The Valuation of Economic Earnings and Income Shifting of U.S. Multinationals in Domestic and Foreign Jurisdictions

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Abstract

I study U.S. multinationals' economic earnings and income shifting across their domestic and foreign jurisdictions. This study develops the concept of economic earnings, measures economic and shifted earnings, tests their market valuation, and tests differences in valuation across investor types. I conceptualize economic earnings as domestic and foreign earnings created in these jurisdictions. I then measure domestic and foreign economic earnings by estimating (i) country-specific locations and (ii) country-specific economic earnings for U.S. multinationals. Income shifting is the difference between reported and economic earnings. For the valuation tests, I decompose total earnings into, first, domestic and foreign economic earnings and then into shifted and resident earnings. I find that domestic and foreign economic earnings are value-relevant and valued relatively differently than domestic and foreign reported earnings. I fail to find evidence that income shifted into and out of the U.S. are value-relevant. I find that more sophisticated investors are associated with the valuation of income shifting and find, contrary to my predictions, that less sophisticated investors recognize underlying economic earnings components.

Introduction

This study examines whether investors recognize that domestic and foreign earnings reported on U.S. multinational corporations' (MNCs') financial statements comprise income generated in the jurisdiction minus or plus income shifted to or from other jurisdictions. U.S. MNCs shift income into and out of the U.S. to benefit from differential tax rates and other tax incentives (Collins, Kemsley, & Lang, 1998; Klassen & Laplante, 2012a). The amount and direction of income shifted is not reported or disclosed, and income shifted is legitimately reported as belonging to the jurisdiction it is shifted. As a result of income shifting, the distribution of domestic and foreign income reported by U.S. MNCs is different from the economic results generated in domestic and foreign locations. Do investors impound information about these economic results and tax-motivated income shifting into prices? This study examines the research question by measuring these undisclosed earnings components and testing their value-relevance.

In this study, "reported earnings" refers to domestic and foreign earnings required by the Securities and Exchange Commission's Regulation 210.4-08(h) – General Notes to Financial Statements – Income Tax Expense. "Economic earnings" refers to earnings resulting from operations (see Bhattacharya, Daouk, & Welker, 2003; Teoh & Wong, 1993; Verrecchia, 1986). This study further specifies the location of economic earnings. Earnings produced domestically in the U.S. are "domestic economic earnings," and earnings produced in foreign non-U.S. jurisdictions are "foreign economic earnings." Finally, the term "income shifting" refers to income shifted between jurisdictions to benefit from tax incentives and lower tax rates (see Collins et al., 1998; Petroni & Shackelford, 1999).

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Identifying whether investors recognize unreported economic earnings and income shifted is important for two reasons: (i) standard-setters focus on investors in their aim to improve firms' disclosures, and (ii) studies view investors' ability to recognize these components differently. The FASB has amended segment reporting and foreign income disclosures with a focus on providing information to investors (see Boatsman, Behn, & Patz, 1993; Thomas, 2000). In a project statement last updated October 27, 2021, the FASB is revisiting segment reporting requirements and inviting comments from investors (FASB, 2021). Second, while the tax accounting literature shows that investors recognize undisclosed tax liabilities and unreported foreign earnings components (Collins, Hand, & Shackelford, 2001; Oler, Shevlin, & Wilson, 2007; Laplante & Nesbitt, 2017), the financial accounting literature attributes the lower valuation of foreign earnings to investor inability (Callen, Hope, & Segal, 2005) and discusses improving disclosures (Boatsman et al., 1993; Thomas, 2000). Therefore, evidence that investors can recognize unreported earnings components is relevant to current standard-setting and reconciles views in the literature.

I examine investors' valuation of economic earnings and income shifting by measuring these earnings components and then testing the market's valuation of these components. First, I develop two earnings decomposition models, following the earnings model developed by Bodnar and Weintrop (1997). Bodnar and Weintrop decompose total earnings into domestic and foreign reported earnings, while I decompose total earnings into domestic and foreign economic earnings and further decompose jurisdiction-specific earnings into resident and shifted components. Next, I estimate domestic and foreign economic earnings of a U.S. MNC and calculate income shifting as the difference between reported and economic earnings. I hypothesize the value-relevance of each of the economic earnings and income shifting components and regress a firm's annual

cumulative abnormal returns on these components to test value-relevance. To reconcile mixed and untested assumptions about investor sophistication in the literature, I examine how the valuations of economic earnings and income shifting vary by investor sophistication.

I find that the economic earnings components are value-relevant, are valued relatively differently than the reported earnings components, and are recognized by less sophisticated investors. In support of my hypotheses, I find that the domestic and foreign economic earnings measured in this study are value-relevant. I also replicate valuation tests of reported earnings and find, consistent with prior studies (Bodnar & Weintrop, 1997; Christophe, 2002; Hope, Kang, Thomas, & Vasvari, 2008, 2009), that foreign reported earnings is valued significantly higher than the domestic component. In contrast, I find that domestic economic earnings is valued significantly higher than foreign economic earnings.

I additionally test whether the valuations of the various earnings components differ by investor sophistication, which I measure using (i) the number of institutional investors and (ii) analyst coverage. In support of the hypotheses, I find that each of the economic earnings components are valued significantly differently by more and less sophisticated investor groups. I also find that more sophisticated investors value each of the reported earnings components significantly differently than less sophisticated investors. Specifically, less sophisticated investors value reported and economic earnings, but more sophisticated investors do not. Therefore, I find that investors recognize domestic and foreign economic earnings, value domestic economic earnings higher, and can estimate these amounts if they are less sophisticated.

I find that the valuation of income shifting components is dependent on investor sophistication and investor sophistication proxy. I do not find evidence that the income shifting

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components are value-relevant, on average. I also do not find evidence that less sophisticated investors recognize income shifting components. However, I find that more sophisticated investors value income shifting and that the direction of shifting valued depends on the sophistication proxy. The high institutional ownership group values income shifted from the foreign jurisdiction, while the high analyst coverage group recognizes income shifted from the domestic jurisdiction.

In addition to these results, I hypothesize significant differences in valuation of the income shifting components between more and less sophisticated investors and find that valuation differences depend on the investor sophistication proxy. I find that high and low institutional ownership groups value the shifting components, domestic and foreign, significantly differently. On the other hand, high and low analyst coverage groups value the domestic components, resident and shifted, significantly differently. Overall, these findings are consistent with institutions having the resources to disentangle foreign information and analysts having an information advantage from focusing on domestic information (Van Nieuwerburgh & Veldkamp, 2009). Therefore, I find that sophisticated investors value income shifting, and that the direction of shifting valued depends on the sophistication proxy.

This study contributes to our understanding of investors' valuation of unreported earnings components, more generally (e.g., Amir & Lev, 1996; Barth, 1991; Sougiannis, 1994). More specifically, this study contributes to the financial and tax accounting literature on foreign earnings valuation. Contributions beyond the scope of this study include a country-level measure of economic earnings and cleaner classifications of segment data. This study provides a distinct measure of income shifting and initial evidence on the valuation of income shifting.

This study produces data and results that have implications for government and tax policy. The country-specific economic earnings, asset, and employee estimates of U.S. subsidiaries provide data to inform tax-specific policy and economic policy. Additionally, the distinction between economic earnings and earnings reported in financial statements and to tax authorities may help governments and tax authorities focus on the underlying components. The result that foreign economic earnings are less value-relevant than U.S. economic earnings suggest policy changes for countries interested in increasing the value-relevance of their jurisdiction's earnings. Moreover, the result that foreign reported earnings are valued relatively higher than domestic reported earnings also inform tax policy.

In this paper, I review the literature on the valuation of foreign and domestic earnings. Next, I develop and present the theoretical model for the decomposition of earnings components and this study's hypotheses. The research design describes the empirical model, measurement of constructs, samples, data sources, and design choices. I also include validity checks of the two new constructs introduced in this study: economic earnings and income shifted measures. Finally, I discuss the results of testing this study's hypotheses and conclude by presenting key findings, limitations of the study, and avenues for future research.

Literature Review

Although viewed collectively as the literature on foreign earnings valuation (see Callen et al., 2005; Christophe 2002), I observe that the financial accounting literature on the valuation of foreign earnings components examines three distinct questions: (i) the value relevance and relative valuation of foreign and domestic earnings components (e.g., Bodnar & Weintrop, 1997), (ii) the usefulness of segment disclosures (e.g., Boatsman et al., 1993), and (iii) the valuation of geographic diversification (e.g., Denis et al., 2002).

First, studies that examine the valuation of domestic and foreign earnings reported in the Notes to the Financial Statements under Rule 4-08(h) consistently show that foreign earnings from this source are valued higher than domestic earnings reported alongside (e.g., Bodnar & Weintrop, 1997; Christophe, 2002; Hope et al. 2008; Hope et al. 2009). However, studies have conducted different analyses, such as partitioning earnings by positive and negative changes (Christophe, 2002), measuring variance contributions (Callen et al., 2005), and controlling for information in analyst forecast revisions and discount rates (Hope & Kang, 2005) that indicate foreign earnings are valued less than domestic earnings.

Second, studies that examine the valuation of foreign information in geographic segment disclosures, under either SFAS 14 or SFAS 131 (e.g., Boatsman et al., 1993; Christophe & Pfeiffer, 2002; Thomas, 2000), produce mixed evidence on both the relative valuation of foreign and domestic components and the usefulness of the disclosure examined. Third, studies examining the valuation impacts of firms' geographic diversification (e.g., Bodnar, Tang, Weintrop, 1997; Denis et al., 2002), measured using geographic segment disclosures, also provide mixed evidence on whether geographic diversification increases or decreases firm value.

Therefore, classifying studies by research question and financial statement source of foreign earnings information indicates that although the valuation of foreign earnings is higher than domestic earnings reported under Rule 4-08(h), examining underlying properties of these earnings reveals exceptions (e.g., Callen et al., 2005; Christophe, 2002; Hope & Kang, 2005).

Boatsman et al. (1993) present risk and persistence as the major reasons for differences in valuation of the foreign earnings and domestic earnings components. The literature argues that the lower valuation of foreign earnings relative to domestic earnings is a natural consequence of dealing with a foreign environment, different exchange rates, business cycles, legislation,

politics, economic growth, and financial reporting affect the valuation of foreign earnings relative to domestic earnings (see Bodnar & Weintrop, 1997; Christophe & Pfeiffer, 2002). Another set of arguments for the lower valuation of foreign earnings is the geographic distance of foreign operations, which increases information asymmetry between investors and management in the domestic jurisdiction and foreign operations and management (Bodnar & Weintrop, 1997; Bodnar et al. 1997; Callen et al., 2005; Christophe, 2002; Denis et al., 2002; Hope et al., 2008, 2009).

On the other hand, Bodnar and Weintrop (1997) argue that foreign earnings may be valued higher than domestic earnings in instances when the U.S. dollar falls below the foreign currency, resulting in a "pure price effect" since exchange rate differences are unforecastable and permanent (Frankel & Rose, 1995). However, Christophe (2002) and Christophe and Pfeiffer (2002) explain that exchange rate effects on foreign earnings valuation stabilized in the 1990s.

A second reason foreign earnings may be valued more than domestic earnings is growth opportunities afforded by new foreign markets and expectations of higher future earnings (see Bodnar & Weintrop, 1997; Christophe 2002). Additionally, foreign operations provide operational flexibility and the opportunity to extract above-market gains by spreading out firm-specific assets to overcome market imperfections (see Bodnar et al., 1997; Denis et al., 2002) and arbitrage institutional restrictions (see Bodnar et al., 1997). Finally, firms' investment in foreign operations adds value to investors and subsequently increases the value of foreign operations since firms can diversify geographically at a lower cost than investors can (see Bodnar et al., 1997; Denis et al., 2002). Therefore, foreign earnings may be valued more than domestic earnings because of exchange rate differences and opportunities to grow and expand.

Studies examining the relative valuation of foreign and domestic earnings generally find that the foreign component is valued higher than the domestic component (e.g., Bodnar & Weintrop, 1997; Christophe, 2002; Hope et al. 2008; Hope et al. 2009) and conduct additional tests to identify the cause of this differential valuation. Among numerous explanations tested, only foreign growth opportunities (Bodnar & Weintrop, 1997; Christophe, 2002) and agency problems (Christophe, 2002) contribute to the higher valuation of foreign earnings.

Although Bodnar and Weintrop (1997) is the only study to directly examine reasons for the higher valuation of the foreign earnings component relative to the domestic earnings component, Christophe (2002) examines reasons for the differential valuation of positive and negative changes in these components and Callen et al. (2005) examine reasons for the differential valuation of the variance of these components, respectively. Other studies in this stream of literature (Hope & Kang, 2005; Hope et al., 2008, 2009) inadvertently rule out additional possible explanations for the differential valuation of these earnings components as a feature of their research design. In conclusion, among the various theoretical arguments for the differential valuation of these components and explanations tested, foreign growth and agency problems affect the differential valuation of foreign and domestic earnings.

Model and Hypothesis Development

Before presenting my model, I define the concepts of economic earnings and income shifted in this study. I define economic earnings as earnings created within a specific jurisdiction, using resources in that jurisdiction. This definition is consistent with Hines and Rice (1994), who define economic earnings as those created by capital and labor in a given jurisdiction. I view the difference between economic earnings created in a jurisdiction and earnings reported for that

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jurisdiction, following Rule 4-08(h), as income shifting. More precisely, this residual amount captures income shifted through financial activities for tax purposes.

Prior studies provide evidence of the value-relevance of domestic and foreign reported earnings and the differential valuation of the two components (e.g., Bodnar & Weintrop, 1997; Christophe, 2002). These studies argue that jurisdictions' economic differences affect the differential valuation of domestic and foreign earnings (e.g., Boatsman et al., 1993; Bodnar & Weintrop, 1997). However, these studies measure economic earnings for a specific jurisdiction using earnings reported for that jurisdiction, which is a mix of economic earnings from domestic and foreign jurisdictions. While a subsidiary's economic profit is a function of capital inputs, labor inputs, and productivity (see Hines & Rice, 1994), the tax incentive to shift income between subsidiaries arises from different tax regulations across jurisdictions (Klassen, Lang, & Wolfson 1993; Klassen & Laplante 2012a; Mills & Newberry, 2004).

Income shifting between jurisdictions is motivated by different tax rates, government-provided incentives, and tax regulation (Altshuler & Grubert 2006; Bernard, Jensen, & Schott, 2006; De Waegenaere, Sansing, & Wielhouwer, 2006; Klassen et al., 1993; Klassen & Laplante 2012b; Markle, 2015). I assume that shifting earnings between foreign and domestic jurisdictions is motivated by the tax differential between these jurisdictions. Therefore, I define tax-motivated income shifting in this study as the difference between economic earnings created in a jurisdiction and earnings reported for that jurisdiction under Rule 4-08(h).

MNCs may shift income through financial activities, such as transfer pricing, or real activities, such as relocating assets and employees (Clausing, 2003; Grubert, 2003). MNCs use financial activities such as intercompany transfers and intercompany debt to shift income between locations (Clausing, 2003; Grubert & Mutti, 1991; Harris, Morck, Slemrod, & Yeung,

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1991; Jacob, 1996; Mintz & Smart, 2004). Additionally, MNCs may shift real activities by relocating capital and labor, thereby shifting income produced by these real activities. MNCs may also shift income by strategically locating more flexible expenses related to interest, R&D, advertising, royalties, and intangibles (Clausing, 2003; Harris, 1993).

This study conceptualizes and measures economic earnings and income shifted in the short term for a firm's fiscal year. Short-term strategies exclude shifting income through relocating assets and operations, which are long-term income shifting strategies that remain stable over time. Therefore, I define income shifted as those amounts that are relocated through financial activities, consistent with De Simone, Mills, and Stomberg (2019), who define income shifting as "changing the location of where income is reported through intercompany payments" (p. 695). However, while De Simone et al.'s (2019) definition of income shifting includes income shifted for non-tax reasons due to their measurement approach, I expect my "residual approach" of measuring income shifted to capture income shifted for tax purposes.

Since the original studies on the valuation of foreign earnings test the valuation of reported earnings (e.g., Bodnar & Weintrop, 1997; Christophe, 2002), it is unclear whether their valuation results are due to investors' valuation of (a) reported earnings, (b) the underlying economic properties of earnings highlighted by these studies, or (c) tax strategies employed by MNCs. Therefore, I decompose total earnings into economic earnings and income shifted components to examine the valuation of foreign earnings more precisely.

In the foreign earnings valuation literature, income reported as domestic or foreign is assumed to have been produced in those jurisdictions. Bodnar and Weintrop (1997) modify a basic model of the value (V) of a firm i at time t by decomposing total earnings (*TotalNI*) into domestic (*DomNI*) and foreign (*ForNI*) earnings components:

$$\Delta V_{i,t} = \alpha_o + \alpha_1 \Delta TotalNI + \varepsilon_{i,t} \tag{3.1}$$

$$\Delta V_{i,t} = \beta_o + \beta_1 \Delta DomNI_{i,t} + \beta_2 \Delta ForNI_{i,t} + \varepsilon_{i,t} \tag{3.2}$$

However, domestic and foreign income reported in the financial statements comprise earnings produced in those jurisdictions, and earnings shifted into those jurisdictions. Dyreng and Markle (2016) estimate inbound and outbound income shifting as the association between firms' segment revenues and reported pre-tax domestic and foreign income. Using a similar intuition, I decompose a firm's reported domestic earnings and foreign earnings reported under Rule 4-08(h) into economic earnings and income shifted components.

$$\text{DRepEarnings} = \text{DEconEarnings} \mp \text{IncomeShifted} \tag{3.3a}$$

$$\text{FRepEarnings} = \text{FEconEarnings} \mp \text{IncomeShifted} \tag{3.3b}$$

where DRepEarnings is domestic reported earnings, FRepEarnings is foreign reported earnings, DEconEarnings and FEconEarnings are economic earnings created in the domestic and foreign jurisdictions, respectively, and IncomeShifted represents the amount of income shifted between domestic and foreign jurisdictions.

I further partition reported earnings into four components, each capturing economic and tax differences. I begin by decomposing the conceptual measures of domestic economic earnings and foreign economic earnings:

$$\text{DEconEarnings} = \text{DEcon\_Res} + \text{DShiftOut} \tag{3.4}$$

$$\text{FEconEarnings} = \text{FEcon\_Res} + \text{FShiftOut} \tag{3.5}$$

DEcon_Res is the portion of economic earnings that remains in the domestic jurisdiction, and FEcon_Res is the portion that remains in the foreign jurisdiction. I refer to these components as resident economic earnings. DShiftOut and FShiftOut represent income shifted out of the domestic and foreign jurisdictions, respectively.

Reported earnings exclude the portion of economic earnings that is shifted out and includes earnings shifted into the jurisdiction.

$$DRepEarnings = DEconEarnings - DShiftOut + FShiftOut \tag{3.6}$$

$$FRepEarnings = FEconEarnings - FShiftOut + DShiftOut \tag{3.7}$$

I assume that MNCs shift income in one direction, between domestic and foreign jurisdictions, because the U.S.' worldwide tax system creates an incentive to shift between these jurisdictions. Under the U.S. tax system, earnings reported domestically are taxed at the U.S. statutory tax rate, while earnings reported as foreign are taxed collectively at an average foreign tax rate. The difference between the two tax rates creates an incentive for firms to shift income from the lower rate jurisdiction to the higher rate jurisdiction. I simplify the disaggregation of reported earnings in Equations (3.6) and (3.7) to represent one-way shifting and re-write Equations (3.6) and (3.7) as:

$$DRepEarnings = DEcon\_Res + FShiftOut \tag{3.8}$$

$$FRepEarnings = FEcon\_Res + DShiftOut \tag{3.9}$$

Using the relations above, the decompositions of total earnings into (i) economic earnings and (ii) income shifted are the following:

$$Total\ Earnings = DEconEarnings + FEconEarnings \tag{3.10}$$

$$Total\ Earnings = DEcon\_Res + DShiftOut + FEcon\_Res + FShiftOut \tag{3.11}$$

I arrive at valuation models using these measures by substituting the economic earnings measures presented in Equation (3.10) in the valuation Equation (3.2):

$$\Delta V_{i,t} = \gamma_o + \gamma_1 \Delta DEconEarnings_{i,t} + \gamma_2 \Delta FEconEarnings_{i,t} + \varepsilon_{i,t} \tag{3.12}$$

I use this model to test the value-relevance of domestic and foreign economic earnings.

Next, I substitute the portions of economic earnings that remain and income shifted components, presented in Equation (3.11), in the valuation Equation (3.2):

$$\Delta V_{i,t} = \delta_o + \delta_1 \Delta DEcon\_Res_{i,t} + \delta_2 \Delta DShiftOut_{i,t} +$$

$$\delta_3 \Delta FEcon\_Res_{i,t} + \delta_4 \Delta FShiftOut_{i,t} + \varepsilon_{i,t} \tag{3.13}$$

I use this model to test the value-relevance of the income shifted components of domestic and foreign reported earnings.

Hypothesis Development

I predict that investors recognize economic earnings in domestic and foreign jurisdictions because earnings created in a jurisdiction reflect the current and future value of earnings associated with that jurisdiction. Additionally, although economic values are not reported, I expect investors to recognize these amounts as studies provide evidence that investors value unrecognized accounting information (e.g., Barth, 1991; Landsman, 1986).

First, I hypothesize that investors recognize the value of economic earnings created domestically. I predict that investors recognize domestic economic earnings because information about these earnings is easily accessible to investors (Duru & Reeb, 2002; Thomas, 1999). Additionally, the home bias literature documents bias in investors' portfolios toward owning stock of firms in their home country rather than foreign firms' equity and attribute it to cognitive bias toward domestic information (French & Porterba, 1991; Kang & Stulz, 1997). More recent home-bias literature, acknowledging easy access to global information in the current information economy, presents that investors make above-market gains by choosing to pay attention to domestic information (Huang, 2015; Van Nieuwerburgh & Veldkamp, 2009). Therefore, since investors are sophisticated in valuing unrecognized amounts and can easily process information

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in the domestic jurisdiction, I predict that investors recognize the underlying component of earnings created in the domestic jurisdiction.

H1a: Domestic economic earnings is value-relevant.

Next, I predict that investors recognize and value economic earnings created in the foreign jurisdiction. Foreign jurisdictions provide risks and opportunities distinct from the domestic environment (Boatsman et al., 1993; Bodnar & Weintrop, 1997). On the one hand, expanding to foreign markets positively affects firm value as foreign markets provide additional growth opportunities for firms once they have grown in the domestic market (Kogut, 1983). They also provide an avenue for firms to diversify and take advantage of market imperfections (Errunza & Senbet, 1981, 1984; Morck & Yeung, 1991). On the other hand, foreign markets increase firms' exposure to risk (Kinney, 1972; Michel & Shaked, 1986). Studies also show that firm value may decrease because of costs associated with information asymmetry between headquarters and foreign subsidiaries (Myerson, 1982; Harris, Kreibel, & Raviv, 1982) and barriers to entry (Bentolila & Bertola, 1990; Dixit, 1989; Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002). Moreover, foreign political and institutional environments affect firm valuation (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002). Therefore, earnings created in a foreign jurisdiction affect firm value, and I predict that investors recognize this amount.

H1b: Foreign economic earnings is value-relevant.

Alternately, either domestic or foreign economic earnings components may not be value-relevant because estimating these underlying values is complex. The complexity of jurisdiction-specific earnings is demonstrated by the motivation behind studies on the valuation of the reported earnings components, which examined the usefulness of disclosure to investors (e.g., Boatsman et al., 1993; Bodnar & Weintrop, 1997; Christophe & Pfeiffer, 2002; Hope et al.,

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2008, 2009; Thomas, 2000). Boatsman et al. (1993) showed that investors valued segment information similarly under SFAS 14, whereas Thomas (2000) showed that segment information is value-relevant after modifying the original model. Thomas (2000) and Christophe and Pfeiffer (2002) demonstrated the usefulness of geographic segment disclosures under SFAS 14, anticipating SFAS 131, which would provide less disaggregated information (see Herrmann & Thomas, 2000). Hope et al. (2008, 2009) further examined the usefulness of geographic segment disclosures under SFAS 131. The motivation behind these studies suggests investors find it complex to value jurisdiction-specific or foreign earnings information, consistent with studies demonstrating the complexity of foreign information (e.g., Duru & Reeb; Thomas, 1999). Therefore, the complexity of estimating this undisclosed information is consistent with the null hypothesis that economic earnings components are not value-relevant.

Next, I predict that income shifted from either the domestic or foreign jurisdictions are value-relevant. I predict that these components are value-relevant because they reflect the jurisdiction's economic earnings properties from which they are shifted out. I also predict income shifted components are value-relevant because they reflect tax savings created by the income shifting strategy (e.g., Collins et al., 1998; Desai & Dharmapala, 2009; Gramlich, Limpaphayom, & Rhee, 2004). Therefore, earnings that are shifted between jurisdictions have additional tax-saving valuation implications compared to economic earnings that remain in their home jurisdictions and different economic properties compared to economic earnings in the jurisdiction to which they are shifted. Although I do not formally predict this relation, I expect that shifted earnings components are valued differently than economic earnings components.

I argue that investors estimate the amount of income shifted between domestic and foreign jurisdictions because of its tax relevance, although this amount is not disclosed. Studies

show that investors value tax-related amounts such as taxable income (Ayers, Jiang, & Laplante, 2009), deferred tax liabilities (Amir, Kirschenheiter, & Willard, 1997; Givoly & Hayn, 1992), deferred tax assets, valuation allowances, and adjustments for tax law changes (Ayers, 1998). The literature also shows that investors can infer more complex tax values related to foreign jurisdictions, namely PRE and the associated deferred tax liability (e.g., Bauman & Shaw, 2008; Collins et al., 2001; Oler et al., 2007), trapped cash (Laplante & Nesbitt, 2017), and tax-related foreign cash (Campbell et al., 2014; Chen, 2015; Harford et al., 2017). Therefore, I expect that components of earnings that are shifted out of either the domestic or foreign jurisdiction are value-relevant.

H1c: Income shifted out of the domestic jurisdiction is value-relevant.

H1d: Income shifted into the domestic jurisdiction is value-relevant.

Alternately, investors may not be able to recognize income shifted. In general, investors may have difficulty valuing income shifting activities because the amounts and transactions are not disclosed or publicly available. For instance, De Simone et al. (2019) use confidential IRS audit data to examine income shifting transactions of U.S. MNCs. Income shifting activities may also be complex to estimate, similar to amounts of deferred tax liabilities (see Ohlson & Penman, 1992). These earnings components may not be value-relevant is that obtaining relevant information is costly to investors. Plumlee (2003) provides evidence that analysts do not incorporate more complex information in their estimates of changes in firms' effective tax rates because the costs of incorporating this information outweigh the benefits of providing more accurate forecasts. Bauman and Shaw (2008) point out that although managers take advantage of changes in the effective tax rate to manage earnings in the fourth quarter (Dhaliwal, Gleason, & Mills, 2004), investors price this change in effective tax rates (Schmidt, 2006). Additionally,

although tax accounting studies provide evidence of investors' estimating and valuing potential repatriation of foreign cash and foreign cash amounts, Nessa et al. (2017) show that investors' valuation of foreign earnings depends on the average foreign tax rate rather than the likelihood of firm's repatriating foreign earnings. Therefore, investors may not be sufficiently sophisticated to recognize income shifting activities and value them accordingly.

I also test whether the valuations of each of the domestic and foreign economic earning and income shifting components vary by different levels of institutional investment. I expect that the valuations of economic and shifted earnings components are not significantly different from zero for lower levels of investor sophistication. Moreover, I expect that higher levels of investor sophistication are associated with non-zero valuations of these components. Since the literature presents the possibilities of positive and negative valuations, I predict that valuations by the more sophisticated investor group are significantly different than the valuations I expect for the less sophisticated investor group. I state hypotheses for the individual tests as follows:

> H2(a-d): The relation between an individual earnings component and firm value is
> significantly different for higher levels of institutional investment relative to lower levels
> of institutional investment.[2]

Moreover, analysts as information intermediaries may also contribute to the recognition and valuation of economic earnings and tax-motivated income shifting. Analysts' information gathering goes beyond information provided by firms publicly (see Brown, Richardson, & Schwager, 1987; Kross, Ro, & Schroeder, 1990); as a result, analysts may incorporate information about economic earnings and tax-motivated income shifting in their forecasts. Therefore, I expect that the larger presence of analysts, and subsequently information produced

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[2] H2(a) tests domestic economic earnings, H2(b) tests foreign economic earnings, H2(c) tests domestic economic earnings shifted out of the U.S. and H2(d) tests foreign economic earnings shifted out of the U.S.

by analysts, better informs the market and leads to the recognition of underlying economic and shifted earnings components.

I also test whether the larger presence of analysts affects the valuation of the economic earnings and shifted earnings components. While the institutional ownership tests distinguish between more and less sophisticated investors, testing differences in analyst coverage distinguishes between firms having more and less analyst following, and consequently, poorer or richer information environments. I state hypotheses for the individual tests as follows:

H2(e-h): The relation between an individual earnings component and firm value is significantly different for higher levels of analyst coverage relative to lower levels of analyst coverage.[3]

Alternately, the literature on the valuation of foreign and tax earnings components provides arguments to support the null hypothesis that economic and shifted components are not valued differently where there are more sophisticated investors or more information. While the financial accounting literature argues that foreign information is complex to estimate (e.g., Boatsman et al., 1993; Bodnar & Weintrop, 1997), the tax accounting literature presents the complexity of foreign taxation (e.g., Collins et al., 2001; Oler et al., 2007). Additionally, studies on international tax planning present that U.S. MNCs set up complex organizational structures to obfuscate tax planning and benefit from different tax regimes (e.g., Collins & Shackelford, 1997; Desai & Dharmapala, 2006; Desai & Dharmapala, 2009). These complex organizational structures obscure information that institutional investors or analysts use to estimate jurisdiction-specific economic earnings or tax-motivated income shifting. Thus, sophisticated investors and analysts may find foreign jurisdiction-specific economic earnings and tax-motivated income

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[3] H2(e) tests domestic economic earnings, H2(f) tests foreign economic earnings, H2(g) tests domestic economic earnings shifted out of the U.S. and H2(h) tests foreign economic earnings shifted out of the U.S.

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shifting complex to estimate, and these specific components may not be associated with returns. These arguments support the null hypotheses H2a-h.

Research Design

Empirical Model. Following Bodnar and Weintrop (1997), I use a long window returns regression to measure the association between unexpected earnings components and abnormal returns. To demonstrate the reliability of results for my sample and time period, I first test the coefficients on the original returns-earnings model by Bodnar and Weintrop:

$$CAR_{i,t} = \alpha_o + \alpha_1 \Delta TEPS/P_{i,t} + \varepsilon_{i,t} \tag{4.1}$$

$$CAR_{i,t} = \beta_o + \beta_1 \Delta DEPS/P_{i,t} + \beta_2 \Delta FEPS/P_{i,t} + \varepsilon_{i,t} \tag{4.2}$$

where:

$CAR_{i,t}$ is the annual change in a firm i's cumulative abnormal return, calculated using a market model, over a 12-month period: 9 months prior to the end of year t and 3 months after the beginning of the year $t+1$;

$\Delta TEPS/P_{i,t}$ is the change in total earnings per share (epspx) from fiscal year t-1 to fiscal year t, scaled by price at the end of the first quarter of fiscal year t-1;

$\Delta DEPS/P_{i,t}$ is firm i's annual change in domestic reported earnings per share scaled by price at the end of the first quarter of fiscal year t-1. Domestic earnings per share is the difference between pre-tax domestic income (pidom) and domestic income taxes (txt - txfor), scaled by common shares outstanding (cshpri);

$\Delta FEPS/P_{i,t}$ is firm i's annual change in foreign reported earnings per share scaled by price at the end of the first quarter of fiscal year t-1. Foreign earnings per share is the difference between pre-tax foreign income (pifo) and foreign income taxes (txfor), scaled by common shares outstanding (cshpri);

α_o and β_o represent the constants and $\varepsilon_{i,t}$ is the error term.

I use the following empirical model to test the value-relevance of domestic and foreign economic earnings components:

$$CAR_{i,t} = \gamma_o + \gamma_1 \Delta DEEPS/P_{i,t} + \gamma_2 \Delta FEEPS/P_{i,t} + \varepsilon_{i,t} \tag{4.3}$$

where:

$\Delta DEEPS/P_{i,t}$ is firm i's annual change in domestic economic earnings per share scaled by price at the end of the first quarter of fiscal year t-1. Domestic economic earnings is estimated using the procedure described in the following section, Section 4.3, and is scaled by common shares outstanding (cshpri) to get per share values;

$\Delta FEEPS/P_{i,t}$ is firm i's annual change in foreign economic earnings per share scaled by price at the end of the first quarter of fiscal year t-1. Foreign economic earnings is estimated using the procedure described in the following section, Section 4.3, and is scaled by common shares outstanding (cshpri) to get per share values;

γ_o is the constant and $\varepsilon_{i,t}$ is the error term.

use the following empirical model to test the value-relevance of income shifted out of and into the domestic jurisdiction:

$$CAR_{i,t} = \delta_o + \delta_1 \Delta DEcon\_Res_{i,t} + \delta_2 \Delta DShiftOut_{i,t} +$$
$$\delta_3 \Delta FEcon\_Res_{i,t} + \delta_4 \Delta FShiftOut_{i,t} + \varepsilon_{i,t} \tag{4.4}$$

where:

$\Delta DEcon\_Res$ is the annual change in the portion of firm i's domestic economic earnings that remain in the domestic jurisdiction, calculated per share, and scaled by price at the end of the first quarter of fiscal year t-1;

$\Delta DShiftOut$ is the annual change in the portion of firm i's domestic economic earnings that are

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shifted out of the domestic jurisdiction, calculated per share, and scaled by price at the end of the first quarter of fiscal year *t-1*;

$\Delta FEcon\_Res$ is the annual change in the portion of firm *i*'s foreign economic earnings that remain in the foreign jurisdiction, calculated per share, and scaled by price at the end of the first quarter of fiscal year *t-1*;

$\Delta FShiftOut$ is the annual change in the portion of firm *i*'s foreign economic earnings per that are shifted into the domestic jurisdiction, calculated per share, and scaled by price at the end of the first quarter of fiscal year *t-1*;

δ_o is the constant and $\varepsilon_{i,t}$ is the error term.

Domestic and foreign economic earnings that remain in their respective jurisdictions are calculated as the difference between the jurisdiction's economic earnings, and economic earnings shifted out of the jurisdiction.

Estimating Domestic and Foreign Economic Earnings. This section describes how I measure domestic and foreign economic earnings, which are not observable or reported by firms. U.S. MNCs report consolidated earnings and disaggregate earnings by domestic and foreign jurisdictions following requirements in SEC Regulation 210.4-08(h) – General Notes to the Financial Statements – Income Tax Expense. Although Rule 4-08(h) provides broad domestic and foreign classifications, geographic segment reporting under ASC 280-10-50 provides an additional source of information on firms' asset locations and customer revenue locations. I expect that investors infer earnings for more specific jurisdictions than "domestic" and "foreign" with the help of information in geographic segment disclosures. I also expect that investors use other publicly available information to estimate undisclosed economic earnings in these locations. Some sources of this information include country-specific information such as GDP, population, education levels, political stability, economic indices, and qualitative information in news reports, conference calls, and earnings of other firms operating in these

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regions. For this study, I rely on publicly available information in the financial statements of two samples of firms: the main sample of U.S. MNCs for which I estimate economic earnings and a sample of domestic-only firms, which operate in a single country and therefore report domestic-only economic earnings. I also include country, industry, and year fixed effects to capture other sources of information.

I first estimate U.S. MNCs' economic earnings by country since I expect that country-specific factors affect firms' earning potential in a country. I then aggregate country-level earnings to calculate foreign jurisdiction economic earnings. I estimate economic earnings for U.S. MNCs' subsidiaries using a sample of domestic-only firms in that country. I assume that firms in a given country, within a specific industry, and in a given year, perform similarly. Further, I assume that subsidiaries of U.S. MNCs and domestic-only firms in a given country face the same political environment, regulatory environment, and other economic conditions specific to their location. Additionally, neither organizational status constrains the resources, assets, or employee pool available to either type of organization. For instance, domestic-only firms are not constrained by their domestic-only status in hiring labor or sourcing assets from outside the country. Therefore, I expect that the productivity function of a U.S. MNC's subsidiary is, on average, the same as the productivity function of domestic-only firms operating in the same country.

I use a sample of domestic-only firms across 81 countries to estimate domestic and foreign economic earnings of a U.S. MNC. I list these countries along with their ISO country codes in Appendix A and use the ISO country codes to reference countries in the following Appendices. I estimate the country-specific location of a U.S. MNC's subsidiaries using geographic segment data and describe this process below. For each country, I compare the number of MNC subsidiaries and number of domestic-only firms, and mean and median values assets and employees between the two samples in Appendix A. To provide large sample

comparisons, the observations in this Appendix are not the observations in the final regression sample.

I compare the large sample, closest to the population, of domestic-only firms to U.S. MNC subsidiaries to provide evidence on their comparability. Mean asset values are significantly different in 33 out of 81 countries: 17 at the 1% level, 7 at the 5% level, and 9 at the 10% level. Mean employee values are significantly different in 46 out of 81 countries: 27 at the 1% level, 10 at the 5% level, and 9 at the 10% level. Differences in median values of assets and employees between MNC subsidiaries and domestic-only firms are significantly different in more countries. Median asset values are significantly different in 75 of 81 countries: 72 at the 1% level and 3 at the 5% level. Median employee values are significantly different in 72 countries: 66 at the 1% level, 5 at the 5% level, and 1 at the 10% level.

Although it appears that the two samples are dissimilar, a mean test of differences tests the one-directional hypothesis that mean values for the domestic sample are greater than mean values for the MNC subsidiary sample. In 30 out of 81 countries, mean asset values are significantly greater for domestic-only firms than MNC subsidiaries. In 13 out of 81 countries, mean asset values are significantly smaller for domestic-only firms than MNC subsidiaries. Mean differences in employee values are more balanced between domestic-only firms and MNC subsidiaries. Compared to U.S. MNC subsidiaries, domestic-only firms have higher means for the number of employees in 28 countries and lower means for the number of employees in 29 countries. Therefore, although mean values of assets and employees are significantly different between samples in approximately 41% and 57% of countries, respectively, it does not appear that U.S. MNCs are larger, on average.

I use geographic segment data provided by Compustat's Historical Segments database to identify U.S. MNCs' country-specific locations. Due to database inconsistencies in the classification of geographic segments and the classification of domestic and foreign segments, I do not rely on Compustat's classification of geographic segments (stype) or its domestic/foreign identifier (geotp). Instead, I rely on the segment name (snms), reported by Compustat, to identify geographic segments and then classify these segments as domestic or foreign. I perform two major transformations on the segment data in Compustat to overcome the two inconsistencies: (i) identifying geographic segments, and (ii) matching geographic segment names to specific countries.

I take the following steps to measure domestic and foreign economic earnings of a U.S. MNC: I (i) identify country-specific locations of U.S. MNCs, (ii) allocate firm assets and employees across these countries, (iii) estimate U.S. MNC productivity by country, (iv) calculate domestic and foreign economic earnings proxies, (v) distribute net income over proportions of the economic earnings proxies, and finally (vi) transform economic earnings components of net income to the regression variables presented in Equations (4.3) and (4.4). Appendix E illustrates this procedure.

Sample and Data. The population of interest to test this study's hypotheses is U.S. MNCs. The sample period for this study spans 20 fiscal years, from 1998 to 2018, starting fiscal years beginning December 15, 1997, the first year SFAS-131 (now ASC 280-10-50) was implemented.[4] The sample selection procedure is outlined in Table 1.

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[4] I re-examine samples excluding fiscal years ending (i) 2018 and (ii) 2017 and 2018 because of The Tax Cuts and Jobs Act of 2017, which affects the U.S. corporate tax rate, and the financial crisis of 2018. I find that the results of the tests of Hypotheses H1a-d and H2a-h, presented in Tables 9-14, are robust to excluding these fiscal years.

Table 1 Panel A outlines the selection procedure from the Compustat North America database, which provides firm-level data for the main sample of U.S. MNCs. Table 1 Panel B lists the selection criteria that I apply to geographic segment data available in Compustat's Historical Segments database.

Table 2 provides a breakdown of the sample of U.S. MNCs by the Fama-French 48 industry classification in Panel A. Table 2 Panel B provides an annual breakdown of the sample by fiscal year. Table 3 presents descriptive statistics for the sample of MNCs in Panel A. The mean (median) asset value for the sample is 8,072 million USD (806.36 million USD), and the mean (median) market value is 6,283 million USD (826 million USD). The firms in the sample employ on average 15,062 employees and a median of 2,938 employees. Sales for the sample have a mean (median) of 4,694.98 million USD (765.79 million USD). The mean (median) values of pre-tax income and net income are 354.93 million USD (34.43 million USD) and 231.72 million USD (22.67 million USD), respectively.

Table 4 is a Pearson correlation matrix of the regression variables. Each regression variable is statistically significantly related to the other, mostly at the 1% level. The strongest correlations are between the change in total reported earnings and (a) the change in domestic reported earnings (0.822, $p < 0.01$) and (b) the change in foreign economic earnings (0.701, $p < 0.01$). The change in domestic reported earnings is also highly negatively correlated with the change in domestic shifted earnings (0.6812, $p < 0.01$), and the change in domestic shifted earnings is highly correlated with the change in foreign economic earnings (-0.6869, $p < 0.01$). However, these high correlations do not appear in the same regressions and do not introduce multicollinearity.

Most of the correlations are positive except for the correlations between (a) the change in domestic shifted earnings and most other variables and (b) the change in foreign shifted earnings and the changes in foreign reported and domestic economic earnings. Similar to the correlations between foreign shifted earnings and the components it is unrelated to, domestic shifted earnings is also negatively associated with components it is not related to, that is, the change in domestic reported earnings, the change in foreign economic earnings, and the changes in the resident portions of domestic and foreign earnings. Unlike the other components, domestic shifted earnings is also negatively associated with cumulative abnormal returns and the change in total reported earnings.

Validity Tests. I conduct validity tests of the two new measures developed in this study: (i) the economic earnings measures and (ii) income shifting measures.[5] To test the economics earnings measure, I test the internal and construct validities of the economic earnings measure created in this study. Currently, the literature does not provide comparable measures against which to assess the economic earnings measure created in this study. I work around this issue by testing the validity of my estimation procedure instead of the estimate itself. Next, I test the validity of the income shifting measures created in this study by testing its association with tax avoidance and then comparing it with two existing measures of income shifting in the literature.

I repeat the economic earnings estimation procedure for a sample of domestic-only firms, for which economic earnings equal reported earnings, to assess whether my estimation procedure of country-specific economic earnings produces values close to actual earnings reported by the firm. I use Pearson and Spearman correlations to test the association between the estimated and actual economic earnings measures. Within each country, I randomly select (i) a single firm-year

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[5] The results of the validity tests are untabulated.

observation, (ii) five observations for any firm in any year, and (iii) a time series of observations for a given firm. I find that domestic-only firms' reported earnings are significantly correlated with the economic earnings proxy created in this study and conclude that my estimation procedure produces a measure of economic earnings correlated with reported earnings.

To test the construct validity of the income shifting measure created in this study, I first examine how my measure relates to firms' tax avoidance generally, using various measures for firms' short and long-run cash effective tax rates (ETRs). I use the effective tax rate based on cash tax payments rather than the GAAP ETR, which is based on the income tax expense, because current period tax payments might be more closely associated with tax-motivated income shifting for the current period. I find that, as expected, my single period measure of income shifted out of the U.S. is associated with short-run tax avoidance. Moreover, I do not find evidence that my measure is associated with long-run tax avoidance, consistent with its conceptual definition.

Second, I identify two measures in the literature developed to estimate income shifting for U.S. MNCs: Klassen and Laplante (2012a) and Dyreng and Markle (2016). Conceptually, although my measures overlap with both the Klassen and Laplante measure and the Dyreng and Markle measure, my measure also differs significantly from each of them. I incorporate my measure in their models to (i) provide an association test and (ii) test whether the measures are substitutes or distinct. I find that each of my shifting measures are significantly associated with the multi-period Klassen and Laplante (2012a) measure, as well as the single-period (Collins et al., 1998) and firm-specific (Chen, Hepfer, Quinn, & Wilson, 2018) variations. For the comparison with Dyreng and Markle (2016), I find that outbound shifting for a given firm-year is a decreasing function of total outbound transfers measured by Dyreng and Markle. I also find

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that inbound income shifting captured by my measure is positively associated with total inbound shifting estimated by Dyreng and Markle. Based on the results, I conclude that my measure is associated with both Klassen and Laplante and Dyreng and Markle but captures income shifting distinct from the two measures.

Results

Before I test this study's hypotheses, in a similar vein to studies that followed Bodnar and Weintrop (1997) (e.g., Christophe, 2002; Hope et al., 2008, Hope et al., 2009), I replicate Bodnar and Weintrop's main test of the valuation of domestic and foreign reported earnings. In addition to sampling a different period, my sample selection procedure involves significant design choices that may change base level results. In Table 1 of Appendix G, I elaborate on these specific design choices and present how the valuation coefficients change for incremental design choices differing from the original design.[6]

In testing the valuation of the reported earnings components, I find that the valuation coefficient on the change in domestic reported earnings ($\Delta DEPS/P$), α_1, is 0.516 (p = 0.000) and the valuation coefficient on the change in foreign reported earnings ($\Delta FEPS/P$), α_2, is 0.766 (p = 0.000). The size and significance of these coefficients are similar to the coefficients reported by Bodnar and Weintrop (1997), a coefficient equal to 0.517 (p <0.01) on the change in domestic reported earnings and a coefficient equal to 1.235 (p <0.01) on the change in foreign reported earnings. Subsequent studies that replicate the original test (e.g., Christophe, 2002; Hope & Kang, 2005; Hope et al., 2008, 2009) also find similar coefficients for their different samples and periods examined. They additionally find that the coefficient on the change in foreign reported

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[6] Appendices can be found in my online dissertation document located at http://hdl.handle.net/10012/18073

earnings is larger than the coefficient on the change in domestic reported earnings (see Appendix H Table 1).

Next, I test the difference between coefficients on the domestic and foreign reported earnings variables. Table 5 displays the results from testing the equality of coefficients within each of the specifications. I find that domestic reported earnings are valued significantly lower than foreign reported earnings at the 10% level ($F = 2.89$). I interpret this result to mean that the market views these two components as distinct. The coefficient on the change in foreign reported earnings is also significantly larger than the coefficient on the change in domestic reported earnings in the fixed effects specification ($F = 2.920$, $p = 0.088$). Therefore, the valuation of domestic reported and foreign reported earnings measured for this sample is consistent with results from prior studies.

Bodnar and Weintrop (1997) and Christophe (2002) find that foreign growth opportunities contribute to the relatively higher valuation of foreign reported earnings. Christophe (2002) also finds that agency problems between firms' shareholders and management contribute to a higher penalty by the market on negative foreign earnings changes. However, this study's premise is that reported earnings for a given jurisdiction comprise economic properties from both foreign and domestic jurisdictions due to income shifting activities. Therefore, differences in valuation attributed to jurisdiction-specific economic properties, such as jurisdiction-specific growth opportunities or jurisdiction-related agency problems, are associated with economic earnings components conceptualized in this study rather than reported earnings components.

The difference in the relative valuation of domestic and foreign reported components may be due to other factors. Based on factors described in prior literature, a reporting-related reason

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that may contribute to the different relative valuations of domestic and foreign reported

components is the higher reliability of U.S. GAAP compared to consolidated foreign amounts

(Bartov & Bodnar, 1996). Another contributing factor to the different valuations of domestic and

foreign reported components is the tax rate applied at the level of reported earnings. In the

following tests of hypotheses H1a-d, I disentangle whether the relative valuations of domestic

and foreign earnings are attributable to their economic properties, by testing the value-relevance

of economic earnings components, or to their tax-related attributes, by testing the value-

relevance of domestic and foreign income shifted components.

Hypothesis H1a predicts that domestic economic earnings are value-relevant, and

hypothesis H1b predicts that foreign economic earnings are value-relevant. Testing the value-

relevance of these economic earnings components, I find that firms' annual cumulative abnormal

returns (*CAR*) are positively significantly associated with the change in domestic economic

earnings ($\Delta DEEPS/P$) ($\beta_1 = 0.703$, p = 0.000) and the change in foreign economic earnings

($\Delta FEEPS/P$) ($\beta_2 = 0.473$, p = 0.000). These results indicate that the market recognizes and

values each economic earnings component, supporting hypotheses H1a and H1b. Supporting

evidence for hypotheses H1a and H1b suggests that investors are able to estimate earnings

created in a jurisdiction although earnings are not reported at this level and can recognize the

value of earnings based on where they are created.

Results of the tests of hypotheses H1c and H1d are presented in Table 6. H1c predicts

that the component of domestic economic earnings shifted out is value-relevant. The coefficient

on the change in domestic economic earnings shifted out ($\Delta DShiftOut$) is not significantly

different from zero ($\gamma_2 = -0.114$, p = 0.324), indicating that the domestic shifted earnings

component is not value-relevant. Since the market is able to value the economic earnings

components remaining in a given jurisdiction, I infer that the valuation of domestic income shifted is not due to the market's inability to estimate the shifted component.

Failing to show the relevance of domestic shifted earnings is not consistent with a tax explanation since income shifted to the lower-tax foreign jurisdiction should be valued for the associated tax benefit. Column (1) of Table 6 Panel B shows that the domestic economic component that is shifted ($\Delta DShiftOut$) is significantly different, at the 1% level, than both the resident domestic economic component ($\Delta DEcon\_Res$), with which it shares economic properties, and the resident foreign economic component ($\Delta FEcon\_Res$), with which it shares tax-reporting properties. Therefore, the value irrelevance of the domestic shifted earnings component is unlikely due to the domestic jurisdiction's economic properties or tax benefits associated with the foreign jurisdiction. Measurement error in the income shifting estimates may also bias the coefficients toward zero.

The relatively lower coefficient on domestic shifted earnings is likely associated with higher risk or lower reinvestment potential of these earnings in the foreign destination jurisdiction. Domestically created shifted earnings may face lower economic potential in foreign jurisdictions because foreign markets may be saturated and reinvestment opportunities may be limited to financial assets, which can destroy firm value due to its propensity to be trapped abroad (see Bryant-Kutcher et al., 2008). Therefore, domestic shifted earnings may not contribute to firm value because of the lack of reinvestment potential in the foreign jurisdiction.

H1d predicts the value-relevance of the portion of foreign economic earnings shifted out. I find that the coefficient on the change in foreign economic earnings shifted out ($\Delta FShiftOut$) is not significantly different from zero ($\gamma_4 = 0.398$, p = 0.202). As seen in Column (1) of Table 6 Panel B, this shifted component is valued significantly less than the resident foreign economic

earnings component (Δ*FEcon_Res*), with which it shares economic properties, and the resident domestic economic earnings component (Δ*DEcon_Res*), with which it shares tax-reporting properties.

The significantly lower valuation of foreign shifted earnings may be associated with the lower economic potential of these shifted earnings in the domestic jurisdiction, relative to the home foreign jurisdiction, or higher tax rate in the domestic jurisdiction. Foreign economic earnings may have lower reinvestment potential in the domestic jurisdiction depending on the mechanism through which it is classified and shifted into the U.S. For instance, during the repatriation tax holiday introduced by the American Jobs Creation Act of 2004, tax exemptions were conditional on whether foreign income was repatriated as a cash dividend and met the eligibility criteria for the Dividends Received Deduction (see Oler et al., 2007). Earnings created in a foreign jurisdiction may be shifted to the U.S. through transfer pricing strategies concealed from the tax authorities and competitors, limiting the avenues for reinvestment. Subsequently, the reinvestment potential of earnings shifted to the domestic jurisdiction is decreased. Therefore, the value irrelevance of foreign economic earnings shifted out of the foreign jurisdiction is possibly due to higher taxation or lower reinvestment potential in the domestic jurisdiction.

Cross-sectional Tests. Hypotheses H2a-h test whether the valuation of the economic and shifted earnings components varies by investor sophistication. I measure investor sophistication using (i) the number of 13-F institutional investors and (ii) the number of analysts following a firm in a given year. While the institutional ownership groups differentiate between firm-years having more and less sophisticated investors, the analyst coverage groups distinguish between

firms' information environments, and each group includes both more and less sophisticated investors.

Contrary to the theoretical predictions in this study, I generally find that lower investor sophistication groups recognize the underlying economic and resident earnings components. I additionally find that higher investor sophistication is associated with a more selective valuation of these components. The two measures of investor sophistication provide a distinct result on the earnings component valued by the higher sophistication group: instances with higher institutional ownership are associated with the valuation of foreign shifted earnings, while instances with higher analyst coverage are associated with the valuation of domestic shifted earnings.

Testing the value-relevance of the earnings components by the number of institutional investors, I find that more sophisticated investors do not value reported, economic, resident, or domestic shifted earnings components. More sophisticated investors appear to be more selective in their valuation of the earnings components, and only value foreign earnings shifted. I predict that more sophisticated investors are likely to unravel unreported components because of their knowledge and abilities. However, the results show that less sophisticated investors in the sample can unravel these underlying components and, in addition to reported values, also recognize economic and resident earnings components. Hypotheses H2a-H2d are supported as the results show significant valuation differences between institutional ownership groups for domestic and foreign economic and shifted earnings components. Therefore, I conclude that valuation differences exist between more versus less sophisticated investors. However, the results do not support the theoretical reasons predicted by this study; less sophisticated investors value unobserved components, and more sophisticated investors appear to be more discriminating in their valuation.

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The tests of value-relevance of the economic and shifted earnings components by analyst coverage also show significant differences between groups. Specifically, the valuation difference is significant for domestic and foreign components of reported, economic, and domestic shifted earnings. I find support for hypothesis H2e-g. The results fail to show a significant valuation difference between analyst coverage groups for foreign earnings shifted, and I do not find support for H2h. The results show that underlying resident components are not too complex for investors to recognize where there is lower analyst coverage or less information about these components available in the market. However, I do not find evidence that the shifted earnings components are valued in this instance. I do not find evidence that the underlying earnings components, except for domestic shifted earnings, are value-relevant in instances of higher analyst coverage, suggesting that investors are more discerning in valuing earnings where more information is available. Therefore, I conclude that firms' information environments affect the valuations of economic and shifted earnings components. However, similar to the results for the institutional ownership tests, the reason for valuation differences between groups is different than the theoretical reasoning presented. I find evidence that the underlying earnings components are value-relevant where less information is available and do not find evidence that they are value-relevant where more information is available.

Conclusion

This study highlights the importance of measuring economic earnings to examine jurisdiction-specific earnings. The financial accounting literature argues that domestic and foreign earnings are valued differently because of their economic properties. However, they test the valuation and relative valuation of domestic and foreign reported earnings, each of which contain economic properties of both domestic and foreign jurisdictions because of income

shifting. I measure and find that earnings created in domestic and foreign jurisdictions, that is, economic earnings, are recognized by investors and valued significantly differently from each other. More importantly, the results show that domestic economic earnings are valued higher than foreign economic earnings. Prior literature finds that foreign reported earnings are valued higher than domestic reported earnings and attributes the relatively higher valuation to jurisdiction-specific economics. Therefore, I find that investors can unravel where earnings are created, value these components, and value them differently than reported components.

I find unexpected evidence on the valuation of unreported components by different levels of investor sophistication. I find that less sophisticated investors value domestic and foreign economic earnings components, consistent with assumptions in the tax accounting literature and contrary to views about foreign complexity in the financial accounting literature. Moreover, sophisticated investors appear to be selective in their valuation of the underlying components of earnings. They do not value reported or economic earnings but value income shifting components.

The limitations of this study are the assumptions used to estimate foreign economic earnings. These include assumptions about the countries associated with geographic segments, a limited number of countries a U.S. MNC might operate in, and the equal allocation of segment fundamentals across countries.

I expect that future work can improve the economic earnings and income shifting measures developed in this study. The measure of economic earnings developed in this study is preliminary and can be improved by (i) improving the estimation model and (ii) matching domestic-only firms used to estimate productivity with U.S. MNC subsidiaries in the sample. Additionally, income shifting measured in this study is all-encompassing and can be refined to

capture specific types of income shifting based on activity, complexity, or aggressiveness. I

expect my domestic and foreign shifted components decomposition to serve as a starting point

for future decomposition models.

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Table 1

Sample Selection

Panel A: Sample selection procedure for U.S. MNCs (Source: Compustat North America)	No. of obs.	No. of firms
Compustat sample for U.S. multinational corporations for fiscal year-ends starting Dec 31, 1998, to Jul 31, 2018 (inclusive)	190,963	19,797
less observations having zero pre-tax foreign income and foreign taxes, after filling in tax values following Dyreng and Lindsey (2009) and applying their criteria to identify MNCs.	-121,126	-13,795
less observations with missing, zero, or negative total assets or sales	-6,331	-56
less observations with insufficient geographic segment data to calculate domestic and foreign economic earnings (see Panel B)	-53,924	-4,232
less observations with missing CRSP returns data to calculate annual CAR	-1,628	-262
less observations with missing employee data	-52	-6
less firms in financial and utilities industries (FF48 codes 31, 44, 45, and 46)	-233	-44
less observations with less than 10 million USD in total assets or market value	-251	-39
less outlying observations less than or greater than four standard deviations from the mean and large Cook's distance in the reported earnings regression	-167	-12
less observations with missing Compustat data to measure changes in total, domestic and foreign EPS	-2,302	-414
less observations with insufficient data to calculate changes in domestic and foreign economic EPS and income shifting	-609	-122
Final sample of U.S. MNCs for fiscal year-ends starting Dec 31, 1998, to Jun 30, 2018 (inclusive)	4,340	815

Panel B: Sample selection procedure for historical segment data for U.S. MNCs (Source: Compustat Historical Segments)	No. of obs.	No. of firms
Firm-year segments with domestic and foreign geographic segments for fiscal years ending Dec 15, 1998, to Jul 31, 2018 (inclusive). (Each observation is a segment line for a given firm in a given year.)	607,781	16,514
less firm-years not present at step 2 in the selection of U.S. MNCs (see Panel A for selection)	-287,051	-10,648
Cleaning segment lines within a segment reported for a given firm-year:		
less firms with total missing or zero assets and employee data	-113,452	-98
less segment lines (observations) with missing or zero assets and employee data	-26,652	0

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Identifying and selecting geographic segments based on segment names rather than Compustat's classification:

less segment lines (observations) with non-geographic segment names	-127,759	-1,711
less segments that have missing values, where multiple segments exist for a given firm-year	-304	0
less operating segments that are miscoded as geographic segments, where multiple segments exist for a given firm-year	-6	0
less observations with negative values for assets, sales or employees	-26	0
less observations with segment names not associated with countries in the domestic-only sample (see Panels C and D)	-965	-3
less segments having only a single segment line with non-zero, non-missing values	-21,276	-2,226
less segments without at least one domestic and one foreign segment line	-2,085	-107
Totals for the sample of U.S. MNCs with segment data (each observation is a segment line. 4,611 firm-years)	28,205	1,721

Assigning segment data to countries and creating foreign and domestic economic earnings

Expanding firm-year-segment level observations to firm-year-country level observations	305,678	1,721
less operating segments that are miscoded as domestic geographic segment	-10	-4
less outliers under and above four standard deviations from the mean of the country-level economic earnings measure	-123	0
Collapsing from firm-year-country level to firm-year level with at least one domestic and one foreign segment line	-295,920	0
less firm-years with data for only either domestic or foreign economic earnings	-43	-3
Totals merged with main U.S. MNC firm-level data (Panel A)	9,582	1,714

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Table 2

Sample Characteristics

Panel A: Industry breakdown (by Fama-French 48 industry names)

Industry code	Industry name	Frequency	Percent	Industry code	Industry name	Frequency	Percent
1	Agriculture	1	0.02	24	Aircraft	11	0.25
2	Food Products	125	2.88	25	Shipbuilding, Railroad Equipment	20	0.46
3	Candy & Soda	30	0.69	26	Defense	2	0.05
4	Beer & Liquor	20	0.46	27	Precious Metals	17	0.39
6	Recreation	32	0.74	28	Non-Metallic and Industrial Metal Min..	41	0.94
7	Entertainment	12	0.28	29	Coal	14	0.32
8	Printing and Publishing	10	0.23	30	Petroleum and Natural Gas	191	4.4
9	Consumer Goods	119	2.74	32	Communication	48	1.11
10	Apparel	79	1.82	33	Personal Services	60	1.38
11	Healthcare	8	0.18	34	Business Services	712	16.41
12	Medical Equipment	175	4.03	35	Computers	114	2.63
13	Pharmaceutical Products	204	4.7	36	Electronic Equipment	365	8.41
14	Chemicals	190	4.38	37	Measuring and Control Equipment	192	4.42
15	Rubber and Plastic Products	55	1.27	38	Business Supplies	72	1.66
16	Textiles	13	0.3	39	Shipping Containers	34	0.78
17	Construction Materials	123	2.83	40	Transportation	85	1.96
18	Construction	34	0.78	41	Wholesale	201	4.63
19	Steel Works	82	1.89	42	Retail	108	2.49
20	Fabricated Products	5	0.12	43	Restaurants, Hotels, Motels	37	0.85
21	Machinery	246	5.67	47	Trading	105	2.42
22	Electrical Equipment	120	2.76	48	Almost Nothing/Other	107	2.47
23	Automobiles and Trucks	121	2.79				
Total						4,340	100

The sample consists of 43 of the 48 Fama-French classified industries.

Panel B: Fiscal-year end breakdown		
Year	Frequency	Percent
1998	74	1.71
1999	249	5.74
2000	225	5.18
2001	209	4.82
2002	198	4.56
2003	202	4.65
2004	215	4.95
2005	222	5.12
2006	225	5.18
2007	233	5.37
2008	227	5.23
2009	222	5.12
2010	218	5.02
2011	234	5.39
2012	237	5.46
2013	228	5.25
2014	237	5.46
2015	228	5.25
2016	215	4.95
2017	210	4.84
2018	32	0.74
Total	4,340	100

Table 3

Sample Descriptives

Panel A: Descriptive Statistics for Sample of U.S. MNCs								
Variable	N	Mean	Std. Dev.	Q5	Q25	Q50	Q75	Q95
Assets	4,340	8,072.44	47,586.43	39.51	205.76	806.36	3,400.35	25,262.00
Market Value	4,340	6,283.24	23,986.51	28.48	200.17	826.05	3,280.70	28,170.79
Number of employees	4,340	0.0151	0.0425	0.0002	0.0008	0.0029	0.0100	0.0669
Sales	4,340	4,694.98	13,584.40	37.87	190.26	765.79	3,251.15	21,486.01
Pre-tax domestic income	4,340	135.22	1,402.90	-169.58	-6.16	9.73	89.69	1,103.03
Pre-tax foreign income	4,340	218.20	1,242.68	-23.64	0.80	14.36	95.55	872.71
Pre-tax income	4,340	354.93	2,260.89	-127.91	0.56	34.43	204.36	1,948.92
Net income	4,340	231.72	1,813.72	-135.87	-0.80	22.67	141.30	1,301.50
Domestic net income	4,340	74.77	1,273.68	-181.50	-7.65	6.41	62.34	844.58
Foreign net income	4,340	165.97	1,121.04	-29.03	0.30	9.83	71.15	637.00
Domestic economic earnings	4,340	76.99	762.10	-71.30	-0.25	3.43	29.51	537.52
Foreign economic earnings	4,340	163.76	1,735.29	-85.49	-0.18	7.46	75.06	841.64
Resident portion of domestic economic earnings	4,340	88.00	364.60	0.00	0.00	1.46	19.91	453.12
Shifted out portion of domestic economic earnings	4,340	86.26	1,015.11	0.00	0.00	0.13	13.29	207.62
Resident portion of foreign economic earnings	4,340	151.19	1,076.97	0.00	0.00	2.99	43.66	473.05
Shifted out portion of foreign economic earnings	4,340	84.05	447.89	0.00	0.00	0.00	17.46	330.30

All of the above variables are expressed in millions.

Table 3 (Contd.): Sample Descriptives

Panel B: Descriptive Statistics for EPS transformations of Earnings Components

Variable	N	Mean	Std. Dev.	Q5	Q25	Q50	Q75	Q95
Total EPS *(TEPS)*	4,340	0.974	3.228	-2.150	-0.040	0.840	1.930	4.970
Domestic Reported EPS *(DEPS)*	4,340	0.392	2.668	-2.101	-0.257	0.288	1.131	3.217
Foreign Reported EPS *(FEPS)*	4,340	0.642	1.705	-0.619	0.015	0.301	0.988	3.091
Domestic Economic EPS *(DEEPS)*	4,340	0.435	2.352	-1.235	-0.009	0.093	0.701	3.090
Foreign Economic EPS *(FEEPS)*	4,340	0.599	2.800	-1.373	-0.012	0.268	1.182	3.730
DEcon_Res (EPS)	4,340	0.521	1.407	0.000	0.000	0.049	0.469	2.417
DShiftOut (EPS)	4,340	0.433	1.835	0.000	0.000	0.008	0.340	1.832
FEcon_Res (EPS)	4,340	0.578	1.306	0.000	0.000	0.116	0.701	2.515
FShiftOut (EPS)	4,340	0.389	0.962	0.000	0.000	0.000	0.380	1.787

TEPS is earnings per share (excluding extraordinary items). The remainder of the variables are the earnings components presented in Panel A, each divided by common shares outstanding to get EPS-level variables.

Panel C: Descriptive Statistics for EPS/P transformations of Earnings Components

Variable	N	Mean	Std. Dev.	Q5	Q25	Q50	Q75	Q95
TEPS/P	4,340	0.013	0.181	-0.224	-0.003	0.040	0.071	0.151
DEPS/P	4,340	-0.004	0.135	-0.194	-0.021	0.015	0.045	0.116
FEPS/P	4,340	0.019	0.092	-0.054	0.001	0.016	0.041	0.104
DEEPS/P	4,340	0.007	0.100	-0.101	-0.001	0.004	0.033	0.104
FEEPS/P	4,340	0.008	0.126	-0.122	-0.001	0.014	0.046	0.113
DEcon_Res	4,340	0.020	0.041	0.000	0.000	0.002	0.023	0.090
DShiftOut	4,340	0.026	0.083	0.000	0.000	0.001	0.022	0.123
FEcon_Res	4,340	0.019	0.030	0.000	0.000	0.006	0.027	0.073
FShiftOut	4,340	0.016	0.034	0.000	0.000	0.000	0.017	0.073

EPS-level variables presented in Panel B are each divided by lagged price at the end of the first fiscal quarter.

Table 3 (Contd.): Sample Descriptives

Panel D: Descriptive Statistics for Regression Variables

Variable	N	Mean	Std. Dev.	Q5	Q25	Q50	Q75	Q95
CAR	4,340	-0.081	0.649	-1.070	-0.423	-0.089	0.218	1.004
$\Delta TEPS/P$	4,340	0.008	0.153	-0.166	-0.022	0.003	0.030	0.210
$\Delta DEPS/P$	4,340	0.004	0.125	-0.136	-0.019	0.000	0.023	0.156
$\Delta FEPS/P$	4,340	0.003	0.067	-0.062	-0.008	0.001	0.012	0.077
$\Delta DEEPS/P$	4,340	0.003	0.097	-0.102	-0.008	0.000	0.010	0.120
$\Delta FEEPS/P$	4,340	0.005	0.110	-0.107	-0.012	0.001	0.018	0.124
$\Delta DEcon\_Res$	4,340	0.001	0.033	-0.035	-0.002	0.000	0.002	0.045
$\Delta DShiftOut$	4,340	0.003	0.071	-0.041	0.000	0.000	0.004	0.060
$\Delta FEcon\_Res$	4,340	0.002	0.025	-0.028	-0.002	0.000	0.005	0.040
$\Delta FShiftOut$	4,340	0.004	0.026	-0.016	0.000	0.000	0.003	0.041

The earnings components presented in this panel are the changes-level variables used in the regressions and are calculated as the annual difference between the EPS/P level variables, presented in Panel C.

Table 4

Correlations Between Regression Variables

	CAR	ΔTEPS/P	ΔDEPS/P	ΔFEPS/P	ΔDEEPS/P	ΔFEEPS/P	ΔDEcon_Stay	ΔDShiftOut	ΔFEcon_Stay
ΔTEPS/P	0.1576 ***								
ΔDEPS/P	0.1468 ***	0.8217 ***							
ΔFEPS/P	0.1025 ***	0.5245 ***	0.1362 ***						
ΔDEEPS/P	0.1239 ***	0.6235 ***	0.6812 ***	0.2398 ***					
ΔFEEPS/P	0.1195 ***	0.7010 ***	0.6154 ***	0.5523 ***	0.0375 **				
ΔDEcon_Stay	0.1145 ***	0.3363 ***	0.4151 ***	0.1098 ***	0.5058 ***	0.0919 ***			
ΔDShiftOut	-0.053 ***	-0.4517 ***	-0.5671 ***	-0.0209	0.0367 **	-0.6869 ***	-0.0333 **		
ΔFEcon_Stay	0.0806 ***	0.3368 ***	0.2027 ***	0.4849 ***	0.1127 ***	0.4260 ***	0.2139 ***	-0.1207 ***	
ΔFShiftOut	0.0363 **	0.0538 ***	0.1618 ***	-0.1373 ***	-0.1545 ***	0.2355 ***	0.0132	-0.0077	0.0957 ***

Significance levels are reported in parentheses. *,**, and *** represent statistical significance at the 10%, 5%, and 1% levels respectively.

Table 5
Tests of Hypotheses H1a and H1b

CAR	(1)	(2)	(3)	(4)
ΔDEPS/P	0.516***	0.593***		
	(0.066)	(0.065)		
ΔFEPS/P	0.766***	0.837***		
	(0.123)	(0.120)		
ΔDEEPS/P			0.703***	0.778***
			(0.084)	(0.082)
ΔFEEPS/P			0.473***	0.530***
			(0.074)	(0.073)
Constant	-0.105***	-0.041	-0.104***	-0.043
	(0.008)	(0.380)	(0.008)	(0.380)
Observations	4,340	4,340	4,340	4,340
Adjusted R-squared	0.026	0.115	0.025	0.114
Year FE	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes
F-test of equality of regression coefficients on:				
ΔDEPS/P and ΔFEPS/P	2.889	2.920		
ΔDEEPS/P and ΔFEEPS/P			4.065	4.938
p-value	0.089	0.088	0.044	0.026

Standard errors are provided in parentheses. *** represents statistical significance at the 1% level.

Table 6
Panel A: Tests of Hypotheses H1c and H1d

CAR	(1)	(2)
ΔDEcon_Res	1.842***	1.947***
	(0.254)	(0.247)
ΔDShiftOut	-0.114	-0.159
	(0.116)	(0.113)
ΔFEcon_Res	1.247***	1.472***
	(0.339)	(0.332)
ΔFShiftOut	0.398	0.370
	(0.312)	(0.304)
Constant	-0.106***	-0.067
	(0.008)	(0.379)
Observations	4,340	4,340
Adjusted R-squared	0.019	0.105
Year FE	No	Yes
Industry FE	No	Yes

Standard errors are provided in parentheses. *** represents statistical significance at the 1% level.

Panel B: F-tests of Differences Between Coefficients

	(1)			(2)		
	ΔDEcon_Res	ΔDShiftOut	ΔFEcon_Res	ΔDEcon_Res	ΔDShiftOut	ΔFEcon_Res
ΔDShiftOut	49.39			60.37		
	0.000			0.000		
ΔFEcon_Res	1.64	15.58		1.10	23.12	
	0.200	0.000		0.294	0.000	
ΔFShiftOut	12.98	2.37	3.11	16.36	2.65	5.50
	0.000	0.124	0.078	0.000	0.104	0.019

F-test statistics are calculated for coefficients presented in Panel A. Columns (1)-(3) correspond to fixed-effect specifications in columns (1)-(3) in Panel A. p-values are reported below F-stats.

Table 7
Tests of H2a and H2b: Institutional Ownership and the Valuation of Economic Earnings

CAR	(1)	(2)	(3)	(4)
ΔDEPS/P	0.679***	0.596***		
	(0.141)	(0.138)		
ΔFEPS/P	1.134***	1.046***		
	(0.307)	(0.293)		
High_IIHoldings	-0.053*	-0.005	-0.050*	-0.003
	(0.030)	(0.036)	(0.030)	(0.036)
ΔDEPS/P X High_IIHoldings	-0.789***	-0.714***		
	(0.218)	(0.210)		
ΔFEPS/P X High_IIHoldings	-0.900*	-0.955*		
	(0.537)	(0.520)		
ΔDEEPS/P			0.746***	0.434*
			(0.259)	(0.253)
ΔFEEPS/P			0.813***	0.819***
			(0.161)	(0.156)
ΔDEEPS/P X High_IIHoldings			-0.662*	-0.323
			(0.367)	(0.356)
ΔFEEPS/P X High_IIHoldings			-0.916***	-1.008***
			(0.234)	(0.225)
Constant	-0.112***	-0.248	-0.114***	-0.282
	(0.023)	(0.422)	(0.023)	(0.422)
Observations	867	867	867	867
Adjusted R-squared	0.039	0.131	0.040	0.133
Year FE	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes
F-tests of coefficients				
ΔDEPS/P X High_IIHoldings + ΔDEPS/P	0.438	0.536		
ΔDEEPS/P X High_IIHoldings + ΔDEEPS/P			0.106	0.189
p-value	0.508	0.464	0.745	0.664
ΔFEPS/P X High_IIHoldings + ΔFEPS/P	0.281	0.045		
ΔFEEPS/P X High_IIHoldings + ΔFEEPS/P			0.369	1.299
p-value	0.596	0.833	0.544	0.255

Standard errors are presented in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8
Tests of H2c and H2d: Institutional Ownership and the Valuation of Shifted Earnings Components

CAR	(1)	(2)
ΔDEcon_Res	1.895**	1.310*
	(0.735)	(0.705)
ΔDShiftOut	-0.349	-0.359
	(0.240)	(0.230)
ΔFEcon_Res	1.665**	1.712**
	(0.832)	(0.787)
ΔFShiftOut	1.121	1.158
	(0.969)	(0.939)
High_IIHoldings	-0.055*	-0.021
	(0.031)	(0.036)
ΔDEcon_Res X High_IIHoldings	-1.375	-0.481
	(0.980)	(0.934)
ΔDShiftOut X High_IIHoldings	0.825*	1.043**
	(0.438)	(0.421)
ΔFEcon_Res X High_IIHoldings	-0.965	-0.732
	(1.107)	(1.065)
ΔFShiftOut X High_IIHoldings	-2.800**	-3.103**
	(1.317)	(1.275)
Constant	-0.108***	-0.284
	(0.024)	(0.419)
Observations	867	867
Adjusted R-squared	0.021	0.127
Year FE	No	Yes
Industry FE	No	Yes
F-tests of coefficients		
ΔDEcon_Res X High_IIHoldings + ΔDEcon_Res	0.645	1.803
p-value	0.422	0.024
ΔDShiftOut X High_IIHoldings + ΔDShiftOut	1.686	3.718
p-value	0.195	0.169
ΔFEcon_Res X High_IIHoldings + ΔFEcon_Res	0.918	1.898
p-value	0.338	0.180
ΔFShiftOut X High_IIHoldings + ΔFShiftOut	3.545	5.121
p-value	0.060	0.054

Standard errors are presented in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

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Table 9
Tests of H2e and H2f: Analyst Coverage and the Valuation of Economic Earnings

CAR	(1)	(2)	(3)	(4)
ΔDEPS/P	0.514***	0.529***		
	(0.102)	(0.104)		
ΔFEPS/P	1.651***	1.694***		
	(0.235)	(0.235)		
High_ACoverage	-0.062**	-0.055**	-0.068***	-0.064**
	(0.024)	(0.027)	(0.024)	(0.027)
ΔDEPS/P X High_ACoverage	-0.387*	-0.478**		
	(0.200)	(0.202)		
ΔFEPS/P X High_ACoverage	-1.898***	-1.491***		
	(0.529)	(0.533)		
ΔDEEPS/P			0.955***	0.955***
			(0.137)	(0.139)
ΔFEEPS/P			0.560***	0.570***
			(0.134)	(0.135)
ΔDEEPS/P X High_ACoverage			-0.713**	-0.657**
			(0.316)	(0.320)
ΔFEEPS/P X High_ACoverage			-0.672***	-0.646***
			(0.233)	(0.236)
Constant	-0.082***	-0.024	-0.076***	-0.035
	(0.016)	(0.372)	(0.016)	(0.372)
Observations	1,743	1,743	1,743	1,743
Adjusted R-squared	0.048	0.114	0.044	0.107
Year FE	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes
F-test of coefficients				
ΔDEPS/P X High_ACoverage + ΔDEPS/P	0.542	0.086		
p-value	0.462	0.769		
ΔFEPS/P X High_ACoverage + ΔFEPS/P	0.270	0.180		
p-value	0.603	0.672		
ΔDEEPS/P X High_ACoverage + ΔDEEPS/P			0.718	1.054
p-value			0.397	0.305
ΔFEEPS/P X High_ACoverage + ΔFEEPS/P			0.340	0.152
p-value			0.560	0.696

Standard errors are presented in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10
Tests of H2g and H2h: Analyst Coverage and the Valuation of Shifted Earnings Components

CAR	(1)	(2)
$\Delta DEcon\_Res$	2.978***	2.981***
	(0.482)	(0.486)
$\Delta DShiftOut$	-0.201	-0.171
	(0.203)	(0.205)
$\Delta FEcon\_Res$	1.274*	1.338**
	(0.672)	(0.681)
$\Delta FShiftOut$	-0.203	0.332
	(0.666)	(0.674)
High_ACoverage	-0.074***	-0.075***
	(0.024)	(0.027)
$\Delta DEcon\_Res$ X High_ACoverage	-2.512***	-2.581***
	(0.750)	(0.752)
$\Delta DShiftOut$ X High_ACoverage	0.799**	0.947**
	(0.373)	(0.377)
$\Delta FEcon\_Res$ X High_ACoverage	-0.510	-0.352
	(1.105)	(1.111)
$\Delta FShiftOut$ X High_ACoverage	1.295	0.911
	(0.983)	(1.003)
Constant	-0.075***	0.001
	(0.016)	(0.369)
Observations	1,743	1,743
Adjusted R-squared	0.034	0.099
	No	Yes
Year FE	No	Yes
Industry FE	No	No
F-tests of coefficients		
$\Delta DEcon\_Res$ X High_ACoverage + $\Delta DEcon\_Res$	0.658	0.479
p-value	0.417	0.015
$\Delta DShiftOut$ X High_ACoverage + $\Delta DShiftOut$	3.654	5.979
p-value	0.056	0.097
$\Delta FEcon\_Res$ X High_ACoverage + $\Delta FEcon\_Res$	0.760	1.232
p-value	0.384	0.267
$\Delta FShiftOut$ X High_ACoverage + $\Delta FShiftOut$	2.277	2.759
p-value	0.131	0.489

Standard errors are presented in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.