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The financial performance of the most valuable brands: A global empirical investigation

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Abstract

We investigate the financial performance of the most valuable brands as provided by the publicly available Interbrand list on an annual basis. By applying standard multi-factor performance evaluation models, and the new five-factor model of Fama and French (2015), we observe that the most valuable brands outperform the market during the overall period from 2000 to June 2018 as well as during different market conditions. However, the extent of the outperformance is much larger during bear than during normal periods, suggesting that the most valuable brands tend to perform better during weak financial market periods. Moreover, we find that the outperformance is driven by only a few industries, e.g., business services, technology and retail. Analyzing the financial performance of the most valuable brands provided by Forbes and BrandZ reveals similar results to those of Interbrand.

Keyword: Business

1. Introduction

According to Warren Buffett, chairman of Berkshire Hathaway and one of the most prominent investors, a formidable barrier such as a company's being the low-cost producer or possessing a powerful world-wide brand is essential for sustained success. This article aims to analyze, whether an investment into stocks with a powerful

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world-wide brand have an enduring "moat" that protects excellent returns on invested capital, as Warren Buffett (2007) writes to his shareholders, and therefore helps to generate an outstanding performance.

Over the past few years, the value of a brand has become an important part of firm valuation. Amazon's brand value, for instance, increased by 19% p.a. from 4.5 billion USD in 2000 to 100.7 billion USD in 2018 and Apple's brand value even grew by 21% p.a. from 6.6 billion USD to 214.5 billion USD in the same period (Interbrand, 2000, 2018). Intangible assets, such as the value of the brand, do not have an obvious physical value, such as factories or equipment do, and their integration into the balance sheet is limited. However, they can be very valuable for a firm and critical to its long-term success or failure. A strong brand can serve as a competitive advantage which helps to succeed in the marketplace, for example it allows firms to set higher prices for their products and services, it helps to reduce the impact from price competition vs. other companies, it lowers price sensitivity of products and reduces substitutability (see e.g., Blattberg et al., 1995; Kaul and Wittink, 1995; Mela et al., 1997; Srivastava et al., 1998; Murphy, 1990; Ailawadi et al., 2003; Mortanges and van Riel, 2003). Therefore, the brand value of a firm is one of the most valuable intangible assets it can possess. The brand value in this article is the financial value of the brand. We are following the financial driven definition of Feldwick (1996): the total value of a brand as a separable asset - when it is sold, or included on a balance sheet. In other words − the financial value of consumers buying products and services because of the brand name or are paying a higher price for products of this company.

Firms recognize brand building as important, but the management is often challenged in proving its value for the company (see e.g. Doyle, 2000; Gummesson, 2002; Rust et al., 2004). As decisions are often based on financial terms, there has been rising interest among academics in understanding the value of a brand and its effect on shareholder value. Previous literature has often found a positive relationship between brand value and shareholder value (e.g., Kerin and Sethuraman, 1998; Chu and Keh, 2006; Barth et al., 1998; Stahl et al., 2012). In particular, Barth et al. (1998) argue that brand value estimates are significantly positively related to prices and returns and only incremental to accounting variables. Their findings indicate that brand value estimates capture information that is relevant to investors. Moreover, Conchar et al. (2005) find support for a relationship between advertisement and promotional spending and the market value of companies. That means that marketing activities are expected to deliver cash flows and shareholder value. In their event study, Dutordoir et al. (2015) analyze approximately 500 brand value announcements based on Interbrand's publicly available global lists. Their analysis covers the years 2001−2012 and they obverse significant abnormal stock returns regarding brand value announcement dates. The authors suggest that shareholders use the investments to reduce cash flow vulnerability.

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Literature on the performance of the most valuable brands is rare. As far as we know, there are only four papers which investigate valuable brands in terms of financial performance. Madden et al. (2006) is the first study to analyze the financial performance of the most valuable U.S. brands based on the lists provided by Interbrand in more details. They find that their U.S.-portfolio significantly outperforms the market during the period from 1993 to 2000. Moreover, they argue that valuable brands comprise large caps and growth stocks. In addition, Fehle et al. (2008) study a sample of U.S. firms with strong brands as defined by Interbrand in a period from 1994 to 2006. With respect to the Fama and French (1993) and Carhart (1997) four-factor model, they find that valuable companies have significant above-average returns. Hsu et al. (2013) examine the relationship between brand value and performance of companies from 2001 to 2010 against a market benchmark. The finding of Hsu et al. (2013) indicates that the brand portfolio outperforms the S&P index in various periods and generates a significantly positive outperformance. Based on Interbrand, Johansson et al. (2012) analyze the top brands listed on the U.S. stock exchanges. They find that the most valuable brands did not outperform the market in a four months period during the financial crisis of 2008. However, they find lower betas of high brand stocks during this period.

Previous literature predominantly analyzes the financial performance of the most valuable U.S. equities (see Madden et al., 2006; Fehle et al., 2008, or Johansson et al., 2012). However, in this study, we extend the perspective to the global market. In particular, we analyze an internationally diversified sample, including all of the most valuable brands on the Interbrand lists. To investigate the financial performance of the most valuable global brands, we apply standard and new multi-factor performance measurement models. To compare our results with previous US-based evidence (e.g. Madden et al. (2006)), we use the state-of-the-art Carhart (1997) four-factor model that controls for size, value and momentum. However, we also take into consideration the latest trends in asset pricing, employing the five-factor model of Fama and French (2015) that incorporates additional explanatory factors. Motivated by Johansson et al. (2012), we moreover intend to investigate the financial performance of the most valuable brands during different market states to examine whether there are differences between bear and normal periods. To the best of our knowledge, we are the first to investigate the most valuable brands in more detail. In particular, we conduct an industry-specific analysis to control for biases owed to the financial performance of the different industries the most valuable brand can be allocated to. Finally, we do not only consider the lists provided by Interbrand, but we also examine the most valuable brands provided by Forbes and BrandZ to ensure the robustness of our results. We are the first to use more than one list of the most valuable brands.

Our findings suggest that the most valuable brands outperform the market during the overall period from 2000 to June 2018 as well as during different market conditions.

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However, the extent of the outperformance is much larger during market turmoil than during normal periods, suggesting that the most valuable brands tend to perform better during bearish market conditions. Moreover, we find that the outperformance is driven by only a few industries that are in particular business services, technology and retail. Analyzing the financial performance of the most valuable brands provided by Forbes and BrandZ reveals similar results to those of Interbrand. We suggest that the outperformance is due to the nature of the most valuable brands.

The structure of the paper is the following: The next chapter provides information on the data and methods used in the article, chapter 3 reports the results and chapter 4 presents a conclusion.

2. Methods

To analyze the performance of the most valuable brands around the world, we examine the lists that are provided by Interbrand on an annual basis. The publicly available Interbrand data are most often applied in literature when measuring the financial performance of a brand (see e.g., Haigh and Perrier, 1997; Madden et al., 2006). Interbrand, which publishes its list of the world's most valuable brands online (see https://www.interbrand.com/ for further information) and earlier in the Financial Times and BusinessWeek, calculates the brand value covering an analysis of the financial performance of the branded products or services, of the role the brand plays in purchasing decisions, and of the brand's competitive strength.

According to Interbrand, the financial analysis measures the financial return to investors. During this process, Interbrand calculates how much of a company's total sales falls under a particular brand. Then, Interbrand projects five years of sales and earnings tied to each brand's products and services and calculates how much of these earnings is derived from the power of the brand (e.g. after operating costs, taxes). The role of the brand is the portion of the purchase decision attributable to the brand. Interbrand analyzes historical roles of brands and ranks the companies in an index. The third factor in the brand value calculation process is the strength of the brand. It covers the ability of the brand to create loyalty, and, therefore, helps to create sustainable demand for the product or service in the future.

Each company on the list must generate at least a third of its earnings from outside its home country, be recognizable beyond its base of customers, and have publicly available marketing and financial data. Interbrand only ranks the strength of individual brand names, not portfolios of brands (e.g. LVHM or Proctor and Gamble). The ranking also excludes airlines, as it is hard to separate the brands' impact on sales from factors such as routes and schedules. Pharmaceutical brands do not appear because consumers typically predominantly relate to the product. Due to the nature

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of the list, we only look at global brands. Often also local brands can have a competitive advantage (Schuiling and Kapferer, 2004).

The global Interbrand list is published since 2000. In our analysis, we cover all 18 versions of the lists from 2000 to 2018. To investigate whether branding creates shareholder value, we compare the financial performance of the brand-focused companies from the Interbrand list with that of the MSCI World which serves as market benchmark. To do so, we create a monthly value-weighted portfolio. Our portfolio is rebalanced annually to avoid a survivorship bias. Previous literature sometimes includes all companies that appeared on the list at least once (e.g. Madden et al., 2006) and keeps them in the sample to the end. We also have performed this procedure and find similar results. However, as expected, this procedure leads to a degree of overestimation of the results. All performance-based data are taken from Datastream.

Table 1 presents summary statistics for the characteristics of the 18 lists provided by Interbrand, including the number of firms, the total brand value as well as the average, minimum, and maximum brand value for the first list in 2000, the last list in 2018, and the average list.

Table 1 provides some interesting information about the composition of the Interbrand lists. The number of included firms is on average 99. The first list of the year 2000 only considered 75 firms, while all following versions of the list contain 100 companies per year. The total brand value considerably increased from 912 billion USD in 2000 to 1.872 billion USD in 2018. On average, the total brand value is 1.180 billion USD. Though the first list only contains 75 companies and therefore consequently has a smaller total brand value, the average total amount of brand value indicates that the brand value heavily increased within the past few years. The average brand value of a company is 14 billion USD. The average minimum brand value is 3 billion USD, whereas the average maximum brand value is 81 billion USD.

Table 1. Summary statistics.

List Characteristics				
		2000	**2018**	**Average 2000–2018**
Companies	[#]	75	100	99
Brand Value	[USD bn]	912	1872	1180
Average	[USD bn]	12	19	14
Min	[USD bn]	1	4	3
Max	[USD bn]	73	214	81

This table presents the summary statistics, with the number of companies in the list, the sum, the average, the minimum and the maximum of the brand value of the companies. All brand values are in billion USD.

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Fig. 1 gives a first impression to the performance of the most valuable brands. It presents a 100 USD investment in the most valuable brands (dotted line) and the market (solid line) in the period from January 2000 to June 2018. Within the first nine years, the brands portfolio performs slightly better, but nevertheless relatively similarly to the market benchmark. However, from 2009 onwards, the most valuable brands outperform the market. At the end, the investment in the market had increased to approximately 250 USD, while the investment in the most valuable brands more than doubled, growing to approximately 250 USD in 2014 and approximately 450 in 2018. These findings indicate that there could be differences between the valuable brands and the market in terms of financial performance. In particular, the most valuable brands list contains different industries that might drive the performance of the overall sample, e.g. automotive, energy, sporting goods, technology or retail. Thus, it appears helpful to further analyze this topic. In particular, we examine the following two hypotheses, which are formulated in a negative way:

Hypothesis 1: Irrespective of the market condition, the most valuable brands perform similar to the overall market.

Hypothesis 2: Irrespective of the market condition, all industry-specific subgroups of the most valuable brands perform similar to the market.

Abnormal returns may be model-specific. Therefore, we employ different multi-factor time series regression models to examine the financial performance of the most valuable brands. Our first model is the Carhart (1997) four-factor model. The model is widely used in financial literature (e.g. Lobe and Walkshäusl, 2016; Scheurle and Spremann, 2010) and allows us to compare our results with those of prior studies (e.g., Hsu et al., 2013). Considering new developments in performance

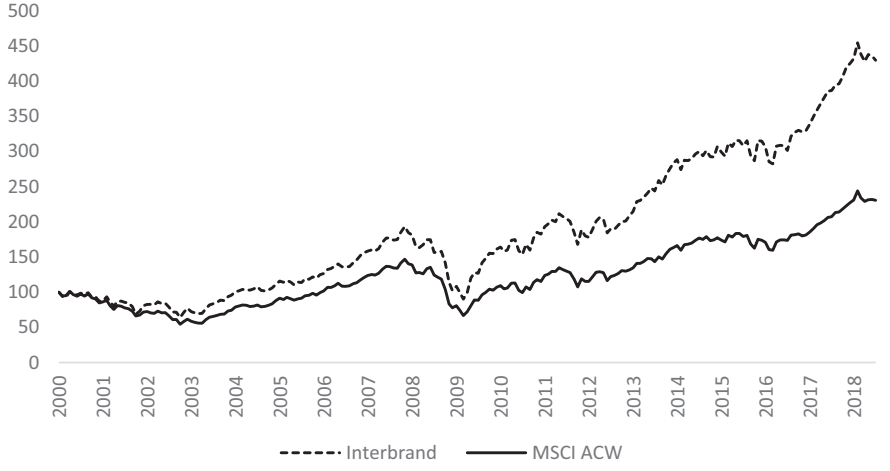

Fig. 1. 100 USD Investment in the Interbrand portfolio and the market benchmark. This figure illustrates the development of a $100 investment in the Interbrand portfolio (dashed line) over the sample period from January 2000 through June 2018. For comparison, a similar investment in the market benchmark (solid line) is included.

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measurement, we enhance our analysis by using the five-factor model of Fama and French (2015), which is an extension of the Fama and French (1993) model by including the factors RMW and CMA. The three-factor model of Fama and French (1993) takes into consideration the factors size and value, the Fama and French (2015) model, on the other hand, additionally takes into account further fundamentals of the underlying companies, e.g. information taken from balance sheets.

Using the approach of Nofsinger and Varma (2014), we analyze different time periods. From January 2000 to the end of our analysis, June 2018, we find two bear periods in the MSCI World Index. One is from March 2000 to October 2002 and the second is from October 2007 to March 2009.

This results into the following regressions:

$$R_i - R_f = D_B a_B + D_N a_N + b_i MKT + s_i SMB + h_i HML + w_i WML + e_i, \quad (1)$$

$$R_i - R_f = D_B a_B + D_N a_N + b_i MKT + s_i SMB + h_i HML + r_i RMW + c_i CMA + e_i. \quad (2)$$

Regression 1 characterizes the Carhart (1997) four-factor model. Regression 2 describes the Fama and French (2015) five-factor model. R_i is the monthly return of the portfolio and R_f is the monthly risk-free rate, i.e. the U.S. t-bill rate. D_N and D_B are dummy variables. D_N is one during the normal period and D_B is one during the bear periods. The symbol a represents the alpha. Alpha is a measure of the out- or underperformance. There is one alpha for the bear period (a_B) and one for the normal period (a_N). e_i is the regression residual. MKT is calculated as the monthly return of the MSCI World Index minus the monthly risk-free rate $\left(R_f\right)$. The factor SMB is the explanatory factor related to size and calculated as stocks with small market capitalization minus stocks with high market capitalization. HML describes the different returns of stocks with high and low book to market values. WML is the last factor of the Carhart (1997) model and considers winner vs. loser stocks. The factors RMW and CMA are the new factors of the Fama and French (2015) model. RMW is robust minus weak and CMA is conservative minus aggressive. They are calculated by subtracting the return of the weak operating profitability portfolios from the robust operating profitability portfolios and by subtracting the return on the aggressive investment portfolio from the return of the conservative investment portfolio. We use the global factors from Kenneth French's data library to explain our global stock returns. This is necessary, as the model factors are country-specific (see e.g. Fama and French (2012) and Griffin (2002)). To overcome autocorrelation and heteroskedasticity we use Newey and West (1987) robust standard errors.

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3. Results & discussion

3.1. General results

Table 2 presents the result of the Carhart (1997) four-factor model and the Fama and French (2015) five-factor model over the full sample period.

Our four-factor model results reveal that the most valuable brands outperform the market in the period from 2000 to June 2018. By controlling for size, value, and momentum, we find an alpha estimate of 0.43% per month that is significantly different from zero. This finding is in line with previous literature that observes an outperformance of valuable brands (e.g., Madden et al., 2006; Hsu et al., 2013). We find that the most valuable brands are slightly less risky than the benchmark and, moreover, our international Carhart (1997) model results support the evidence of negative SMB and HML factor loading, characterizing a bias towards large caps and growth stocks (e.g., Madden et al., 2006). The finding of large companies lies in the nature of the list, as the most valuable brands from Interbrand mainly consist of multibillion USD companies such as Apple and Toyota. The significant negative WML factor loading implies that valuable brands performed poorly within the past months. The Fama and French (2015) five-factor model results confirm the statistically significant outperformance of the four-factor model.

We separately investigate bear and normal periods. Fig. 2 shows the alphas during the two market phases, using the Carhart (1997) four-factor model and the Fama and French (2015) five-factor model.

Moving from the full period to bear and normal market periods reveals a changed picture. We find significant alphas in both periods, irrespective of the model. However, bear alpha estimates are much larger than normal alpha estimates. With alpha estimates of more than 0.80% per month, we find a very large outperformance. This finding indicates that the most valuable brands appear to do better during crisis markets than in normal periods. This finding is reasonable as the brand portfolio contains huge firms from many different industries equipped with strong intangible assets that

Table 2. Financial performance and firm characteristics of the most valuable brands.

	Alpha	Beta	SMB	HML	WML	RMW	CMA	R^2
4-Factor	0.43	0.98	−0.09	−0.17	−0.19			0.92
	(4.30)	(35.74)	(−1.38)	(−2.68)	(−5.52)			
5-Factor	0.44	0.99	−0.25	0.01		−0.19	−0.20	0.91
	(3.33)	(27.88)	(−3.1)	(0.11)		(−1.64)	(−1.25)	

This table presents alpha estimates and portfolio characteristics based on the factor sensitivities obtained from regressing the monthly excess returns of the value-weighted Interbrand portfolio on the explanatory factors of the four-factor and five-factor model. Robust t-statistics derived from Newey and West (1987) standard errors are reported in parentheses.

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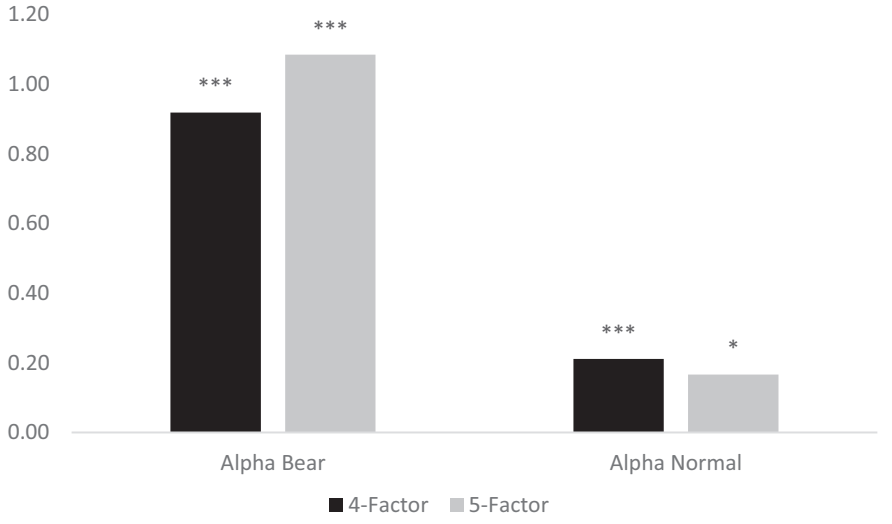

Fig. 2. Financial performance in bear and normal periods. This figure presents monthly alpha estimates for the Interbrand portfolio using the four-factor and the five-factor model over the bear markets, and normal markets. The asterisks give the statistical significance of the alpha estimates at the 1, 5 and 10%-level derived from Newey and West (1987) robust standard errors.

seem to be advantageous in steering a firm through bearish markets. However, our results do not confirm the U.S.-based findings of Johansson et al. (2012), who found an underperformance during the financial crisis of 2008. Covering a longer bear period and not only a period of four months during the financial crisis in 2008, we provide new insights into the U.S.-based findings of Johansson et al. (2012). Generally, our significantly positive alphas prove that the most valuable brand portfolio generates shareholder value.

In summary, the results in this subsection suggest a rejection of Hypothesis 1. Given the strong differences in the overall period as well as in bear and normal markets, we interpret our findings as convincing evidence that the most valuable brands differ from the market in terms of financial performance. Our findings indicate that the nature of the most valuable brands, which is characterized by huge size, a well-respected name and predominantly non-cyclical demand, is beneficial to their performance.

3.2. Industry-specific influences

The most valuable brands can be allocated to a broad variety of industries. Therefore, we aim to analyze whether industry-specific biases during the overall period from 2000 to June 2018 as well as during bear and normal periods exist. To do so, we divide our sample into 15 different industries and build value-weighted, industry-specific portfolios that are rebalanced annually. The industry taxonomy is provided by Interbrand. Table 3 reports the average number of firms included in each portfolio

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and the alpha estimates of the different industries during the overall period, bear and normal periods, when applying the four-factor model and the five-factor model.

Table 3 reveals vast differences between the various industries in terms of financial performance. With alpha estimates varying between 0.95% and 2.22% per month, the industries *business services*, *retail, sporting goods* and *technology* considerably outperform the market between 2000 and June 2018, when controlling for the model parameters size, value, momentum, profitability and investment. These four industries are the industries that predominantly contribute to the outperformance of the valuable brands in Table 2. However, other industries, e.g., apparel, automotive, beverages, energy, FMCG and restaurants do not generate any significant alpha

Table 3. Sectorial differences in terms of financial performance.

	# companies per year	Model	Alpha	Alpha Bear	Alpha Normal
Alcohol	6.13	4-Factor	0.78*	0.44	0.91***
		5-Factor	0.45	−0.01	0.61*
Apparel	3.40	4-Factor	0.71	0.62	0.74*
		5-Factor	0.46	0.76	0.36
Automotive	11.20	4-Factor	0.24	0.59	0.11
		5-Factor	0.16	0.90	−0.10
Beverages	3.33	4-Factor	0.32	0.25	0.35
		5-Factor	−0.08	−0.37	0.02
Business Services	3.07	4-Factor	0.95**	2.77***	0.27
		5-Factor	1.19**	3.51***	0.39
Electronics	6.87	4-Factor	−0.57	−0.69	−0.53
		5-Factor	−0.76*	−0.75	−0.77*
Energy	1.93	4-Factor	−0.04	0.54	−0.25
		5-Factor	−0.30	0.14	−0.46
Financial Services	9.53	4-Factor	−0.06	−0.17	−0.02
		5-Factor	0.26	0.74	0.09
FMCG	12.93	4-Factor	0.20	−0.04	0.29
		5-Factor	−0.11	−0.58	0.06
Luxury	7.87	4-Factor	0.51	1.61**	0.10
		5-Factor	0.24	1.48*	−0.19
Media	5.00	4-Factor	0.52*	0.46	0.55
		5-Factor	0.63**	0.79	0.57*
Restaurants	4.20	4-Factor	0.64	0.32	0.76*
		5-Factor	0.19	−0.32	0.36
Retail	2.73	4-Factor	2.16***	4.86*	1.15
		5-Factor	2.23***	5.39**	1.14
Sporting Goods	2.07	4-Factor	1.08***	2.00***	0.74*
		5-Factor	0.72**	1.77**	0.36
Technology	11.47	4-Factor	0.94***	2.59***	0.33
		5-Factor	1.18***	3.14***	0.50

This table presents alpha estimates for the full period, the bear period and the normal period on the factor sensitivities obtained from regressing the monthly excess returns of the value-weighted Interbrand portfolio on the explanatory factors of the four-factor model and the five-factor model. *, ** and *** indicate robust t-statistics derived from Newey and West (1987) standard errors on the 10%, 5% and 1% level.

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estimates and therefore appear to perform similarly to the market. Analyzing the beta and the factor sensitivities of the industry portfolios (not tabulated), we do not observe significant differences between the portfolios with significant positive (average beta 0.98) or normal performance (0.91).

Moving to bear and normal alpha estimates reveals a similar picture. While some industries achieve significant alpha estimates during bear periods, other industries do not generate any significant alpha estimates and therefore perform similarly to the market. Again, business services, retail, sporting goods and technology exhibit significant alpha estimates after controlling for size, value, momentum, profitability and investment. Their outperformance is exceptionally large with alpha estimates between 1.77% and 5.39% per month. This indicates that the previously shown outperformance of the brands portfolio can be explained by the performance of these four industries (see Fig. 2).

During normal periods, we find fewer alpha estimates that are significantly different from zero. Moreover, we observe that the alcohol and media industry are the only industries that display significant alpha estimates for both the four-factor and the five-factor model, albeit the alpha estimates are only significant on the 10%-level.

Our results reveal that few industries drive the financial performance of the most valuable brands. The outperformance is owed in particular to the financial performance of the industries *business services*, *retail, sporting goods* and *technology* during bear periods. We suggest that these industries in particular lead to an outperformance as their goods or services, respectively, are not cyclical and boosted by current societal trends, e.g. digitalization. As an example, business services (technology) include firms such as IBM and Xerox (Apple and Google), while retail contains Ebay or Amazon. This kind of companies contributes to the current trend towards digitalization, e-commerce and technological progress. Sporting goods include companies such as Adidas and Nike that represent a current trend towards healthy living and leisure activities. In addition, a vast number of people can afford the products of the previously mentioned firms. Other explanations of the better performance might be investor sentiment of non-institutional investors. Our data show that the non-institutional investors hold higher shares in the US based companies of the Interbrand list than comparable companies.

In summary, given such strong differences between various industries, we also have to reject Hypothesis 2 and conclude that some industries perform better than others. This finding sheds new light on previous studies, arguing that a portfolio of the most valuable brands outperforms the market (e.g., Madden et al., 2006). Moreover, this finding gives some indication that the selection process of Interbrand may not be the only reason for the good financial performance of the valuable brands.

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3.3. Robustness

Previous literature either analyzes value-weighted portfolios (Madden et al., 2006) or equal-weighted portfolios (Hsu et al., 2013) of the most valuable brands. Our above results are based on value-weighted portfolios. However, we also analyze equal-weighted portfolios in this section to ensure the robustness of our results. Thus, we build an equal-weighted portfolio to measure the financial performance of the most valuable brands provided by Interbrand. Moreover, we compare the results obtained for the Interbrand lists with those of the lists provided by Forbes and BrandZ. To the best of our knowledge, Forbes and BrandZ are the only two other famous institutes that provide publically available valuable brands lists on a global basis. The methodologies of the list providers are somewhat different. For instance, BrandZ conducts worldwide consumer research, while the others rely on a panel of experts. In addition, they start with a list of 10,000 different brands, whereas the latest Forbes list was built from a list with "more than 200 brands". Forbes requires the brands to have a presence in the U.S., eliminating some big brands like state-owned China Mobile, which is included in the list provided by BrandZ. Despite the differences, the core of companies such as McDonalds, Coca Cola, Samsung, Toyota or Mercedes are the same in all three lists. In the 2018 list, the last list in our analysis, 51 brands are included in all three lists, 35 are in two of the three lists, and 77 brands are in just one of the three lists.

Table 4 summarizes the alpha estimates for the three portfolios during the overall period from 2000 to June 2018, bear periods and normal periods.

Table 4. Performance of several brand value lists, equal-weighted.

	Alpha	Alpha Bear	Alpha Normal
Interbrand			
4-Factor	0.55	1.19	0.31
	(5.67)	(5.09)	(3.8)
5-Factor	0.52	1.29	0.25
	(4.18)	(4.19)	(2.59)
Forbes			
4-Factor	0.56	1.19	0.31
	(5.25)	(4.57)	(3.38)
5-Factor	0.55	1.33	0.28
	(4.10)	(3.98)	(2.54)
BrandZ			
4-Factor	0.61	1.18	0.40
	(4.92)	(4.11)	(3.64)
5-Factor	0.68	1.42	0.42
	(4.56)	(3.92)	(3.57)

This table presents alpha estimates for the full period, the bear and the normal periods obtained from regressing the monthly excess returns of the equal-weighted Interbrand, Forbes and BrandZ portfolio on the explanatory factors of the four-factor model and the five-factor model. Robust t-statistics derived from Newey and West (1987) standard errors are reported in parentheses.

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All three portfolios significantly outperform the benchmark during the full period from 2000 to June 2018 with alpha estimates from 0.55% (Interbrand & Forbes) up to 0.68% (BrandZ) per month. This shows that the selection process of the brands is not the key driver for the performance, as the differences of Interbrand, Forbes and BrandZ do not impact the performance to a large extent. In addition, the most valuable brands show the outperformance with respect to both financial models (4-factor or 5-factor model). Moreover, we observe alpha estimates that are significantly distinguishable from zero in both bear and normal periods. However, we find larger alpha estimates during market turmoil than during non-bearish periods. All in all, the results based on the lists provided by Forbes and BrandZ lead to similar findings to those of Interbrand, indicating that there is no bias owed to the stock selection process of Interbrand.

4. Conclusion

Intangible assets are becoming more and more important in today's financial environment. In particular, brand value can be considered as an important competitive advantage. In this study, we investigate the financial performance and underlying firm characteristics of the most valuable brands provided by Interbrand. We add to the literature by extending previous U.S.-based evidence to international markets (see p.ex. Madden et al., 2006 or Fehle et al., 2008). In particular, we are analyzing an internationally diversified portfolio of the most valuable brands. In addition, we separately investigate bear and normal periods to analyze whether there is a difference in performance. Moreover, we are the first to investigate whether there is an effect of the industry-allocation of the most valuable brands. By applying the Carhart (1997) and the Fama and French (2015) model, we consider the most recent developments in asset pricing.

We obverse that the most valuable brands outperform the market during the full period from 2000 to June 2018 as well as during bear and normal periods. However, the extent of the outperformance is much larger during market turmoil than during normal periods, indicating that valuable brands perform better during bear than during normal periods. Additionally, we find that the outperformance is driven by few industries, e.g., business services, technology, sporting goods and retail. Furthermore, we observe the fact that portfolios provided by Forbes and BrandZ display similar results to those of Interbrand. Generally, our results indicate that the most valuable brand portfolio generates shareholder value.

To conclude, we can state that our findings have a practical impact. We find that it is reasonable to allocate money to the most valuable brands as they generally show a tendency towards outperforming the market. Thus, we support Warren Buffet's statement that the brand of companies matters. However, an investor should be

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careful when solely investing in specific industries because performance varies considerably between different industries. Therefore, it appears to be more prudent to invest in the full sample of valuable brands than in specific industries.

Declarations

Author contribution statement

Gregor Dorfleitner, Felix Rößle, Kathrin Lesser: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Additional information

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