Investment Management, LLC”, “BlackRock Japan Co., Ltd.”, “BlackRock Advisers (UK) Limited”. *State Street* is a combination of these entities in the database: “State Street Global Advisers (US)”, “State Street Global Advisers (UK) Ltd.”, “State Street Global Advisers (Japan) Co., Ltd.”, “State Street Global Advisers (France) S.A.”, “State Street Global Advisers Ltd. (Canada)”.

strategies, which do not adhere to market capitalization weights. Distortions can also arise because passive managers follow many different indices. However, since the weights in tobacco stocks are roughly similar to the weights in peer stocks we see no compelling evidence that a significant portion of passive assets tracks sustainable indices which explicitly exclude tobacco stocks. Fitchner, Heemskerk, and Garcia-Berardo (2017), Fisch, Hamdadi, and Solomon (2019), and Bebchuk and Hirst (2019) note that these three passive managers have gained enormous voting power over the last decade, and therefore could influence management to improve their business practices – in theory at least. It is however not clear whether the incentive to do so is sufficient.²³

3.4 Active asset managers

For each individual country in our sample, we display the 10 largest active asset owners in the tobacco industry, together with their ownership of the peer group. We also compiled a list of large active asset managers in peer stocks, but that are divested from tobacco stocks. However, these are hard to find, and largely overlap with the pension funds and sovereign wealth funds that we already discussed in Section 3.2.

[INSERT TABLES 3, 4, 5 AND 6 HERE]

²³ De Groot, De Koning, and Van Winkel (2021) analyze the voting behavior of asset managers and conclude that passive managers often vote against environmental or social shareholder proposals.

Table 3 contains the 10 largest active owners in the U.S. Even though the largest active investor has a smaller position than the passive funds, the three that belong to the Capital Group (Capital World, Capital Research, and Capital International) in total own more of the U.S. tobacco industry than Vanguard. All but one of the top 10 largest active owners of U.S. tobacco stocks are from the U.S., the only exception being Morgan Stanley Investment Management from the U.K. This reinforces the strong home bias that we discussed before. Apart from Invesco, all of the other top 10 active asset managers are less invested in the tobacco peers, so they really seem to take an active, intentional bet on tobacco stocks.

Table 4 shows the top 10 active asset managers in the U.K. From the active investors, we see that Capital Research and Capital World are again among the largest tobacco investors, and owning substantially more tobacco than peer shares. Except for Columbia Threadneedle (U.S.) and Orbis (Bermuda), the other large tobacco investors are domiciled in the U.K., with on average about 1% ownership each.²⁴

The largest active owner of Japan Tobacco is the Japanese asset manager Nomura with 2.1%, while other major active owners own less than 1% of its shares, which can be seen from Table 5. Again, many large shareholders are domestic. Exceptions are again Capital World and Capital Research, which both again rank among the top 10. While it is possible

²⁴ Note that in the panel with the geographic distribution of ownership in Table 1, the category “Other” is relatively large for the U.K. tobacco and peer stocks. This is partially due to Bermuda-based asset manager Orbis.

that our overview misses large shareholders due to limited reporting obligations, they should not own more than 5% of shares, as these typically require regulatory disclosure.

Table 6 shows that there is large active ownership of Swedish Match, with 41.7% accounted for in our ownership data. There are only three U.S. asset managers among the largest 10 investors, and among them no member of the Capital Group. We see two Scandinavian asset managers among the largest holders, SEB and Nordea. The others are from the U.K. and Invesco is the only German asset manager that we have seen among large investors in the tobacco industry. But note that Invesco Advisors, their U.K. entity, is also among the largest owners, which brings total ownership of Swedish Match of the asset management company at 5.5%.

4. Trends in the ownership of tobacco stocks

The results in the previous section are based on data as of 31 December 2019, i.e. one point in time. In this section, we analyze in more detail which observations have been consistent over the past decade, and which are a more recent phenomenon. For the sake of brevity, we focus on the two tobacco stocks listed in the U.S., which offer the best historical data quality. We note, however, that the presented results are qualitatively similar for the tobacco stocks listed outside the U.S.²⁵

²⁵ Appendix B includes reported ownership trends for tobacco stocks outside the U.S.

[INSERT FIGURE 1 HERE]

Figure 1A shows that the number of reporting owners has been steadily increasing over time, but that the number of owners of Philip Morris and Altria Group is consistently higher than in the peer group. Figure 1B confirms that total ownership that is accounted for is consistently lower for both tobacco stocks. Taken together, these figures indicate that the ownership discrepancies between tobacco stocks and peer stocks are stable over time.

[INSERT FIGURE 2 HERE]

In Figure 2 we show the trends in geographical ownership of U.S. tobacco and peer stocks. For most countries the ownership is stable over time, so the previously discussed results as of end 2019 carry over to the entire decade. For instance, U.K. and Rest of Europe investors structurally hold relatively large positions in tobacco stocks compared to peer stocks. For some other countries we do observe notable changes over time. For instance, our previous finding that investors in the Netherlands have a large underweight in tobacco stocks compared to peers turns out to be a relatively recent phenomenon. Before 2018 Dutch investors did have significant stakes in tobacco stocks, although still lower than their stakes in peer stocks. These results suggest that some Dutch investors already

exclude tobacco stocks for a long time, while many of the remaining investors followed suit a couple of years ago. For other European countries, the gap has remained relatively constant, even though ownership of Altria Group has decreased after 2017, while ownership of Philip Morris has increased. Until 2016, investors from Australia and New Zealand invested similar amounts in U.S. tobacco and peer stocks. Starting in 2017, they doubled ownership in peer stocks, while ownership of U.S. tobacco stocks is slightly reduced, leading to a considerable gap between the two.

[INSERT FIGURE 3 HERE]

Figure 3A shows a similar, but slightly less pronounced trend for the pension fund category. A decade ago, pension fund ownership of tobacco and peer stocks was equally high, but from 2013 (one year after the Tobacco Free Portfolios initiative was started) a difference starts to arise. The last two years of the sample the difference increases again, apparently coinciding with the exclusion of tobacco stocks by large Dutch pension funds.²⁶ Figure 3B indicates that sovereign wealth funds have been, on aggregate, structurally underinvested in U.S. tobacco stocks compared to peer stocks.

²⁶ Hong and Kacperczyk (2009) report that norm-constrained investors are less likely to hold sin stocks. Note, however, that for this specific analysis they use a sample from 1980 to 1997. Moreover, they use a different group of norm-constrained investors, and they consider the group of sin stocks including alcohol and gambling stocks, and not tobacco stocks separately. We have qualitatively the same conclusion, but only when we examine pension fund ownership of tobacco stocks after 2013.

[INSERT FIGURE 5 HERE]

Finally, we show the time trend of passive ownership of tobacco stocks. Figure 5 shows that total ownership of passive investors has increased from 20% in 2010 to almost 30% in 2019. Thus, passive investors have been large net buyers of tobacco stocks during the past decade. The potential influence that passive owners could exert over the business practices of tobacco companies has increased with 50% over this decade. We see that ownership of peer stocks is slightly higher than of tobacco stocks, but the market share of passive managers has grown much faster than they have been able to transform their index tracking business to more sustainable indices.

Summarizing, the larger number of owners but lower total reported ownership percentage is consistent over the past decade. Norm-constrained investors such as pension funds outside the U.S. and U.K. are increasingly divesting from tobacco stocks. Finally, passive ownership of tobacco stocks has increased substantially over the past decade.

5. Conclusion

We find that reported ownership of tobacco stocks tends to be substantially lower than reported ownership for a peer group of stocks from the same industry group. This implies

that some owners can afford to remain under the radar when it comes to disclosing their holdings in tobacco companies. We also examine holdings of large sovereign wealth and pension funds, which are commonly considered to be norm-constrained due to their public nature. We find that several of these funds have divested from tobacco shares. We also find that European (excluding U.K.) investors seem to hold relatively low amounts of tobacco stocks, while U.S. and U.K. investors seem to hold relatively high amounts. This suggests that there are cultural differences about investing in tobacco shares. Altogether, these findings are consistent with the hypothesis that investors constrained by social norms may invest less in sin stocks such as those from the tobacco industry, and that divestment among norm-constrained investors seems to be increasing over time.

Apart from certain strategic entities, the “big three” passive asset managers are mostly among the largest shareholders in the tobacco industry. Passive managers have also been large net buyers of tobacco stocks over the past decade. However, they typically invest equally much in non-tobacco peers. Thus, although they are large owners, they do not own a disproportionately high fraction of the tobacco industry. Our results indicate that the vast majority of passive investors follow broad capitalization-weighted indices that include tobacco stocks, and that passive investment in sustainable indices which explicitly exclude such stocks is still a niche. We identify a number of active asset managers that are large owners in the tobacco industry. These group of large owners seems to be tilted towards domestic active asset managers. Exceptions are the asset

managers that belong to the Capital Group, which have large stakes for several tobacco companies, also outside the U.S.

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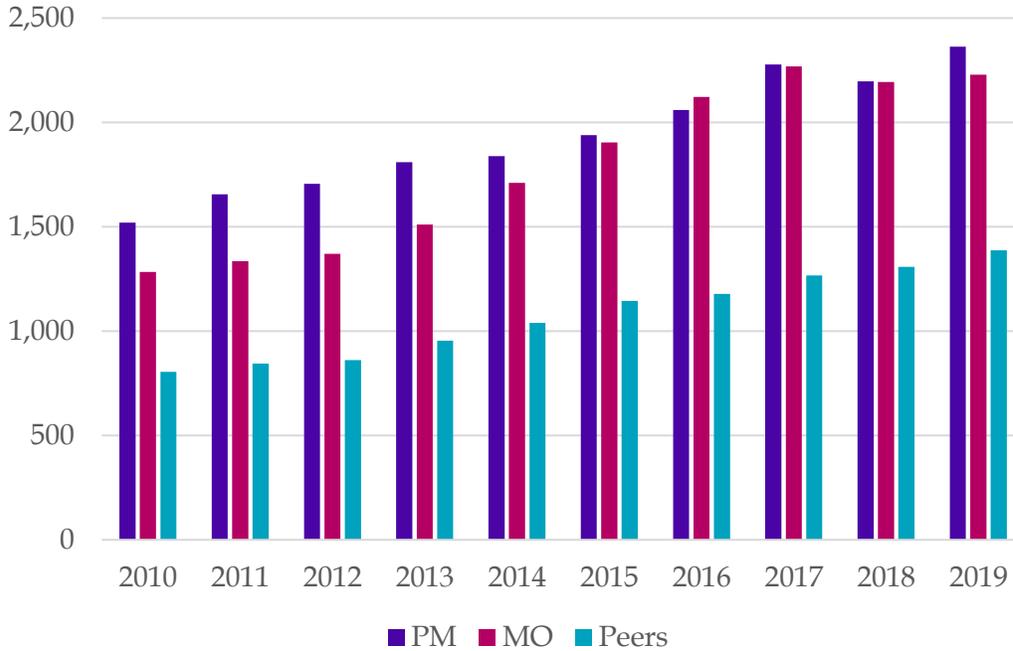
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Figure 1: Reported ownership of U.S. tobacco stocks and peers over time

Tobacco firms are Philip Morris (PM) and Altria Group (MO). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Data as of 31 December of each year. Ownership on vertical axis in %.

Panel A: Number of reporting owners



Panel B: Total reported ownership (%)

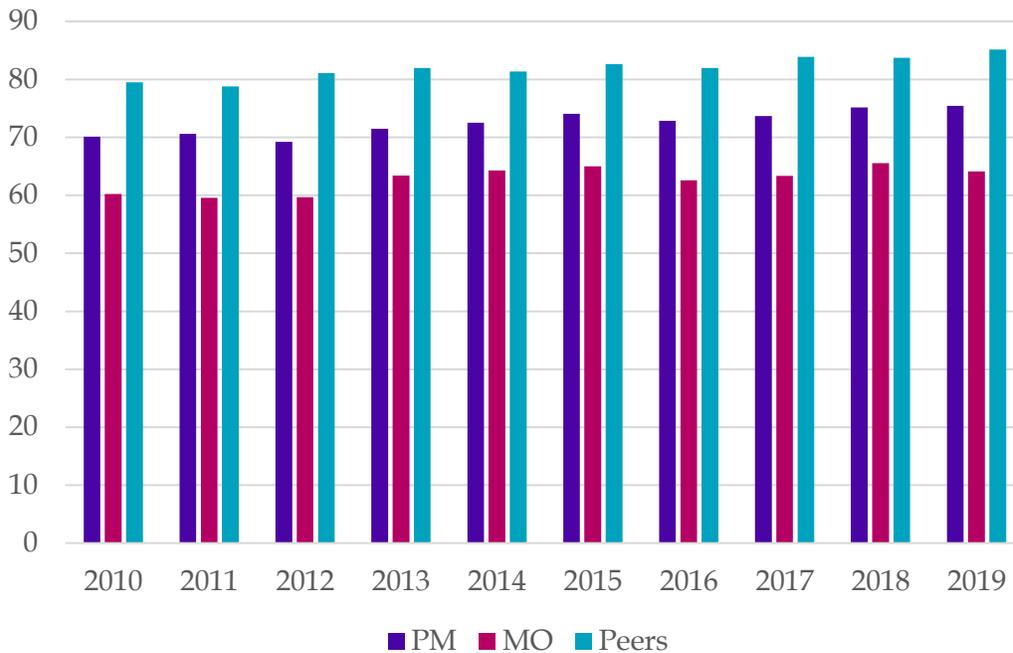
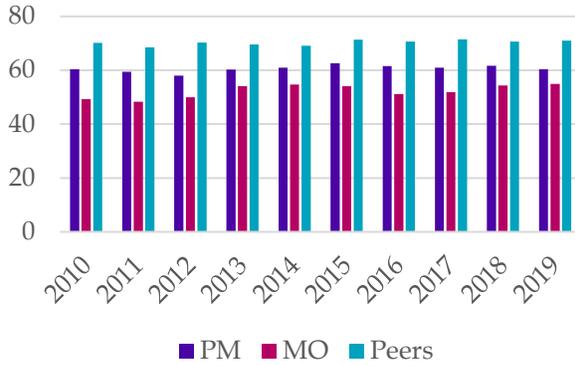


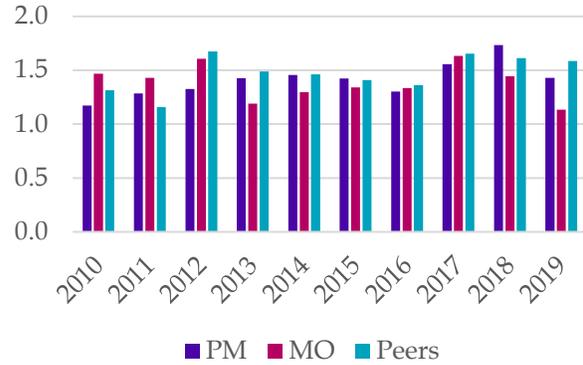
Figure 2: Geographic ownership trends of U.S. tobacco stocks

Tobacco firms are Philip Morris (PM) and Altria Group (MO). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Data as of 31 December of each year. Ownership on vertical axes in %.

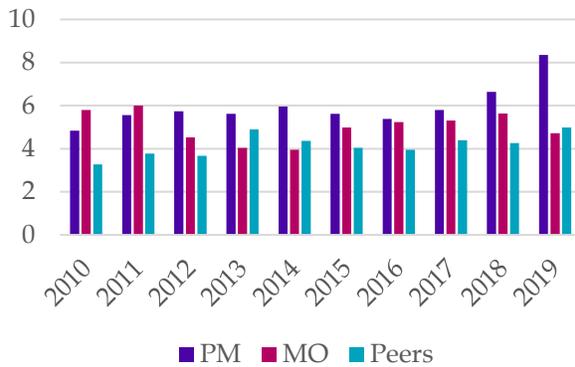
Panel A: U.S.



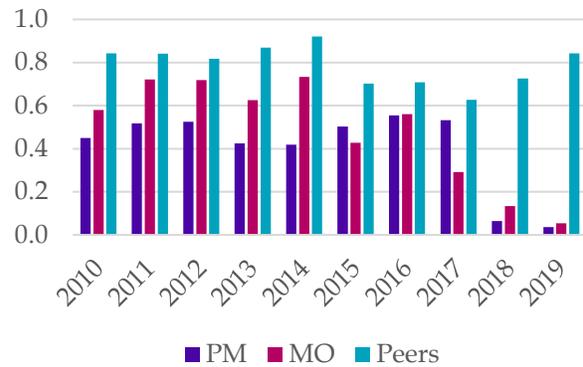
Panel B: Canada



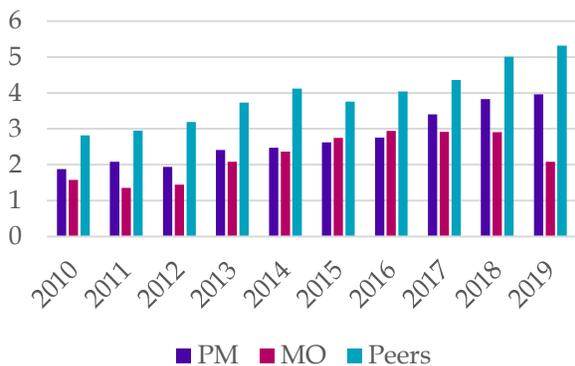
Panel C: U.K.



Panel D: Netherlands



Panel E: Rest of Europe



Panel F: Australia and New Zealand

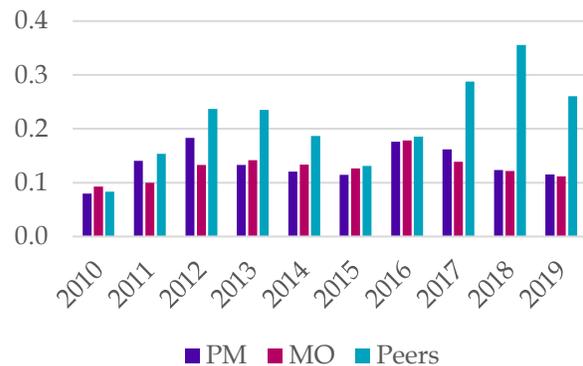


Figure 3: Investor type ownership trends of U.S. tobacco stocks

Tobacco firms are Philip Morris (PM) and Altria Group (MO). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Data as of 31 December of each year. Ownership on vertical axes in %.

Panel A: Pension funds



Panel B: Sovereign wealth funds



Figure 4: Total passive ownership (%) of U.S. tobacco stocks and peers over time

Tobacco firms are Philip Morris (PM) and Altria Group (MO). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December of each year.



Table 1: Ownership characteristics of tobacco stocks and their peers

Tobacco firms are Philip Morris (PM), Altria Group (MO), British American Tobacco (BATS), Imperial Brands (IMB), Japan Tobacco (2914), and Swedish Match (SWMA). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December 2019.

| | United States | | | United Kingdom | | | Japan | | Sweden | |
|--------------------------------|---------------|-------|-------|----------------|-------|-------|-------|-------|--------|-------|
| | PM | MO | Peers | BATS | IMB | Peers | 2914 | Peers | SWMA | Peers |
| Stock characteristics | | | | | | | | | | |
| Market capitalization | 132.4 | 93.2 | 42.8 | 98.2 | 23.4 | 39.4 | 26.9 | 6.6 | 8.8 | 11.8 |
| Dividend yield | 5.5% | 6.7% | 2.5% | 6.3% | 10.7% | 1.9% | 6.2% | 1.6% | 2.2% | 2.8% |
| Shareholder information | | | | | | | | | | |
| Number | 2,362 | 2,227 | 1,388 | 748 | 570 | 514 | 436 | 274 | 296 | 394 |
| Total ownership (%) | 75.4 | 64.1 | 85.1 | 54.0 | 71.8 | 71.0 | 50.7 | 57.9 | 53.7 | 58.7 |
| Ownership Top 10 (%) | 33.0 | 31.4 | 43.8 | 27.0 | 28.8 | 51.5 | 43.6 | 37.2 | 28.8 | 40.2 |
| Geography | | | | | | | | | | |
| United States | 60.3 | 54.9 | 71.0 | 26.6 | 25.8 | 24.5 | 7.0 | 9.2 | 20.2 | 12.3 |
| Canada | 1.4 | 1.1 | 1.6 | 1.0 | 2.8 | 1.1 | 0.3 | 0.8 | 1.2 | 1.2 |
| United Kingdom | 8.4 | 4.7 | 5.0 | 18.2 | 29.6 | 29.4 | 1.8 | 2.9 | 15.0 | 4.9 |
| Netherlands | 0.0 | 0.1 | 0.8 | 0.0 | 0.1 | 0.5 | 0.0 | 1.7 | 0.0 | 0.9 |
| Rest of Europe | 4.0 | 2.1 | 5.3 | 3.2 | 7.2 | 13.9 | 0.9 | 2.4 | 15.9 | 39.0 |
| Australia & New Zealand | 0.1 | 0.1 | 0.3 | 0.1 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| Japan | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 | 0.5 | 40.2 | 39.8 | 0.0 | 0.0 |
| Other | 0.5 | 0.4 | 0.3 | 4.1 | 3.5 | 1.1 | 0.4 | 1.3 | 1.3 | 0.3 |
| Investor type | | | | | | | | | | |
| Investment Advisor | 37.3 | 30.7 | 29.9 | 28.1 | 36.9 | 17.7 | 8.5 | 14.3 | 24.7 | 18.3 |
| Inv Advisor / Hedge Fund | 30.3 | 25.0 | 30.9 | 22.8 | 29.9 | 13.4 | 6.5 | 9.6 | 24.7 | 14.9 |
| Hedge Fund | 0.7 | 1.5 | 3.7 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Pension Fund | 2.3 | 2.3 | 3.4 | 1.2 | 2.0 | 1.9 | 0.3 | 1.4 | 2.0 | 5.9 |
| Sovereign Wealth | 0.2 | 0.2 | 1.1 | 0.6 | 0.5 | 2.9 | 0.2 | 1.4 | 1.6 | 1.9 |
| Other | 4.6 | 4.5 | 16.2 | 1.3 | 2.3 | 35.9 | 35.2 | 31.2 | 0.7 | 17.7 |

Table 2: Strategic and passive owners

Tobacco firms are Philip Morris (PM), Altria Group (MO), British American Tobacco (BATS), Imperial Brands (IMB), Japan Tobacco (2914), and Swedish Match (SWMA). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December 2019.

| | | United States | | | United Kingdom | | | Japan | | Sweden | |
|-------------------------|----------------|---------------|------|-------|----------------|------|-------|-------|-------|--------|-------|
| | | PM | MO | Peers | BATS | IMB | Peers | 2914 | Peers | SWMA | Peers |
| Strategic Owners | Country | 0.3 | 0.1 | 8.2 | 0.6 | 0.5 | 34.7 | 33.6 | 21.5 | 0.5 | 16.8 |
| Ministry of Finance | JP | - | - | - | - | - | - | 33.3 | 0.0 | - | - |
| | | <hr/> | | | <hr/> | | | <hr/> | | <hr/> | |
| | | PM | MO | Peers | BATS | IMB | Peers | 2914 | Peers | SWMA | Peers |
| Passive | Country | 26.8 | 28.5 | 31.8 | 14.8 | 16.2 | 9.0 | 5.9 | 7.2 | 11.5 | 6.6 |
| Vanguard | US | 8.1 | 8.1 | 8.5 | 3.3 | 3.4 | 2.2 | 1.8 | 2.2 | 3.2 | 2.3 |
| BlackRock | US | 6.0 | 7.5 | 6.9 | 7.8 | 7.6 | 3.8 | 1.8 | 2.7 | 5.0 | 2.3 |
| State Street | US | 4.0 | 4.2 | 4.9 | 1.7 | 1.9 | 1.0 | 0.1 | 0.1 | 0.4 | 0.3 |

Table 3: Ownership of active asset managers in the U.S.

Tobacco firms are Philip Morris (PM) and Altria Group (MO). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December 2019.

| | | PM | MO | Peers |
|-----------------------|----------------|------|------|-------|
| Active | Country | 48.4 | 35.6 | 45.1 |
| Capital World | US | 4.7 | 4.0 | 0.9 |
| Fidelity Management | US | 0.7 | 3.8 | 0.9 |
| Capital Research | US | 2.5 | 1.8 | 1.1 |
| Capital International | US | 2.4 | 1.4 | 0.3 |
| T. Rowe Price | US | 2.0 | 0.3 | 1.3 |
| Morgan Stanley IM | UK | 1.9 | 0.0 | 0.0 |
| Columbia Threadneedle | US | 1.2 | 0.5 | 0.4 |
| Invesco | US | 1.4 | 0.2 | 0.8 |
| Fayez Sarofim | US | 0.9 | 0.7 | 0.1 |
| JP Morgan AM | US | 1.0 | 0.5 | 0.4 |

Table 4: Ownership of active asset managers in the U.K.

Tobacco firms are British American Tobacco (BATS) and Imperial Brands (IMB). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December 2019.

| | | BATS | IMB | Peers |
|------------------------|----------------|------|------|-------|
| Active | Country | 38.8 | 55.2 | 28.2 |
| Capital Research | US | 6.0 | 5.1 | 2.1 |
| Capital World | US | 3.7 | 2.1 | 2.1 |
| M & G | UK | 0.9 | 2.9 | 0.3 |
| Orbis | BM | 1.1 | 2.3 | 0.0 |
| Columbia Threadneedle | US | 0.3 | 1.9 | 0.2 |
| Aberdeen Standard | UK | 0.8 | 1.3 | 0.3 |
| Independent FP | UK | 0.6 | 1.5 | 0.0 |
| Cedar Rock | UK | 2.1 | 0.0 | 0.0 |
| Fidelity International | UK | 0.4 | 1.5 | 0.4 |
| Artemis | UK | 0.3 | 1.7 | 0.0 |

Table 5: Ownership of active asset managers in Japan

Tobacco firm is Japan Tobacco (2914). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December 2019.

| Active | Country | 2914 | Peers |
|-------------------|----------------|------|-------|
| | | 11.1 | 29.3 |
| Nomura | JP | 2.1 | 3.6 |
| Daiwa | JP | 0.9 | 1.6 |
| Nikko | JP | 0.9 | 1.7 |
| Capital World | US | 0.9 | 0.1 |
| MFS | US | 0.7 | 0.8 |
| Mitsubishi UFJ | JP | 0.4 | 0.7 |
| Capital Research | US | 0.3 | 0.6 |
| DWS | DE | 0.3 | 0.1 |
| MFS International | SG | 0.3 | 0.0 |
| FIL | JP | 0.2 | 0.0 |

Table 6: Ownership of active asset managers in Sweden

Tobacco firm is Swedish Match (SWMA). The column 'Peers' contains the equally-weighted average of the peer group. More details about the peer group can be found in Appendix A. Ownership is in %. Data as of 31 December 2019.

| Active | Country | SWMA | Peers |
|------------------------|----------------|------|-------|
| | | 41.7 | 35.3 |
| Fidelity International | UK | 3.9 | 0.0 |
| Cedar Rock | UK | 3.4 | 0.0 |
| Invesco | DE | 3.2 | 0.3 |
| Nordea | FI | 2.8 | 0.7 |
| Invesco Advisers | US | 2.3 | 0.4 |
| Gabelli | US | 2.2 | 0.0 |
| Cantillon | US | 1.9 | 0.0 |
| SEB | SE | 1.6 | 0.6 |
| Aberdeen Standard | UK | 1.4 | 0.1 |
| Goldman Sachs AM | UK | 1.4 | 0.0 |

Appendix A: Details of the peer groups

Table A1: United States

This table contains the names, tickers, industry classification, index membership, market capitalization, and dividend yield of the U.S. tobacco stocks and their peers. A ticker with an * indicates that the stock is listed at Nasdaq, others are at NYSE. GICS industry classification: 302010 Beverages, 302020 Food Products, 302030 Tobacco. Index membership in the MSCI World Index and S&P 500 Index is indicated with Y. The market cap is in USD billions, measured at 31 December 2019. The dividend yield is in percentage per year over 2019.

| Name | Ticker | GICS | MSCI World | S&P 500 | Mcap | Div yield |
|------------------------|-----------|---------------|------------|----------|--------------|-------------|
| Brown-Forman | BFB | 302010 | Y | Y | 20.9 | 1.0% |
| Coca-Cola | KO | 302010 | Y | Y | 225.3 | 2.9% |
| Constellation Brands | STZ | 302010 | Y | Y | 31.8 | 1.6% |
| Molson Coors Beverage | TAP | 302010 | Y | Y | 9.5 | 4.2% |
| Monster Beverage | MNST* | 302010 | Y | Y | 25.6 | 0.0% |
| PepsiCo | PEP* | 302010 | Y | Y | 190.6 | 2.8% |
| Archer-Daniels-Midland | ADM | 302020 | Y | Y | 25.8 | 3.0% |
| Campbell Soup | CPB | 302020 | Y | Y | 8.2 | 2.8% |
| Conagra Brands | CAG | 302020 | Y | Y | 16.7 | 2.5% |
| General Mills | GIS | 302020 | Y | Y | 32.4 | 3.7% |
| Hershey | HSY | 302020 | Y | Y | 21.8 | 2.1% |
| Hormel Foods | HRL | 302020 | Y | Y | 13.3 | 2.1% |
| JM Smucker | SJM | 302020 | Y | Y | 11.9 | 3.4% |
| Kellogg | K | 302020 | Y | Y | 17.7 | 3.3% |
| Kraft Heinz | KHC* | 302020 | Y | Y | 21.6 | 5.0% |
| Lamb Weston | LW | 302020 | Y | Y | 12.6 | 1.1% |
| McCormick | MKC | 302020 | Y | Y | 21.0 | 1.5% |
| Mondelez International | MDLZ* | 302020 | Y | Y | 79.3 | 2.1% |
| Tyson Foods | TSN | 302020 | Y | Y | 26.9 | 1.8% |
| <i>Altria Group</i> | <i>MO</i> | <i>302030</i> | <i>Y</i> | <i>Y</i> | <i>93.2</i> | <i>6.7%</i> |
| <i>Philip Morris</i> | <i>PM</i> | <i>302030</i> | <i>Y</i> | <i>Y</i> | <i>132.4</i> | <i>5.5%</i> |

Table A2: United Kingdom

This table contains the names, tickers, industry classification, index membership, market capitalization, and dividend yield of the U.K. tobacco stocks and their peers. GICS industry classification: 302010 Beverages, 302020 Food Products, 302030 Tobacco. Index membership in the MSCI World Index and FTSE 100 Index is indicated with Y. The market cap is in USD billions, measured at 31 December 2019. The dividend yield is in percentage per year over 2019.

| Name | Ticker | GICS | MSCI World | FTSE 100 | Mcap | Div yield |
|---------------------------------|-------------|---------------|------------|----------|-------------|--------------|
| Coca-Cola Hellenic | CCH | 302010 | Y | Y | 6.8 | 1.9% |
| Diageo | DGE | 302010 | Y | Y | 99.2 | 2.1% |
| Associated British Foods | ABF | 302020 | Y | Y | 12.3 | 1.8% |
| <i>British American Tobacco</i> | <i>BATS</i> | <i>302030</i> | <i>Y</i> | <i>Y</i> | <i>98.2</i> | <i>6.3%</i> |
| <i>Imperial Brands</i> | <i>IMB</i> | <i>302030</i> | <i>Y</i> | <i>Y</i> | <i>23.4</i> | <i>10.7%</i> |

Table A3: Japan

This table contains the names, tickers, industry classification, index membership, market capitalization, and dividend yield of the U.K. tobacco stocks and their peers. GICS industry classification: 302010 Beverages, 302020 Food Products, 302030 Tobacco. Index membership in the MSCI World Index and Nikkei Index is indicated with Y. The market cap is in USD billions, measured at 31 December 2019. The dividend yield is in percentage per year over 2019.

| Name | Ticker | GICS | MSCI World | Nikkei | Mcap | Div yield |
|--------------------------|-------------|---------------|------------|----------|-------------|-------------|
| Asahi Breweries | 2502 | 302010 | Y | Y | 16.6 | 2.1% |
| Coca-Cola Bottlers Japan | 2579 | 302010 | Y | N | 3.2 | 1.8% |
| Kirin | 2503 | 302010 | Y | Y | 18.1 | 2.4% |
| Suntory Beverage & Food | 2587 | 302010 | Y | N | 5.8 | 1.7% |
| Ajinomoto | 2802 | 302020 | Y | Y | 7.3 | 1.8% |
| Calbee | 2229 | 302020 | Y | N | 2.6 | 1.4% |
| Kikkoman | 2801 | 302020 | Y | Y | 7.2 | 0.8% |
| Meiji | 2269 | 302020 | Y | Y | 7.8 | 2.0% |
| Nippon Ham Foods | 2282 | 302020 | Y | Y | 3.4 | 2.0% |
| Nisshin Seifun | 2002 | 302020 | Y | Y | 3.5 | 1.7% |
| Nissin Foods | 2897 | 302020 | Y | N | 4.7 | 1.4% |
| Toyo Suisan Kaisha | 2875 | 302020 | Y | N | 3.8 | 1.7% |
| Yakult Honsha | 2267 | 302020 | Y | N | 6.6 | 0.8% |
| Yamazaki Baking | 2212 | 302020 | Y | N | 2.2 | 1.0% |
| <i>Japan Tobacco</i> | <i>2914</i> | <i>302030</i> | <i>Y</i> | <i>Y</i> | <i>26.9</i> | <i>6.2%</i> |

Table A4: Sweden

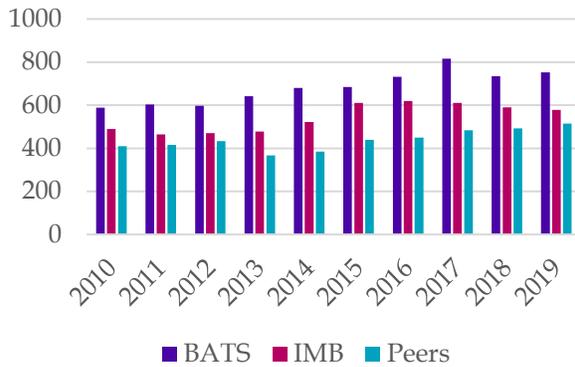
This table contains the names, tickers, industry classification, index membership, market capitalization, and dividend yield of the U.K. tobacco stocks and their peers. GICS industry classification: 301010 Food & Staples Retailing, 302010 Beverages, 302020 Food Products, 302030 Tobacco, 303010 Household Products. Index membership in the MSCI World Index and OMX 30 Index is indicated with Y. In this column it is also mentioned if the peer is not from Sweden, but from another Scandinavian country. The market cap is in USD billions, measured at 31 December 2019. The dividend yield is in percentage per year over 2019.

| Name | Ticker | GICS | MSCI World | OMX 30 | Mcap | Div yield |
|----------------------|---------|--------|------------|---------|------|-----------|
| ICA | ICAA | 301010 | Y | N | 4.2 | 2.6% |
| Carlsberg | CARLB | 302010 | Y | Denmark | 16.0 | 1.8% |
| Mowi | MOWI | 302020 | Y | Norway | 11.4 | 4.6% |
| Orkla | ORK | 302020 | Y | Norway | 7.6 | 2.9% |
| <i>Swedish Match</i> | SWMA | 302030 | Y | Y | 8.8 | 2.2% |
| Essity | ESSITYB | 303010 | Y | Y | 19.6 | 1.9% |

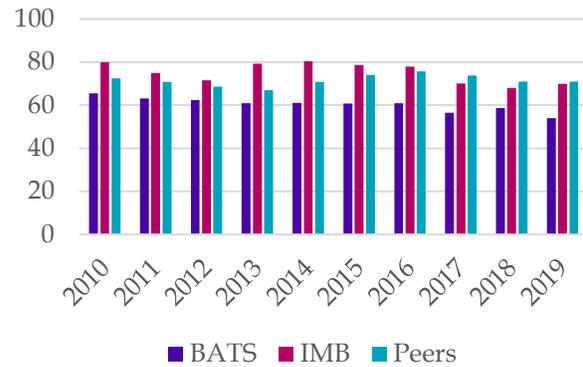
Appendix B

Figure B1: Ownership trends for tobacco stocks outside the U.S.

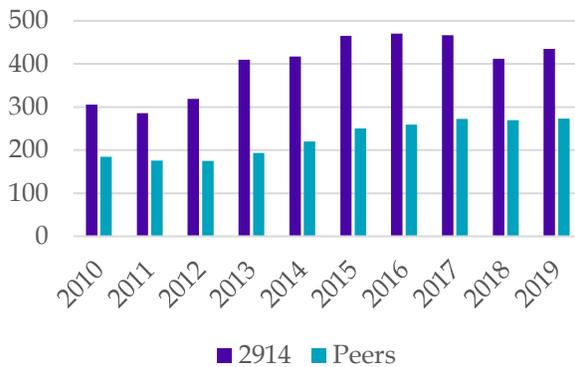
Panel A: U.K. number of owners



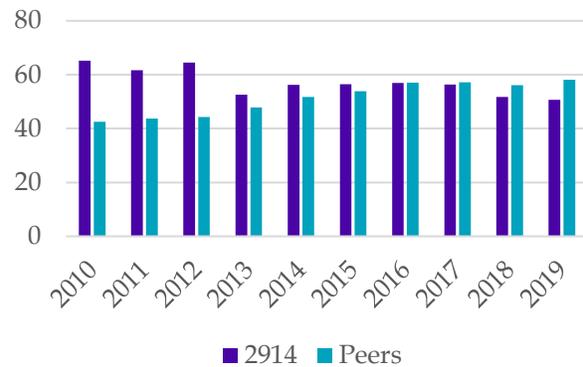
Panel B: U.K. total ownership



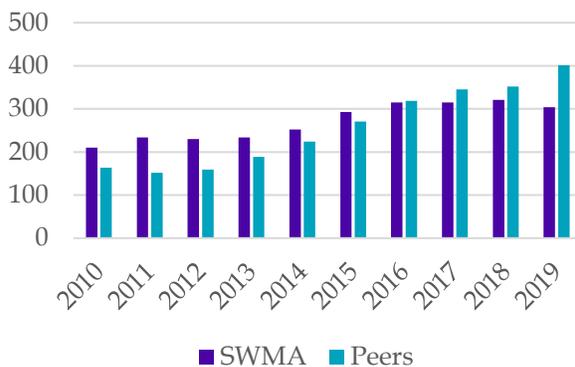
Panel C: Japan number of owners



Panel D: Japan total ownership



Panel E: Sweden number of owners



Panel F: Sweden total ownership

