Owner's earnings, cash-based operating profits, and capital expenditures in the cross section of stock returns

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Abstract

Owner's earnings, when defined as cash-based operating profits less capital expenditures, predicts the cross section of average stock returns and subsumes a variety of popular factors. This fact remains true regardless of the deflator employed. A strategy that purchases securities with high owner's earnings relative to a composite of given deflators and shorts their counterparts delivers significant alpha over the Fama-French 6-factor and q^5 factor models (t-statistics of 6.57 and 2.51, respectively) and yields a Sharpe ratio of 1.19.

Keywords: Owner's Earnings, Capital Expenditures, Cash-Based Operating Profits, Anomalies, Asset Pricing
JEL: G11, G12, M41

1. Introduction

Cash-based operating profits – defined as revenue less the cost of goods sold less reported sales, general, and administrative expenses less operating accruals – has emerged as a dominant predictor of returns in the asset pricing literature. When deflated by one-year lagged total assets, Ball et al. (2016) finds that it subsumes the operating profitability and accrual anomalies and predicts returns for up to a decade. When deflated by market equity, Wang (2023) finds that it subsumes the retained earnings to market, book to market, and the asset growth anomalies. And when deflated by total assets, Jensen et al. (2021) finds that it has the highest alpha out of the 153 different anomalies they tested.

The first component of cash-based operating profits (revenues less the cost of goods sold) is gross profits and was introduced into the literature by Novy-Marx (2013). He stipulates that gross profits are "the cleanest accounting measure of true economic profitability [because the] farther down the income statement one goes, the more polluted profitability measures become, and the less related they are to true economic profitability."

However, Ball et al. (2015) shows that the overperformance of the gross profitability (gross profits over total assets) strategy is due to the choice of deflators (total assets vs. market equity) rather than earnings metric (gross profits vs. net income). They "find that net income equals gross profit in predictive power when they have consistent deflators", contradicting the previous assertion about gross profits being the cleanest measure of profitability. Incorporating the work of Eisfeldt and Papanikolaou (2013) and Chan et al. (2001) on the predictive power of sales, general, and administrative expenses and research and development expenses, respectively, Ball et al. (2015) proposes operating profits – defined as gross profits less reported SG&A expenses, in which reported SG&A expenses are defined as Compustat SG&A expenses exclusive of research and development expenses – as an improved predictor of returns.

Ball et al. (2016) further refines the operating profits metric by subtracting operating accruals which were first discovered as a predictor of returns by Sloan (1996). Accruals are accounting adjustments that recognize revenues and expenses in the period that they occur, regardless of when the cash changes hands. Ball et al. (2016) finds that when you decompose operating profits into cash-based operating profits and operating accruals, only the cash-based operating profits continues to have predictive power. By purging operating accruals from operating profits, they were able to create a more stable measure of earnings.

Building upon this work in continuing to subtract income and cash flow statement items from various earnings metrics, this paper introduces owner's earnings, a metric originally proposed by Warren Buffett, as a better predictor of returns. Buffett defines owner's earnings as "(a) reported earnings plus (b) depreciation, depletion, amortization, and certain other non-cash charges... less (c) the average annual amount of capitalized expenditures for plant and equipment, etc., that the business requires to fully maintain its long-term competitive position and its unit volume" (Buffett, 1987).

Although Buffett's owner's earnings could be best understood as net income plus depreciation and amortization less capital expenditures, thirty five years have past since

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Buffett's original proclamation and the knowledge base of empirical asset pricing has grown substantially, therefore our definition of owner's earnings is operating profits minus operating accruals minus capital expenditures. The first two items simply equate to cash-based operating profits, so this equation can be simplified to cash-based operating profits less capital expenditures.

This paper employs operating profit in replacement of net income following Ball et al. (2015) who show that not only does operating profit outperform both gross profits and net income when it comes to predicting returns, it can predict returns up to almost 10 years in advance.

Operating accruals is used instead of depreciation and amortization given that it more accurately captures the non-cash revenues and expenses that a business might incur (Sloan, 1996; Ball et al., 2016).

Our metric continues to subtract capital expenditures given the theoretical and empirical evidence that they negatively predict returns. Theoretically, capital expenditures are costs incurred to sustain current product lines and thereby current revenues, so they are in a sense operating costs. Empirically, abnormal increases in capital expenditures as well as growth in capital expenditures over a 1-, 2-, and 3-year span have led to lower returns (Titman et al., 2004; Anderson and Garcia-Feijoo, 2006).

This paper makes three main claims. Firstly, that our properly specified owner's earnings predicts the cross section of average stock returns, and in fact, generally outperforms cash-based operating profits. Secondly, this fact holds regardless of the deflator used. And finally, a strategy that purchases securities with high owner's earnings relative to a composite of deflators and shorts their counterparts delivers statistically significant alpha over the Fama and French (2018) 6-factor model, the Hou et al. (2021) q^5 factor model, the Stambaugh and Yuan (2017) 4-factor model, and the Daniel et al. (2020) 3-factor model.

2. What are capital expenditures?

Formally, Compustat defines capital expenditures as "cash outflow or the funds used for additions to the company's property, plant and equipment, excluding amounts arising from acquisitions" (Standard & Poor's Compustat, 2024).

Capital expenditures are typically contrasted with operating expenses (cost of goods sold and sales, general, and administrative expenses) which are required to generate revenues in the current revenues. While there might be a blurred line between capital expenditures and operating expenses, the key difference is that the benefits of capital expenditures are typically accrued beyond the current fiscal year.

In the canonical example of a lemonade stand, the physical stand might require repairs to ensure that operations run smoothly. While these expenses are necessarily required to generated current period revenues, they are important in sustaining said revenues for the long-term, so in a sense, can be viewed as operating expenses, as they are required to maintain current operations, which is consistent with the aforementioned Buffett quote.

Empirically, there is evidence that the growth in capital expenditures negatively predicts returns (Anderson and Garcia-Feijoo, 2006). This effect is "stronger for firms that have greater investment discretion, i.e., firms with higher cash flows and lower debt ratios, and is shown to be significant only in time periods when hostile takeovers were less prevalent. These observations are consistent with the hypothesis that investors tend to underreact to the empire building implications of increased investment expenditures." (Titman et al., 2004).

However, there is not concrete evidence in the literature that the level of capital expenditures can statistically significant predict returns, and in this paper, I confirm this fact. All of the coefficients for capital expenditures in Fama and MacBeth (1973) come out as negative, but none are statistically significant.

The usefulness of capital expenditures appears when they are used to improve other measures of profitability, namely, cash-based operating profits. By subtracting capital expenditures to create our owner's earnings metric, we are able to create an improved measure of earnings that broadly outperforms cash-based operating profits.

3. Data

The primary sample consists of publicly-traded American firms over the 714-month period from June of 1963 to December of 2022. Monthly stock files, delistings, and events are obtained from the Center for Research in Security Prices (CRSP), while annual accounting data is sourced from Compustat.

The sample only includes firms with common stock on the NYSE, AMEX, or the NASDAQ exchanges – denoted by a share code (SHRCD) of 10 or 11 and an exchange code (EXCHCH) of 1, 2, or 3. Financial firms, defined as those with Standard Industrial Classification codes (sic) beginning with 6, are excluded from the analysis. Firms must have non-missing values for market equity, book equity, total assets, and current-month returns, and positive values for market equity, book equity, and total assets to be included in the final sample.

When a delisting return is missing from CRSP and the delisting is performance-related – defined by having a delisting code (DLSTCD) of 500 or 520 to 584 – the delisting return is set to -30% for NYSE and AMEX firms and to -55% for NASDAQ firms (Shumway, 1997; Shumway and Warther, 1999; Beaver et al., 2007).

Annual accounting data from Compustat is matched with CRSP and lagged by six months to reflect the reporting delay, consistent with Fama and French (1992). For example, if a firm's fiscal year ends in December, the accounting information is assumed to be publicly available by the end of the following June. After applying the

above filters, the final sample consists of 204,398 firm-year observations.

To mitigate the influence of microcap stocks, firms with market equity values below the 20th percentile of all NYSE firms are excluded from the Fama and MacBeth (1973) regressions, following Fama and French (2008) and Novy-Marx (2013). While these microcaps represent 52.97% of the firm count, they account for only 2.84% of the total market equity.

The core variables employed are book equity, total assets, sales, gross profits, operating profits, net income, operating cash flow, free cash flow, dividends, net payouts, retained earnings, cash-based operating profits, and owner's earnings. This paper relies on Jensen et al. (2021) for a consistent set of variable definitions. The one exception to this rule is retained earnings which was not present in Jensen et al. (2021), so we follow the original Ball et al. (2020) definition of retained earnings equaling Compustat retained earnings minus accumulated other comprehensive income.

Table 1 presents the descriptive statistics. Panel A reports the mean, standard deviation, and percentiles for the main accounting and control variables employed. These statistics, as well as the correlations shown in Panel B, are calculated each month, and then I report the average of said calculations. All of the variables are winsorized at the 1st and 99th percentiles for each month before processing the data. Given that that the winsorized variables still contain outliers, especially at the 99th percentiles, we should be additionally cautious in ascertaining results from Fama and MacBeth (1973) cross-sectional regressions [1].

Panel B presents the Pearson and Spearman correlations for selected accounting variables, all deflated by market equity. Our owner's earnings measure is highly correlated with cash-based operating profits (Pearson, 0.564; Spearman, 0.889). Cash-based operating profits is positively correlated with capital expenditures (Pearson, 0.235; Spearman, 0.345), suggesting that investors that select companies with high (low) cash-based operating profits often have higher (lower) capital expenditures. However, our owner's earnings metric is virtually uncorrelated with capital expenditures (Pearson, 0.007; Spearman, 0.030), implying that investors who select companies with high (low) owner's earnings can obtain characteristics that are roughly similar to companies with high (low) cash-based operating profits (given their high correlations), but without incurring the costs (benefits) of increased (decreased) capital expenditures.

[1] Additionally, these descriptive statistics differ from the rest of the literature with higher means, standard deviations, and skewness, suggesting a flaw in the methodology that compiled this data. I am working on understanding the differing results, and all of the code that went into this paper has been published online at `https://github.com/aidanvyas/asset_pricing_code`. However, it is important to note, that I was still able to replicate the Fama-French 6-factor portfolios almost flawlessly, suggesting that any error is limited to these descriptive statistics and Fama and MacBeth (1973) cross-sectional regression estimates.

4. Main results

4.1. The cross section of returns

Table 2 presents the Fama and MacBeth (1973) cross sectional regressions that compare cash-based operating profits, capital expenditures, and owner's earnings – all deflated by market equity. All the variables are winsorized at the 1st and 99th percentiles and non-missing values are required for market equity, book equity, and total assets. Panel A consists of All-but-microcaps, while Panel B presents only Microcaps.

In Panel A, Column 1 reports that, surprisingly, cash-based operating profits, when deflated by market equity, do not statistically significantly predict the cross section of stock returns (t=1.87), thereby contradicting the major finding of Wang (2023).

Wang (2023) presents Fama and MacBeth (1973) cross sectional regressions with the natural logarithm of cash-based operating profits to market equity (setting non-positive values to zero) and an indicator variable representing whether cash-based operating profits is non-positive or not. Upon reproducing this regression, I was unable to replicate or verify his results [2].

Column 2 presents capital expenditures has a negative, yet negligible, effect on predicting returns (t=-0.45). When adding both cash-based operating profits and capital expenditures in Column 3, cash-based operating profits positively and statistically significantly predicts returns (t=2.61), while capital expenditures strengthens, but still remains statistically insignificant (t=-1.95).

Column 4 reports that owner's earnings deflated by market equity (cash-based operating profits - capital expenditures) statistically significantly and positively predicts returns (t=3.03), which is more powerful than cash-based operating profits alone (t=1.87). In Column 5, when controlling for both cash-based operating profits, owner's earnings continues to predict the cross section of returns (t=2.26), and in fact, does it so well that it fully subsumes cash-based operating profits to further insignificance (t=-0.97).

[2] There are a couple of possible reasons for this. Firstly, my underlying data could be off, as evidenced by the extreme values in the descriptive statistics. Secondly, my implementation of Fama and MacBeth (1973) cross sectional regressions could be incorrect. While I do not believe this to be the case, given that I wrote this implementation myself, it is a possibility. As always, all of my code is published at `https://github.com/aidanvyas/asset_pricing_code`. And finally, I employ a slightly different definition for cash-based operating profits over a slightly longer time frame. My definition is taken from Jensen et al. (2021), while his from Ball et al. (2016). Additionally, I extend the sample by four years. When using the Ball et al. (2016) definition and the Wang (2023) regression specification, I am able to replicate the statistical significance found in Wang (2023), but with different magnitudes and t-stats (perhaps understandable due to the different descriptive statistics), however I prefer the Jensen et al. (2021) definition as it does not remove firms that have a missing research and development expenses value, instead setting them to 0, thereby increasing coverage.

Table 1
Descriptive statistics for the major variables employed in this paper.

Panel A presents the mean, standard deviation, 1st, 25th, 50th, 75th, and 99th percentiles for the major variables employed in this paper – Cash-Based Operating Profits, Capital Expenditures, and Owner's Earnings – scaled by market equity, total assets, and book equity. Four controls – the natural logarithm of market equity, the natural logarithm of the book equity to market equity, the past one month return, and the sum of monthly returns for the past year excluding the last month – are also included. Panel B presents Pearson correlations between the main variables deflated by market equity, and Panel C presents Spearman correlations for the same variables.

Panel A: Distributions of Major Variables Employed							
Variable	Mean	SD	1st	25th	50th	75th	99th
Accounting Variables Deflated by Market Equity							
Cash-Based Operating Profits	1.261	6.559	-0.885	0.046	0.159	0.331	54.439
Capital Expenditures	0.118	0.160	0.001	0.028	0.065	0.139	0.985
Owner's Earnings	1.035	6.035	-1.302	-0.032	0.084	0.222	50.366
Accounting Variables Deflated by Total Assets							
Cash-Based Operating Profits	1.385	7.801	-0.522	0.053	0.144	0.238	65.473
Capital Expenditures	0.067	0.065	0.002	0.026	0.048	0.085	0.360
Owner's Earnings	1.215	7.255	-0.654	-0.015	0.085	0.178	60.791
Accounting Variables Deflated by Book Equity							
Cash-Based Operating Profits	2.944	16.738	-1.542	0.098	0.281	0.487	143.008
Capital Expenditures	0.166	0.230	0.003	0.049	0.096	0.185	1.551
Owner's Earnings	2.564	15.542	-2.143	-0.034	0.164	0.358	132.642
Control Variables							
log(ME)	18.618	2.058	13.575	17.207	18.535	19.967	23.539
log(BE/ME)	0.530	0.303	0.047	0.304	0.488	0.704	1.506
$r_{1,0}$	0.010	0.131	-0.311	-0.064	0.001	0.070	0.490
$r_{12,2}$	0.132	0.448	-0.989	-0.125	0.112	0.360	1.592
Panel B: Selected Pearson Correlations							
Cash-Based Operating Profits to Market Equity	1.000						
Capital Expenditures to Market Equity	0.235	1.000					
Owner's Earnings to Market Equity	0.564	0.007	1.000				
Panel C: Selected Spearman Correlations							
Cash-Based Operating Profits to Market Equity	1.000						
Capital Expenditures to Market Equity	0.345	1.000					
Owner's Earnings to Market Equity	0.889	0.030	1.000				

Panel B simply reproduces the regressions in Panel A but exclusively on Microcap stocks. All of the t-statistics are significant, but none of the broad results change. Owner's earnings still predicts the cross section of stock returns (t=4.77), and when adding in cash-based operating profits, owner's earnings drops slightly to (t=4.06), while cash-based operating profits negatively predicts returns (t=-2.80). Again, cash-based operating profits is subsumed by owner's earnings.

4.2. Portfolio sorts

Table 3 presents the descriptive statistics for the value factors, namely, sales, net income, operating cash flow, free cash flow, dividends, net payouts, retained earnings, cash-based operating profits, and owner's earnings, all deflated by market equity. These factors are constructed to be consistent with Fama and French (1992) as outlined in Section 3, and the variable definitions are provided in Appendix A.

Panel A presents the summary statistics for the value factors. Owner's earnings to market equity yields the highest annual return (5.56%), the lowest volatility (8.2%), and the highest Sharpe ratio (0.68). Additionally, the factor has a positive skew of 0.61, which is the highest of the value factors presented, and a kurtosis of 4.45. Cash-based operating profits to market equity notches the second-highest Sharpe ratio (0.56).

Panel B displays Person correlations, while Panel C presents Spearman correlations. As expected, all the value factors are relatively highly correlated with each other.

Table 2
Cash-based operating profits, capital expenditures, and owner's earnings deflated by market equity in Fama-MacBeth regressions.

This table presents the average Fama and MacBeth (1973) cross sectional regression slopes (multiplied by 100) and their respective t-statistics from regressions that predict monthly returns. The regressions spanned from July 1963 to December 2022. Panel A presents the results for All-but-microcaps, while Panel B presents the data for Microcaps – defined as having a market equity above the 20th percentile of all NYSE securities in the previous month. The construction of cash-based operating profits and owner's earnings is presented in Appendix A. All variables are winsorized at the 1st and 99th percentile. All columns require non-missing data for the variables of interest, book equity, market equity, and total assets.

Panel A: All but Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Cash-Based Operating Profits to Market Equity	0.23		0.39		-0.21
	[1.87]		[2.61]		[-0.97]
Capital Expenditures to Market Equity		-0.12	-0.61		
		[-0.45]	[-1.95]		
Owner's Earnings to Market Equity				0.45	0.61
				[3.03]	[2.26]
log(ME)	-0.03	-0.03	-0.03	-0.03	-0.03
	[-0.85]	[-0.88]	[-0.90]	[-0.88]	[-0.88]
log(BE/ME)	0.19	0.23	0.21	0.19	0.20
	[3.29]	[3.99]	[3.61]	[3.18]	[3.56]
$r_{1,0}$	-2.68	-2.78	-2.80	-2.74	-2.79
	[-6.77]	[-7.18]	[-7.22]	[-6.94]	[-7.17]
$r_{12,2}$	9.82	10.02	9.84	10.02	9.91
	[5.50]	[5.64]	[5.51]	[5.58]	[5.54]

Panel B: Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Cash-Based Operating Profits to Market Equity	0.15		0.24		-0.52
	[2.79]		[4.60]		[-2.80]
Capital Expenditures to Market Equity		-0.83	-1.11		
		[-3.19]	[-4.31]		
Owner's Earnings to Market Equity				0.25	0.76
				[4.77]	[4.06]
log(ME)	-0.31	-0.30	-0.29	-0.30	-0.29
	[-4.64]	[-4.30]	[-4.09]	[-4.17]	[-4.14]
log(BE/ME)	0.36	0.43	0.43	0.37	0.41
	[5.82]	[7.10]	[6.74]	[5.77]	[6.39]
$r_{1,0}$	-6.39	-6.31	-6.31	-6.26	-6.27
	[-15.20]	[-14.78]	[-14.52]	[-14.37]	[-14.45]
$r_{12,2}$	1.30	1.23	0.83	1.06	0.90
	[0.86]	[0.79]	[0.53]	[0.68]	[0.57]

Owner's earnings to market equity has the highest correlation with cash-based operating profits to market equity (Pearson, 0.872; Spearman, 0.806) and the lowest correlation with dividends to market equity (Pearson, 0.537; Spearman, 0.433).

Table 4 presents spanning regressions for the same group of value factors. In Panel A, owner's earnings to market equity is regressed against each of the other value factors. In Panel B, each of the value factors is regressed against owner's earnings to market equity. In both panels, excess return of the market and the Fama and French (1992) SMB factor are held as controls.

Owner's earnings to market equity delivers statistically significant and positive alpha when regressed against each of the value factors ranging from 1.41% (t=2.64) against cash-based operating profits to market to 4.02% (t=4.68) when regressed against dividends to market equity, as shown in Panel A. 36% to 76% of the variation of the owner's earnings factor can be explained by the other value factors, the market factor, and the SMB factor.

Table 3
Descriptive statistics for value factors.

Panel A reports the annual return, standard deviation, and Sharpe ratio for the given factors. Factor construction is consistent with Fama and French (1993) as outlined in the Data section, and the variable definitions are provided in Appendix A. Panel B presents the Pearson correlations between the factors. Panel C presents the Spearman correlations between the factors, while Panel C presents the Spearman correlations.

Panel A: Summary Statistics of Factors

Factor	Return (%)	Volatility (%)	Sharpe	Skew	Kurtosis
Sales to Market Equity	4.81	10.58	0.45	-0.44	6.58
Net Income to Market Equity	3.19	11.31	0.28	-0.33	7.15
Operating Cash Flow to Market Equity	3.15	10.52	0.3	-0.12	7.1
Free Cash Flow to Market Equity	3.51	8.9	0.39	-0.07	11.59
Dividends to Market Equity	0.56	13.1	0.04	-0.34	3.98
Net Payouts to Market Equity	2.46	12.37	0.2	0.02	4.73
Retained Earnings to Market Equity	4.72	11.23	0.42	0.04	5.92
Cash-Based Operating Profits to Market Equity	5.41	9.7	0.56	0.15	3.12
Owner's Earnings to Market Equity	5.56	8.2	0.68	0.61	4.45

Panel B: Pearson Correlations

Sales to Market Equity	1.000								
Net Income to Market Equity	0.653	1.000							
Operating Cash Flow to Market Equity	0.631	0.711	1.000						
Free Cash Flow to Market Equity	0.370	0.513	0.668	1.000					
Dividends to Market Equity	0.521	0.819	0.687	0.461	1.000				
Net Payouts to Market Equity	0.563	0.845	0.727	0.577	0.943	1.000			
Retained Earnings to Market Equity	0.784	0.856	0.717	0.523	0.804	0.837	1.000		
Cash-Based Operating Profits to Market Equity	0.777	0.687	0.859	0.391	0.662	0.672	0.745	1.000	
Owner's Earnings to Market Equity	0.719	0.572	0.840	0.628	0.537	0.606	0.669	0.872	1.000

Panel C: Spearman Correlations

Sales to Market Equity	1.000								
Net Income to Market Equity	0.500	1.000							
Operating Cash Flow to Market Equity	0.426	0.587	1.000						
Free Cash Flow to Market Equity	0.055	0.260	0.460	1.000					
Dividends to Market Equity	0.391	0.785	0.616	0.269	1.000				
Net Payouts to Market Equity	0.408	0.802	0.603	0.354	0.935	1.000			
Retained Earnings to Market Equity	0.711	0.775	0.544	0.216	0.732	0.745	1.000		
Cash-Based Operating Profits to Market Equity	0.694	0.615	0.788	0.158	0.602	0.572	0.678	1.000	
Owner's Earnings to Market Equity	0.602	0.442	0.750	0.487	0.433	0.454	0.533	0.806	1.000

In Panel B, none of the other value factors achieve any statistically significant and positive alpha when regressed against the owner's earnings to market equity factor, so they are all subsumed by the owner's earnings to market equity factor. Interestingly enough, the only statistically significant result is the -1.85% (t=-2.75) alpha from operating cash flow to market equity, suggesting that the items where owner's earnings differs from operating cash flow, i.e. capital expenditures, research and development expenses, deprecation and amortization, interest expenses, and taxes, might be especially informative in predicting returns. Additionally, 46% to 77% of the variation in the other value factors can be explained by owner's earnings to market equity, the excess return of the market, and the SMB factor.

5. As a measure of profitability

This section simply repeats the analysis conducted in Section 3, but instead with owner's earnings deflated by total assets and profitability factors.

Table 5 presents the Fama and MacBeth (1973) cross sectional regressions that compare cash-based operating profits, capital expenditures, and owner's earnings – this time all deflated by total assets. The variables are winsorized at the 1st and 99th percentiles and non-missing values are required for market equity, book equity, and total assets. Panel A consists of All-but-Microcaps, while Panel B solely consists of Microcaps, whereby Microcaps are defined as stocks with a market capitalization below the 20th percentile of all NYSE stocks in the previous month.

In Panel A, Column 1 reports that cash-based operating profits, when deflated by total assets, strongly statistically significantly and positively predict the cross section of stock returns (t=5.35).

Column 2 displays that capital expenditures have a negative, yet statistically insignificant, effect on predicting returns (t=-0.64). When considering both cash-based operating profits and capital expenditures in Column 3, the predictive power of cash-based operating profits jumps

Table 4
Spanning regressions for value factors.

This table presents a battery of spanning regressions on factor returns from July 1963 to December 2022. Factor construction is consistent with Fama and French (1993) as outlined in the Data section, and the variable definitions are provided in Appendix A. Panel A regresses the Owner's Earnings to Market Equity factor on the other value factors, while Panel B regresses the other value factors on the Owner's Earnings to Market Equity factor. The annualized alpha, monthly coefficients, t-statistics, and R-squared values are presented in both panels. Sales to Market Equity is shortened to S/P, Net Income to Market Equity to NI/ME, Operating Cash Flow to Market Equity to OCF/ME, Free Cash Flow to Market Equity to FCF/ME, Dividends to Market Equity to D/ME, Net Payouts to Market Equity to NP/ME, Retained Earnings to Market Equity to RE/ME, Cash-Based Operating Profits to Market Equity to CbOP/ME, and Owner's Earnings to Market Equity to OE/ME. The excess return of the market and the Fama-French SMB factor are included as controls in all regressions.

Panel A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Alpha	3.33%	3.52%	2.84%	2.84%	4.02%	2.92%	2.54%	1.42%
	[4.42]	[3.99]	[5.18]	[3.49]	[4.68]	[3.67]	[3.17]	[2.64]
S/ME	0.56							
	[27.94]							
NI/ME		0.47						
		[19.56]						
OCF/ME			0.70					
			[45.75]					
FCF/ME				0.66				
				[23.94]				
D/ME					0.48			
					[20.85]			
NP/ME						0.55		
						[25.06]		
RE/ME							0.53	
							[24.87]	
CbOP/ME								0.74
								[47.15]
Mkt-RF	-0.04	0.04	0.02	-0.02	0.12	0.11	0.04	0.02
	[-3.10]	[2.25]	[1.91]	[-1.15]	[6.28]	[6.77]	[2.84]	[1.64]
SMB	-0.05	0.13	0.16	0.21	0.22	0.22	0.10	0.01
	[-2.53]	[5.26]	[10.40]	[8.94]	[8.51]	[9.57]	[4.53]	[0.63]
R^2	0.5321	0.3618	0.7512	0.4565	0.3909	0.4789	0.4752	0.7622

Panel B

	S/ME	NI/ME	OCF/ME	FCF/ME	D/ME	NP/ME	RE/ME	CbOP/ME
Alpha	-0.81%	0.83%	-1.85%	0.72%	-0.58%	0.47%	1.25%	0.04%
	[-0.84]	[0.75]	[-2.75]	[0.87]	[-0.53]	[0.48]	[1.21]	[0.06]
OE/ME	0.93	0.75	1.07	0.68	0.79	0.86	0.88	1.02
	[27.94]	[19.56]	[45.75]	[23.94]	[20.85]	[25.06]	[24.87]	[47.15]
Mkt-RF	0.02	-0.18	-0.05	-0.03	-0.33	-0.28	-0.16	-0.05
	[0.90]	[-8.79]	[-4.28]	[-2.20]	[-16.10]	[-14.68]	[-8.11]	[-3.90]
SMB	0.13	-0.22	-0.22	-0.29	-0.39	-0.36	-0.15	0.00
	[4.92]	[-7.06]	[-11.35]	[-12.37]	[-12.74]	[-13.12]	[-5.12]	[0.09]
R^2	0.5368	0.4608	0.7682	0.5219	0.6095	0.6407	0.5311	0.7663

(t=5.71), and while capital expenditures strengthen as a predictor of returns (t=-1.56), they remain statistically insignificant.

Column 4 reports owner's earnings deflated by total assets statistically significantly and positively predicts returns (t=5.91), and in fact, is more predictive than cash-based operating profits alone (t=5.35). In column 5, when controlling for both cash-based operating profits and owner's

Table 5
Cash-based operating profits, capital expenditures, and owner's earnings deflated by total assets in Fama-MacBeth regressions.

This table presents the average Fama and MacBeth (1973) cross sectional regression slopes (multiplied by 100) and their respective t-statistics from regressions that predict monthly returns. The regressions spanned from July 1963 to December 2022. Panel A presents the results for All-but-microcaps, while Panel B presents the data for Microcaps – defined as having a market equity above the 20th percentile of all NYSE securities in the previous month. The construction of cash-based operating profits and owner's earnings is presented in Appendix A. All variables are winsorized at the 1st and 99th percentile. All columns require non-missing data for the variables of interest, book equity, market equity, and total assets.

Panel A: All but Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Cash-Based Operating Profits to Total Assets	0.74		0.82		0.11
	[5.35]		[5.71]		[0.24]
Capital Expenditures to Total Assets		-0.31	-0.77		
		[-0.64]	[-1.56]		
Owner's Earnings to Total Assets				0.86	0.71
				[5.91]	[1.52]
log(ME)	-0.04	-0.03	-0.04	-0.04	-0.04
	[-1.04]	[-0.89]	[-1.10]	[-1.10]	[-1.11]
log(BE/ME)	0.25	0.22	0.25	0.25	0.25
	[4.16]	[3.70]	[4.14]	[4.17]	[4.13]
$r_{1,0}$	-2.68	-2.78	-2.82	-2.76	-2.82
	[-6.77]	[-7.17]	[-7.28]	[-7.02]	[-7.27]
$r_{12,2}$	10.00	9.99	9.93	10.18	9.95
	[5.59]	[5.64]	[5.60]	[5.69]	[5.60]

Panel B: Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Cash-Based Operating Profits to Total Assets	0.65		0.74		-1.11
	[6.59]		[7.04]		[-1.93]
Capital Expenditures to Total Assets		-1.55	-1.74		
		[-2.36]	[-2.68]		
Owner's Earnings to Total Assets				0.78	1.85
				[7.53]	[3.24]
log(ME)	-0.34	-0.29	-0.31	-0.32	-0.32
	[-4.96]	[-4.18]	[-4.34]	[-4.50]	[-4.51]
log(BE/ME)	0.37	0.38	0.38	0.38	0.37
	[5.84]	[6.06]	[5.86]	[5.82]	[5.73]
$r_{1,0}$	-6.39	-6.28	-6.31	-6.27	-6.35
	[-15.19]	[-14.76]	[-14.54]	[-14.41]	[-14.63]
$r_{12,2}$	1.33	1.26	0.72	1.02	0.87
	[0.88]	[0.81]	[0.46]	[0.65]	[0.56]

earnings, both metrics positively, yet statistically insignificantly predict returns, (t=0.24 and t=1.52, respectively), with owner's earnings being a stronger predictor of returns than cash-based operating profits.

Panel B reproduces all of the regressions in Panel A but with Microcap stocks. The broad results of the first four columns stay the same, but among these smaller securities, capital expenditures deflated by total assets negatively and statistically significantly predicts returns when judged by itself (t=-2.36) and when controlling for cash-based operating profits (t=-2.68). In column 5, when we control for both cash-based operating profits and owner's earnings, cash-based operating profits becomes statistically insignificant (t=-1.93), while owner's earnings strongly and statistically significantly predicts returns (t=3.24). Among this set of securities, owner's earnings subsumes cash-based operating profits in predicting returns.

Overall, given the higher t-statistics both when judged by themselves and in conjunction with each other, owner's earnings outperforms, but does not completely subsume,

cash-based operating profits in Fama and MacBeth (1973) cross sectional regressions when deflated by total assets.

Table 6 reports the descriptive statistics for the profitability factors, specifically, gross profits, operating profits, cash-based operating profits, and owner's earnings, all deflated by total assets. These factors are constructed to be consistent with Fama and French (1992) as outlined in Section 3, and the variable definitions are provided in Appendix A.

Panel A presents the summary statistics for the profitability factors. Owner's earnings to total assets and cash-based operating profits to total asset have virtually the same Sharpe ratios (1.02 vs. 1.04). The owner's earnings factor has an annual return of 5.46%, volatility of 5.37%, a positive skew (0.38), and kurtosis of 1.0 The cash-based operating profits factor has an annual return of 5.15%, an annual volatility of 4.97%, a positive skew (0.42), and a kurtosis of 1.37.

Panel B displays the Pearson correlations, while Panel C presents the Spearman correlations. All of the profitability factors are relatively highly correlated with each other. Owner's earnings to total assets has the highest correlation with cash-based operating profits to total assets (Pearson, 0.832; Spearman, 0.811) and the lowest correlation with gross profits to total assets (Pearson, 0.573; Spearman, 0.559). Curiously enough, gross profits has a higher correlation with owner's earnings (Pearson, 0.573; Spearman, 0.559), than cash-based operating profits (Pearson, 0.484; Spearman, 0.457), even though owner's earnings is arithmetically further away.

Table 7 reports spanning regressions for the same group of profitability factors. In Panel A, owner's earnings to total assets is regresses against each of the other profitability factors. In Panel B, each of the profitability factors is regressed against owner's earnings to total assets. For both panels, the excess return of the market, and the Fama and French (1992) SMB and HML factors are held as controls.

Owner's earnings to total assets yields statistically significantly and positive alpha when regressed against each of the profitability factors ranging from 1.28% (t=3.08) against cash-based operating profits to total assets to 4.83% (t=8.36) when regressed against gross profits to total assets, as displayed in Panel A. 39% to 70% of the variation of the owner's earnings to total assets factor can be explained by the other factors and the Fama and French (1992) three-factors.

In Panel B, gross profits to total assets and operating profits to total assets fail to register any statistically significant alpha when regressed on the owner's earnings to total assets factors (t=-0.67 and t=1.07, respectively). However, the cash-based operating profits to total assets factor delivers a statistically significant and positive alpha of 1.06% (t=2.73). Additionally, 41% to 70% of the variation in the other value factors can be explained by owner's earnings to total assets and the Fama and French (1992) three-factors.

Overall, owner's earnings is slightly more powerful than cash-based operating profits, when both are deflated by total assets, given the higher alphas and t-statistics when regressed on each other, as well as the mild outperformance in Fama and MacBeth (1973) cross sectional regressions. The overperformance of owner's earnings relative to cash-based operating profits is not statistically substantial, but rather incremental and marginal, at least when deflated by total assets.

All of these calculations are repeated in Appendix B, but with book equity as the deflator instead of total assets. The results are largely the same, but if anything, the performance of owner's earnings relative to cash-based operating profits is stronger, as owner's earnings subsumes cash-based operating profits in Fama and MacBeth (1973) cross sectional regressions when deflated by book equity. I reported the total assets results in the main section of the paper as it is a more widely used deflator.

6. Quality merchandise marked down

Warren Buffett once said "whether we're talking about socks or stocks, I like buying quality merchandise when it is marked down" (Buffett, 2008). Up to this point, I have examined various value and profitability metrics irrespective of each other, i.e. looking at only whether a company was cheap or profitable, as is standard in the asset pricing literature.

However, for many practitioners, value and profitability (or quality) are joined at the hip, because after all, what's the point of buying a cheap company if it's unprofitable or buying a profitable company at 100 times sales?

For a simple approximation for a holistic evaluation of a metric that captures both the value and the profitability of a stock, I have chosen to take the ranks of stocks based on the underlying metrics – owner's earnings to market equity, total assets, and book equity. Given that having positive and non-missing values for all three deflators, the number of observations are constant between the three metrics. The owner's earnings composite is simply the sum of all three ranks.

Table 8 presents the Fama and MacBeth (1973) cross sectional regressions that compare owner's earnings deflated by market equity, total assets, and book equity with the owner's earnings composite. The sample requires non-missing values for market equity, book equity, and total assets. All variables are winsorized at the 1st and 99th percentiles. Panel A reports data for All-but-Microcaps, while Panel B solely consists of Microcaps, where Microcaps are defined as stocks with a market capitalization below the 20th percentile of all NYSE stocks in the previous month.

In Panel A, Columns 1 through 3 report that owner's earnings deflated by market equity, total assets, and book equity statistically significantly and positively predict the cross section of returns (t-statistics of 3.03, 5.91, and 4.15, respectively).

Table 6
Descriptive statistics for profitability factors.

Panel A reports the annual return, standard deviation, and Sharpe ratio for the given factors. Factor construction is consistent with Fama and French (1993) as outlined in the Data section, and the variable definitions are provided in Appendix A. Panel B presents the Pearson correlations between the factors. Panel C presents the Spearman correlations between the factors, while Panel C presents the Spearman correlations.

Panel A: Summary Statistics of Factors					
Factor	Return (%)	Volatility (%)	Sharpe	Skew	Kurtosis
Gross Profits to Total Assets	3.65	8.01	0.46	-0.08	0.22
Operating Profits to Total Assets	3.92	6.52	0.6	0.18	1.2
Cash-Based Operating Profits to Total Assets	5.15	4.97	1.04	0.42	1.37
Owner's Earnings to Total Assets	5.46	5.37	1.02	0.38	1.0
Panel B: Pearson Correlations					
Gross Profits to Total Assets	1.000				
Operating Profits to Total Assets	0.713	1.000			
Cash-Based Operating Profits to Total Assets	0.484	0.718	1.000		
Owner's Earnings to Total Assets	0.573	0.628	0.832	1.000	
Panel C: Spearman Correlations					
Gross Profits to Total Assets	1.000				
Operating Profits to Total Assets	0.699	1.000			
Cash-Based Operating Profits to Total Assets	0.457	0.690	1.000		
Owner's Earnings to Total Assets	0.559	0.600	0.811	1.000	

Column 4 displays that the owner's earnings composite metric statistically significantly predicts returns (t=5.41). Column 5 includes all four owner's earnings metrics, and the owner's earnings composite metric remains statistically significant (t=3.60), and subsumes the rest of the owner's earnings metrics (t-statistics of -0.44, 1.02, and 0.04, respectively).

Panel B reports the same regressions, but for Microcaps. Interestingly enough, the owner's earnings composite fails to predict returns either by itself (t=1.12) or when controlling for the other owner's earnings metrics (t=0.59). The owner's earnings to book equity metric actually subsumes the other measures in Column 5 (*2.55*).

Table 9 reports the descriptive statistics for the owner's earnings composite factor as well as the Fama and French (2018) 6-factors. These factors are constructed to be consistent with Fama and French (1992) as outlined in Section 3, and the variable definitions are provided in Appendix A.

Panel A presents the summary statistics for the aforementioned factors. The owner's earnings composite factor has an annual return of 6.21%, a volatility of 5.24%, a Sharpe ratio of 1.19, a positive skew of 0.57, and a kurtosis of 2.34. This is by far the highest Sharpe ratio of the group, more than doubling the second highest (UMD at 0.53), but also the lowest volatility and highest skew.

Panel B displays the Pearson correlations, while Panel C presents the Spearman correlations. The owner's earnings composite factor is mildly inversely correlated with the Mkt-RF (Pearson, -0.136; Spearman, -0.086) and SMB (Pearson, -0.194; Spearman, -0.190) factors, and modestly positively correlation with the HML (Pearson, 0.139; Spearman, 0.037), RMW (Pearson, 0.429; Spearman, 0.364), CMA (Pearson, 0.248; Spearman, 0.166), and UMD (Pearson, 0.128; Spearman, 0.114) factors. The owner's earnings composite factor has the highest correlation with the RMW factor and is the most inversely correlated with the SMB factor.

Table 10 presents factor regressions regressing the owner's earnings composite factor against the Fama and French (2018) 6-factor model, the Hou et al. (2021) q^5 factor model, the Daniel et al. (2020) 4-factor model, and the Stambaugh and Yuan (2017) 3-factor model.

The owner's earnings composite factor delivers statistically significant alpha over each of the factor models ranging from 1.75% (t=2.51) against the Hou et al. (2021) q^5 factor model to 4.30% (t=5.48) against the Stambaugh and Yuan (2017) 3-factor model. It also achieves an alpha of 4.15% (t=6.57) against the Fama and French (2018) 6-factor model and 3.26% (t=5.04) against the Daniel et al. (2020) 4-factor model.

The owner's earnings composite factor has positive loadings on all the factors except the size and value factor in the Fama and French (2018) 6-factor model and the size factor in the Stambaugh and Yuan (2017) 3-factor model, meaning that in addition to providing alpha, it effectively captures a wide variety of factor premiums.

Table 11 reports the annual excess returns, volatility, Sharpe ratios, and alpha over the Fama and French (2018) 6-factor model for the portfolios based NYSE deciles for

Table 7
Spanning regressions for profitability factors.

This table presents a battery of spanning regressions on factor returns from July 1963 to December 2022. Factor construction is consistent with Fama and French (1993) as outlined in the Data section, and the variable definitions are provided in Appendix A. Panel A regresses the Owner's Earnings to Total Assets factor on the other profitability factors, while Panel B regresses the other profitability factors on the Owner's Earnings to Total Assets factor. The annualized alpha, monthly coefficients, t-statistics, and R-squared values are presented in both panels. Gross Profits to Total Assets is shortened to GP/A, Operating Profits to Total Assets to OP/A, Cash-Based Operating Profits to Total Assets to CbOP/A, and Owner's Earnings to Total Assets to OE/A. The excess return of the market and the Fama-French SMB and HML factors are included as controls in all regressions.

Panel A			
	(1)	(2)	(3)
Alpha	4.83%	4.02%	1.28%
	[8.36]	[7.05]	[3.08]
GP/A	0.38		
	[17.86]		
OP/A		0.49	
		[19.09]	
CbOP/A			0.87
			[37.53]
Mkt-RF	-0.05	-0.04	-0.01
	[-4.73]	[-3.81]	[-1.59]
SMB	-0.08	-0.03	-0.00
	[-5.09]	[-1.64]	[-0.35]
HML	-0.03	-0.02	-0.06
	[-1.60]	[-1.46]	[-5.04]
R^2	0.3869	0.4127	0.7023
Panel B			
	GP/A	OP/A	CbOP/A
Alpha	-0.58%	0.74%	1.06%
	[-0.67]	[1.07]	[2.73]
OE/A	0.82	0.69	0.76
	[17.86]	[19.09]	[37.53]
Mkt-RF	0.04	0.01	-0.01
	[2.49]	[0.96]	[-0.87]
SMB	0.07	-0.05	-0.03
	[2.89]	[-2.92]	[-2.50]
HML	-0.18	-0.14	0.01
	[-7.55]	[-7.26]	[1.07]
R^2	0.4077	0.4454	0.6962

the owner's earnings composite metric.

The lowest decile delivered an average excess return of 2.46% on 21.45% volatility yielding a Sharpe ratio of 0.11, while the highest decile delivered 12.30% a year on 17.84% volatility yielding a Sharpe ratio of 0.69.

The extreme long-short portfolio returned 9.62% annually with a Sharpe ratio of 0.81. Additionally, this portfolio delivers a 5.26% alpha against the Fama and French (2018) 6-factor model (t=3.83).

Figure 1 displays the performance of the market portfolio, the owner's earnings composite factor, and the extreme long decile portfolio.

The owner's earnings composite factor has outperformed the market portfolio for virtually the entirety of the sample period beyond the first decade. It has no serious drawdowns, but there are long stretches of time where it is essentially flat.

The extreme long decile portfolio has both the highest returns and the highest volatility. While there are a few drawdowns, there is a consistent, broad trend of going up and to the right.

Table 8
Owner's earnings in Fama-MacBeth regressions.

This table presents the average Fama and MacBeth (1973) cross sectional regression slopes (multiplied by 100) and their respective t-statistics from regressions that predict monthly returns. The regressions spanned from July 1963 to December 2022. Panel A presents the results for All-but-microcaps, while Panel B presents the data for Microcaps – defined as having a market equity above the 20th percentile of all NYSE securities in the previous month. The construction of owner's earnings is presented in Appendix A. All variables are winsorized at the 1st and 99th percentile. All columns require non-missing data for the variables of interest, book equity, market equity, and total assets.

Panel A: All but Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Owner's Earnings to Market Equity	0.45				-0.09
	[3.03]				[-0.44]
Owner's Earnings to Total Assets		0.86			0.22
		[5.91]			[1.02]
Owner's Earnings to Book Equity			0.08		0.00
			[4.15]		[0.04]
Owner's Earnings Composite				0.00	0.00
				[5.41]	[3.60]
log(ME)	-0.03	-0.04	-0.03	-0.04	-0.04
	[-0.88]	[-1.10]	[-0.80]	[-1.32]	[-1.31]
log(BE/ME)	0.19	0.25	0.25	0.23	0.23
	[3.18]	[4.17]	[3.94]	[3.78]	[3.67]
$r_{1,0}$	-2.74	-2.76	-2.75	-2.82	-2.91
	[-6.94]	[-7.02]	[-6.97]	[-7.18]	[-7.46]
$r_{12,2}$	10.02	10.18	10.24	9.87	9.71
	[5.58]	[5.69]	[5.72]	[5.51]	[5.47]

Panel B: Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Owner's Earnings to Market Equity	0.25				-0.12
	[4.77]				[-1.50]
Owner's Earnings to Total Assets		0.78			0.11
		[7.53]			[0.65]
Owner's Earnings to Book Equity			0.11		0.06
			[6.37]		[2.55]
Owner's Earnings Composite				0.00	0.00
				[1.12]	[0.59]
log(ME)	-0.30	-0.32	-0.29	-0.31	-0.30
	[-4.17]	[-4.50]	[-4.08]	[-4.47]	[-4.36]
log(BE/ME)	0.37	0.38	0.42	0.36	0.37
	[5.77]	[5.82]	[6.35]	[5.59]	[5.64]
$r_{1,0}$	-6.26	-6.27	-6.25	-6.32	-6.38
	[-14.37]	[-14.41]	[-14.26]	[-14.58]	[-14.68]
$r_{12,2}$	1.06	1.02	1.21	0.67	0.43
	[0.68]	[0.65]	[0.78]	[0.43]	[0.28]

7. Conclusion

In conclusion, owner's earnings – a metric inspired by Warren Buffett – and defined as cash-based operating profits less capital expenditures predicts the cross section of average stock returns. It does this so well that it subsumes or outperforms a dozen of the most popular anomalies in the asset pricing literature.

This outperformance is not limited to a single deflator, as owner's earnings predicts returns and subsumes other anomalies, regardless of whether it is deflated by market equity, total assets, or book equity.

Furthermore, an owner's earnings composite that equals the sums of the ranks of the owner's earnings to market equity, total assets, and book equity metrics, subsumes the individual owner's earnings anomalies. This composite strategy yields a Sharpe ratio of 1.19, and delivers statis-

Table 9
Descriptive statistics for factors.

Panel A reports the annual return, standard deviation, and Sharpe ratio for the given factors. The owner's earnings factor is contructed as outlined in the Data section, and the underlying variable is simply the sum of the ranks of the owner's earnings to market equity and owner's earnings to total assets. The Fama and French (2018) 6-factors are taken from the Ken French data library. Panel B presents the Pearson correlations between the factors. Panel C presents the Spearman correlations between the factors.

Panel A: Summary Statistics of Factors							
Factor	Return (%)	Volatility (%)	Sharpe	Skew	Kurtosis		
Owner's Earnings Composite	6.21	5.24	1.19	0.57	2.34		
Mkt-RF	6.59	15.58	0.42	-0.5	1.74		
SMB	2.67	10.46	0.26	0.34	3.09		
HML	3.73	10.29	0.36	0.12	2.32		
RMW	3.39	7.7	0.44	-0.27	11.13		
CMA	3.62	7.13	0.51	0.33	1.39		
UMD	7.67	14.5	0.53	-1.28	9.87		
Panel B: Pearson Correlations							
Owner's Earnings Composite	1.000						
Mkt-RF	-0.136	1.000					
SMB	-0.194	0.279	1.000				
HML	0.139	-0.210	-0.025	1.000			
RMW	0.429	-0.179	-0.347	0.090	1.000		
CMA	0.248	-0.366	-0.097	0.683	-0.017	1.000	
UMD	0.128	-0.164	-0.061	-0.204	0.080	-0.021	1.000
Panel C: Spearman Correlations							
Owner's Earnings Composite	1.000						
Mkt-RF	-0.086	1.000					
SMB	-0.190	0.245	1.000				
HML	0.037	-0.229	-0.027	1.000			
RMW	0.364	-0.155	-0.265	-0.155	1.000		
CMA	0.166	-0.325	-0.101	0.671	-0.174	1.000	
UMD	0.114	-0.119	-0.025	-0.173	0.131	-0.057	1.000

tically significant alpha over the Fama and French (2018) 6-factor model, the Hou et al. (2021) q^5 factor model, the Stambaugh and Yuan (2017) 4-factor model, and the Daniel et al. (2020) 3-factor model.

Appendix A. Variable Definitions

This appendix provides comprehensive definitions for all of the variables employed in this paper. Unless otherwise stated, these definitions are adapted from Jensen et al. (2021). The definition of retained earnings is derived from Ball et al. (2020). For ease of replication Compustat items are included and denoted by capital letter definitions followed by a set of parentheses. These definitions make extensive use of intermediate variables for conciseness and clarity which are denoted by lower case letters throughout. All intermediate variables are defined in terms of Compustat variables.

Book Equity

Book equity is defined as stockholder's equity plus preferred stock (if missing, set to 0) plus deferred taxes and investment tax credit (if missing, set to 0).

Stockholder's equity is Stockholders Equity - Parent (seq), if missing, use Common/Ordinary Equity - Total (ceq) plus preferred stock (if missing set to 0), and if missing, use Assets - Total (at) minus Liabilities - Total (lt).

Preferred stock is Preferred Stock - Redemption Value (pstkrv), if missing, use Preferred Stock - Liquidating Value (pstkl), and if missing, use Preferred/Preference Stock (Capital) - Total (pstk).

Deferred taxes and investment tax credit is Deferred Taxes and Investment Tax Credit (txditc), and if missing, use Deferred Taxes (Balance Sheet) (txdb) plus Investment Tax Credit (Balance Sheet) (itcb).

Total Assets

Table 10
Factor regressions.

This table presents regressions of the owner's earnings composite factor against the Fama and French (2018) 6-factor model, the Hou et al. (2021) $q5$-factor model, the Daniel et al. (2019) 3-factor model, and the Stambaugh and Yuan (2017) 4-factor model. These factor returns were taken from their respective websites. The Fama and French (2018) market and size factors were used as a stand-in for all market and size factors.

	(1)	(2)	(3)	(4)
Alpha	4.15%	1.75%	3.26%	4.30%
	[6.57]	[2.51]	[5.04]	[5.48]
Mkt-RF	0.0242	0.0486	0.0552	0.0401
	[1.97]	[3.86]	[4.22]	[2.81]
SMB	-0.0113	0.0163		-0.0159
	[-0.64]	[0.87]		[-0.76]
HML	-0.0583			
	[-2.46]			
RMW	0.3023			
	[12.59]			
CMA	0.2649			
	[7.58]			
UMD	0.0313			
	[2.55]			
IA		0.1853		
		[7.10]		
ROE		0.1008		
		[4.37]		
EG		0.3059		
		[9.64]		
MGMT			0.2530	
			[11.91]	
PERF			0.1427	
			[10.01]	
PEAD				0.0775
				[2.53]
FIN				0.1676
				[9.53]
R^2	0.2697	0.2969	0.2452	0.1588

Total assets is defined as Assets - Total (at), and if missing, use stockholder's equity (as defined above) plus Long-Term Debt - Total (dltt) plus Current Liabilities - Total (lct) (if missing, set to 0) plus Liabilities - Other - Total (lo) (if missing, set to 0) plus Deferred Taxes and Investment Tax Credit (txditc) (if missing, set to 0).

Sales

Sales are defined as Sales/Turnover (Net) (sale), and if missing, use Revenue - Total (revt).

Gross Profits

Gross profits are defined as Gross Profit (Loss) (gp), and if missing, use sales (as defined above) minus Cost of Goods Sold (cogs).

Operating Profits

Operating profits are defined as earnings before interest, taxes, depreciation, and amortization plus research and development expenses (xrd) (if missing, set to 0).

Earnings before interest, taxes, depreciation, and amortization is Earnings Before Interest (ebitda), if missing, use Operating Income Before Depreciation (oibdp), if missing, use sales (as defined above) minus operating expenses, and if missing, use gross profit (as defined above) minus Selling, General and Administrative Expense (xsga).

Net Income

Net income is defined as Income Before Extraordinary Items (ib), if missing, use Net Income (Loss) (ni) minus extraordinary items and discontinued operations, and if missing, use pretax income minus Income Taxes - To-

Table 11
Decile sorts.

This table presents the average annualized excess returns, standard deviation, and Sharpe ratio for the portfolios formed on the NYSE deciles of the owner's earnings composite factor. These portfolios are then regressed upon the Fama and French (2018) 6-factor model (from the Ken French Data Library), and the resulting alpha and t-statistics are presented.

Portfolio	Excess Return	Volatility	Sharpe Ratio	Alpha
1	2.46%	21.45%	0.11	-2.49% [-2.58]
2	4.50%	16.66%	0.27	-0.98% [-1.18]
3	5.22%	15.84%	0.33	-1.63% [-2.08]
4	4.76%	16.44%	0.29	-1.25% [-1.63]
5	6.25%	16.78%	0.37	0.04% [0.05]
6	7.28%	15.90%	0.46	0.45% [0.64]
7	6.84%	16.60%	0.41	-0.27% [-0.36]
8	9.60%	16.25%	0.59	2.57% [3.74]
9	10.21%	15.97%	0.64	1.87% [2.30]
10	12.30%	17.84%	0.69	2.77% [2.77]
10-1	9.62%	11.89%	0.81	5.26% [3.83]

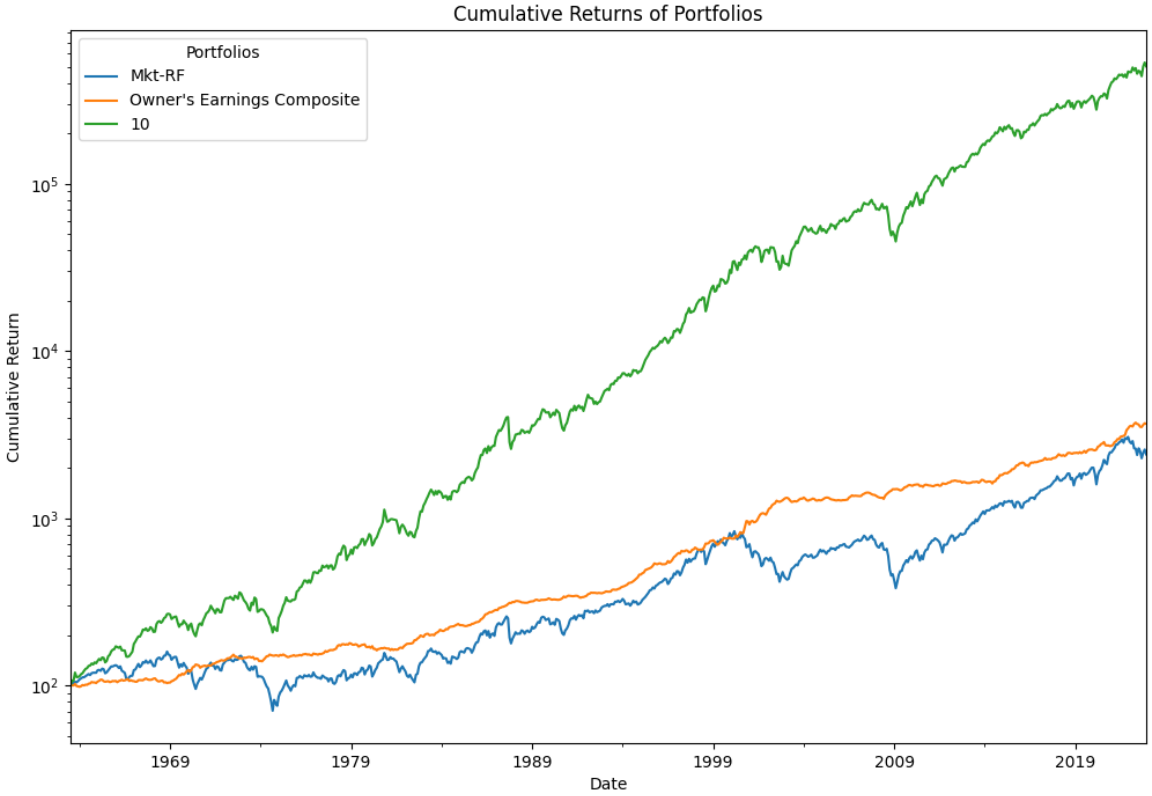

Figure 1

tal (txt) minus Noncontrolling Interest (Income Account) (mii).

Extraordinary items and discontinued operations is Extraordinary Items and Discontinued Operations (xido), and if missing, use Extraordinary Items (xi) plus Discontinued Operations (do) (if missing, set to 0).

Pretax income is Pretax Income (pi), and if missing, use earnings before interest and taxes minus Interest and

Related Expense - Total (xint) plus Special Items (spi) (if missing, set to 0) plus Nonoperating Income (Expense) (nopi).

Earnings before interest and taxes is Earnings Before Interest and Taxes (ebit), if missing, use Operating Income After Depreciation (oiadp), and if missing, use earnings before interest, taxes, depreciation, and amortization (as defined above) minus Depreciation and Amortization (dp).

Operating expenses are Operating Expenses - Total (xopr), and if missing, use Cost of Goods Sold (cogs) plus Selling, General and Administrative Expense (xsga).

Operating Cash Flow

Operating cash flow is defined as Operating Activities - Net Cash Flow (oancf), if missing, use net income (as defined above) minus operating accruals, and if missing, use net income (as defined above) plus Depreciation and Amortization (dp) - Working Capital (Balance Sheet) (wcap) (if missing, set to 0).

Operating accruals are net income (as defined above) minus Operating Activities - Net Cash Flow (oancf), and if missing, use the yearly change in current operating working capital plus the yearly change in net non-current operating assets.

Current operating working capital is current operating assets minus current operating liabilities.

Current operating assets are current assets minus Cash and Short-Term Investments (che).

Current assets are Current Assets - Total (act), and if missing, use Receivables - Total (rect) plus Inventories - Total (invt) plus Cash and Short-Term Investments (che) plus Current Assets - Other - Total (aco).

Current operating liabilities are current liabilities minus Debt in Current Liabilities - Total (dlc) (if missing, set to 0).

Current liabilities are Current Liabilities - Total (lct), and if missing, use Accounts Payable - Trade (ap) plus Debt in Current Liabilities - Total (dlc) plus Income Taxes Payable (txp) plus Current Liabilities - Other - Total (lco).

Net non-current operating assets are non-current operating assets minus non-current operating liabilities. Non-current operating assets are total assets (as defined above) minus current assets (as defined above) minus Investment and Advances - Other (ivao).

Non-current operating liabilities are Liabilities - Total (lt) minus current liabilities (as defined above) minus Long-Term Debt - Total (dltt).

Free Cash Flow

Free cash flow is defined as operating cash flow (as defined above) minus Capital Expenditures (capx).

Cash-based Operating Profits

Cash-based operating profits are defined as earnings before interest, taxes, depreciation, and amortization (as defined above) plus Research and Development Expense (xrd) (if missing, set to 0) minus operating accruals (as defined above).

Dividends

Dividends are defined as Dividends - Total (dvt), and if missing, use Cash Dividends (Cash Flow) (dv).

Net Payouts

Net payouts are defined as dividends (as defined above) plus equity buybacks.

Equity buybacks are defined as Sale of Common and Preferred Stock (sstk) (if missing, set to 0) and Purchase of Common and Preferred Stock (prstkc) (if missing, set to 0).

Retained Earnings

Retained earnings are defined as Retained Earnings (re) minus Accumulated Other Comprehensive Income (Loss) (acominc) (if missing, set to 0).

Owner's Earnings

Owner's earnings are defined as cash-based operating profits (as defined above) minus Capital Expenditures (capx).

Appendix B. Deflated by book equity

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Table B1
Cash-based operating profits, capital expenditures, and owner's earnings deflated by book equity in Fama-MacBeth regressions.

This table presents the average Fama and MacBeth (1973) cross sectional regression slopes (multiplied by 100) and their respective t-statistics from regressions that predict monthly returns. The regressions spanned from July 1963 to December 2022. Panel A presents the results for All-but-microcaps, while Panel B presents the data for Microcaps – defined as having a market equity above the 20th percentile of all NYSE securities in the previous month. The construction of cash-based operating profits and owner's earnings is presented in Appendix A. All variables are winsorized at the 1st and 99th percentile. All columns require non-missing data for the variables of interest, book equity, market equity, and total assets.

Panel A: All but Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Cash-Based Operating Profits to Book Equity	0.05		0.08		-0.14
	[3.15]		[4.50]		[-1.44]
Capital Expenditures to Book Equity		-0.03	-0.27		
		[-0.26]	[-1.84]		
Owner's Earnings to Book Equity				0.08	0.23
				[4.15]	[2.27]
log(ME)	-0.03	-0.03	-0.03	-0.03	-0.03
	[-0.73]	[-0.85]	[-0.79]	[-0.80]	[-0.82]
log(BE/ME)	0.25	0.21	0.24	0.25	0.24
	[3.92]	[3.46]	[3.75]	[3.94]	[3.75]
$r_{1,0}$	-2.68	-2.80	-2.83	-2.75	-2.81
	[-6.75]	[-7.21]	[-7.27]	[-6.97]	[-7.21]
$r_{12,2}$	10.06	10.02	10.02	10.24	10.04
	[5.63]	[5.65]	[5.64]	[5.72]	[5.64]

Panel B: Microcaps

Independent variable	(1)	(2)	(3)	(4)	(5)
Cash-Based Operating Profits to Book Equity	0.08		0.12		-0.00
	[5.24]		[7.22]		[-0.01]
Capital Expenditures to Book Equity		-0.26	-0.50		
		[-1.08]	[-2.14]		
Owner's Earnings to Book Equity				0.11	0.11
				[6.37]	[0.89]
log(ME)	-0.31	-0.30	-0.29	-0.29	-0.29
	[-4.50]	[-4.29]	[-4.05]	[-4.08]	[-4.11]
log(BE/ME)	0.41	0.37	0.41	0.42	0.42
	[6.28]	[5.69]	[5.99]	[6.35]	[6.17]
$r_{1,0}$	-6.37	-6.30	-6.30	-6.25	-6.30
	[-15.08]	[-14.75]	[-14.44]	[-14.26]	[-14.30]
$r_{12,2}$	1.43	1.18	0.83	1.21	0.98
	[0.94]	[0.76]	[0.53]	[0.78]	[0.63]

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Table B2
Descriptive statistics for profitability factors.

Panel A reports the annual return, standard deviation, and Sharpe ratio for the given factors. Factor construction is consistent with Fama and French (1993) as outlined in the Data section, and the variable definitions are provided in Appendix A. Panel B presents the Pearson correlations between the factors. Panel C presents the Spearman correlations between the factors, while Panel C presents the Spearman correlations.

Panel A: Summary Statistics of Factors					
Factor	Return (%)	Volatility (%)	Sharpe	Skew	Kurtosis
Gross Profits to Book Equity	4.25	7.84	0.54	-0.13	1.25
Operating Profits to Book Equity	3.95	5.92	0.67	0.26	1.99
Cash-Based Operating Profits to Book Equity	5.37	4.84	1.11	0.84	4.27
Owner's Earnings to Book Equity	5.61	5.0	1.12	0.35	0.92
Panel B: Pearson Correlations					
Gross Profits to Book Equity	1.000				
Operating Profits to Book Equity	0.707	1.000			
Cash-Based Operating Profits to Book Equity	0.434	0.666	1.000		
Owner's Earnings to Book Equity	0.470	0.582	0.812	1.000	
Panel C: Spearman Correlations					
Gross Profits to Book Equity	1.000				
Operating Profits to Book Equity	0.662	1.000			
Cash-Based Operating Profits to Book Equity	0.390	0.613	1.000		
Owner's Earnings to Book Equity	0.445	0.536	0.788	1.000	

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Table B3
Spanning regressions for profitability factors.

This table presents a battery of spanning regressions on factor returns from July 1963 to December 2022. Factor construction is consistent with Fama and French (1993) as outlined in the Data section, and the variable definitions are provided in Appendix A. Panel A regresses the Owner's Earnings to Book Equity factor on the other profitability factors, while Panel B regresses the other profitability factors on the Owner's Earnings to Book Equity factor. The annualized alpha, monthly coefficients, t-statistics, and R-squared values are presented in both panels. Gross Profits to Book Equity is shortened to GP/BE, Operating Profits to Book Equity to OP/BE, Cash-Based Operating Profits to Book Equity to CbOP/BE, and Owner's Earnings to Book Equity to OE/BE. The excess return of the market and the Fama-French SMB and HML factors are included as controls in all regressions.

Panel A			
	(1)	(2)	(3)
Alpha	4.87%	4.01%	1.42%
	[8.65]	[7.39]	[3.55]
GP/BE	0.33		
	[16.34]		
OP/BE		0.49	
		[19.02]	
CbOP/BE			0.84
			[36.59]
Mkt-RF	-0.04	-0.03	-0.01
	[-4.08]	[-3.38]	[-1.00]
SMB	-0.12	-0.06	-0.02
	[-7.66]	[-3.85]	[-1.47]
HML	0.01	0.03	-0.06
	[0.74]	[2.01]	[-5.67]
R^2	0.3190	0.3791	0.6754
Panel B			
	GP/BE	OP/BE	CbOP/BE
Alpha	-0.98%	0.22%	0.84%
	[-1.08]	[0.34]	[2.18]
OE/BE	0.83	0.69	0.78
	[16.34]	[19.02]	[36.59]
Mkt-RF	0.08	0.04	-0.00
	[5.02]	[3.38]	[-0.03]
SMB	0.13	-0.03	-0.02
	[5.00]	[-1.45]	[-2.35]
HML	-0.08	-0.09	0.06
	[-3.28]	[-5.10]	[6.22]
R^2	0.3077	0.3802	0.6806