

CUTTING OUT THE MIDDLEMAN?

Understanding the Profitability of the Direct-To-Consumer Business Model

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Abstract

The surge in e-commerce transactions, driven by digital innovations, has attracted new brands and incumbents to venture into Direct-To-Consumer (DTC) sales. Current literature diverges on whether the DTC business model is more profitable than selling through wholesale or retail distribution channels. Yet, no prior research has empirically examined this despite the disruptive impact of DTC on the retail environment. Our study bridges this gap by analysing the potential effect of the DTC model on profitability, measured through profit margin and return on asset ratios. We also examine the moderating role of SG&A capital on DTC firms' profitability. We find that the DTC business model does not have an impact on profit margin or return on asset, but that the model requires significantly higher SG&A capital to remain viable. Further, we find no empirical evidence to support that SG&A capital alters the association between DTC and profitability. Finally, we discuss limitations of our research design and suggest avenues for further research.

Key words: Direct-To-Consumer; Business model; Profit margin; Return on assets; SG&A capital

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1. Introduction

Digital disruption has changed the landscape through which firms can engage with their customers (Gielens & Steenkamp, 2019). Perhaps the most profound disruption has been the emergence of online distribution channels, enabling direct interaction between consumers and manufacturers without the need to include wholesalers and retailers in the value chain (Verhoef et al., 2018). This transition and its implications are exemplified by Dave Gilboa, CEO of 'Direct-To-Consumer' ('DTC') brand Warby Parker, remarking that "through e-commerce, we are able to do all the design and production in-house and sell directly to consumers without any wholesale or any kind of middlemen along the way. As a result, we are able to cut out all the unnecessary licensing fees, all the unnecessary markups, and offer a product that normally costs several hundred dollars and offer it for less than a hundred dollars directly to consumers" (Shontell, 2017). As indicated by Gilboa, the DTC business model teases higher margins, but it also promises improvements to firm performance through access to new markets and customer segments, and more detailed insights into consumer behaviour (Schacker & Stanoevska-Slabeva, 2023).

The DTC business model saw significant growth of 45 percent during the Covid-19 pandemic, compared to retail e-commerce growing by 26 percent (Longfield, 2022). With purchases largely shifting online due to social distancing restrictions, firms either had to rely on their own online shops or strategically engage with key online channels. The prominence of the DTC model was also reflected in the financial markets, evidenced by a wave of firms in both the U.S. and Europe going public, in some cases at valuations exceeding established public firms (Jansen, 2021). Changed consumer behaviours, or rather forced consumer behaviours, combined with the alluring promise of a higher share price, encouraged incumbents, traditionally reliant on retail sales, to embrace DTC and open proprietary online brand stores (Rangan et al., 2021).

While DTC firms may leverage the advantages offered by the business model, achieving elevated long-term profitability has proven challenging. Schlesinger et al., (2020) argue that the initial success of DTC was enabled by low competition and an advertising arbitrage exploited on underpriced social media platforms. However, as more incumbents have embraced DTC strategies and digital advertising, competition in the market has intensified, driving up advertising costs on digital channels (Rangan et al., 2021). Sustaining traffic and

customer engagement on proprietary channels becomes costly given the substantial marketing efforts required for customer acquisition. Scalability is therefore crucial for DTC profitability, but achieving ample sales volume may not be feasible without a sizable and loyal customer base (Gielens & Steenkamp, 2019). Thus, leveraging established wholesale and retail distribution channels may prove more efficient in driving sales at lower costs. Although DTC firms can retain a larger portion of the sales price, marketing costs and the volume lost from abandoning wholesale raise concerns about the unit price lifts of DTC.

1.1 Purpose and Research Question

Despite the financial implications of the DTC business model, we observe that the academic discussion remains largely theoretical, reviewing whether intermediation or disintermediation is more beneficial for firm profitability. No empirical research has examined the implications of the financial performances of firms operating through a DTC model compared to through intermediaries. Accordingly, our objective is to explore whether DTC firms outperform or underperform in terms of profitability in comparison to non-DTC ('Traditional') firms.

We evaluate profitability through profit margin (PM) and return on asset (ROA) ratios, as these metrics are substantially impacted by a firm's business model (Fay et al., 2022; Collins et al., 2011). By including both metrics, we provide a comprehensive evaluation of the business models, with PM focusing on 'top line' outcomes (sales and sales growth) and ROA considering 'bottom line' (net profit). We also draw on the methodology of Fay et al. (2022) to examine the moderating role of marketing investments (i.e. Selling, General, and Administrative (SG&A) capital)¹ in driving the DTC-profitability association. We expect that profitability will remain consistent across the DTC and Traditional business models. Further, we assume that higher investments in SG&A capital will negatively affect DTC profitability, formulating our hypotheses accordingly. Our conceptual framework is presented in Figure. 1.

1. *Do DTC firms exhibit lower or higher profitability compared to non-DTC ('Traditional') firms?*

¹ SG&A refers to the costs related to advertising (if not explicitly disclosed in the income statement), sales force operations (e.g., compensation and commission), employee training (to build human capital), and other marketing-related activities (Fay et al., 2022).

2. How does SG&A capital influence the relationship between DTC and profitability?

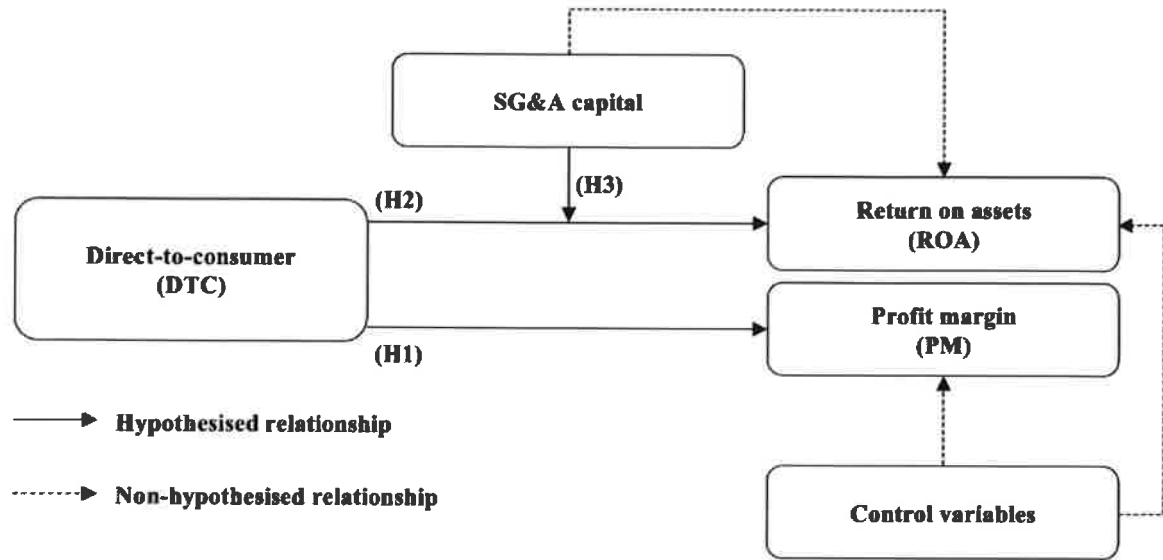


Figure 1. Conceptual framework

To test the hypotheses, we construct a sample of 79 publicly traded firms from 2019 to 2023. We use a dynamic panel data model to increase the sample size, address endogeneity concerns of DTC, and control for the persistent effect of historical profitability.

1.2 Contribution

Overall, our study has important theoretical and practical implications. Assessing the value of DTC is important for several reasons. First, it addresses a regret minimisation question - would a firm's financial performance have been jeopardised if it had persisted in relying on disintermediation rather than utilising intermediaries? We find that the DTC business model does not have an impact on firm profitability, but that the business model requires significantly higher SG&A to remain viable. Further, we find no empirical support that SG&A capital alters the association between DTC and profitability. Thus, the findings of our research somewhat contradict theoretical arguments suggesting that disintermediation leads to increased profitability, and that increased marketing efforts should lead to improved financial performance.

Second, our findings suggest that while the operational and strategic benefits of eliminating intermediaries, such as direct customer interaction and enhanced brand control, may indeed exist, they do not result in improved profitability. Given the importance of profitability for firm survival and the objective of maximising value for stakeholders, our research implications argue that the advantages of the DTC business model do not justify higher firm value. Similarly, incumbents seeking to integrate DTC strategies into their current business practices with the aim of improving performance should proceed with caution.

1.3 Outline

The thesis is structured into sections as follows. In Section 2, we review the relevant literature, including the key definitions about business models and business model innovation. We particularly focus on addressing the implications of the DTC business model. Section 3 outlines our hypotheses developed to address our research questions. Section 4 presents the methodology of the study, including discussion of the sample used, presentation of empirical models, and preliminary data analysis. The empirical results are presented in Section 5, followed by robustness tests to identify whether the empirical findings remain consistent in different scenarios. Lastly, in Section 6, we discuss the implications of the study, present limitations, and suggest future research directions.

2. Review of Literature

This section presents previous research and academic findings concerning the general definitions of business models and digital innovations within them, focusing specifically on the DTC business model. The section also discusses the profitability implications associated with the DTC model and discusses different methodologies for measuring the financial performance of business models.

2.1 Definition of Business Models

The current academic research on business models, thus far, lacks a widely accepted definition of a 'business model' and consensus regarding any ubiquitous features or composition (Fiet, 2013). In practice the operations of all companies, at any given time, adhere to a certain structure, dependent on the assets they possess and the nature of their value creation, with a set of characteristics that define the operational and strategic set-up of the company (Malone et al., 2006).

A consistent theme within academic definitions of business models is the emphasis placed on the notion of value creation. Tapscott (2001) reasons that a business model is related to how the core architecture of a firm deploys its resources to create value for customers. Similarities can be found with Porter's (1985) concept of a value chain model, which includes the full range of activities a business conducts to create competitive advantages and value in its industry. Porter (1985) suggests total revenue as a proxy for the measurement of value, by extension implying that value creation equals a firm's ability to generate revenue.

Complimentary definitions centred around the value creation aspect of firms include: Amit and Zott's (2001) discussion linking value creation to how firms design their transactions, Deck (2008) on Chesbrough's discussion of the two key functions of business models; value creation and value capture, and Zott and Amit (2010) defining a business model as the firm template on how to create shareholder value.

2.2 Business Model Innovation

As innovation has steadily progressed, new technologies have emerged, creating new opportunities and conditions for firms to create value (Gielens & Steenkamp, 2019). The rise of new market forces associated with innovative technologies have, throughout the past

decades, profoundly affected distribution and demand related variables in the market (McKee et al., 2023). In terms of digitalisation, defined by Hagberg et al. (2016) as the process of applying digital technologies to transform business activities and provide new avenues for value-creation, the advance of information technology over the past half-century has reduced the need for physical infrastructure and assets (Van Alstyne et al., 2016). The rise of online marketplaces is an example of a digital innovation affecting the strategic landscape of the industry, which has called for a novel approach to value creation, the possibility to exclude certain intermediaries (Gielens & Steenkamp 2019).

In their discussion on disruptive innovations, Gielens & Steenkamp (2019) place emphasis on the immediate effects of disintermediation. Specifically, they argue that the landscape of traditional business models has been altered, with manufacturers now able to forgo retailers in the value chain and gain direct access to consumers. Continuous developments in digitalisation and disintermediation have also allowed firms to interact directly with customers at greater volumes and convenience, utilising social media and other digital channels (Gielens & Steenkamp, 2019). Additionally, on the subject of customer interactions, Gielens and Steenkamp (2019) discuss the potential influence of digital services in improving customer journeys, by innovating non-transactional services and improving the response time to changing customer behaviours.

Apart from brand incentives and technological advancements, the evolution of business models, such as the DTC business model, have emerged concurrently with shifting customer behaviours. Today, younger generations in developed countries have virtually grown up in a digital world, influencing their shopping patterns and behaviours (Verhoef et al., 2018). Additionally, improvements in fulfilment capabilities such as the ease of ordering and on-time delivery, have enabled online-retailers to continue their growth as well as improve customer satisfaction levels, which has subsequently increased the rate of customer retention (Rao et al., 2011). Specifically, with regards to the DTC model, Kim et al. (2021) discuss additional factors aside from fulfilment capabilities that affect customer responses to DTC firms and illustrate the value that can be provided by the business model. They identified direct engagement with firms online and co-creation of value as key motivators in driving positive responses. Particularly, the rise of social media platforms has facilitated the ability to mutually exchange benefits.

2.3 The Direct-To-Consumer Business Model

The DTC business model can be traced back to the medicinal field, where in the 1990's an online business-to-consumer format concerning pharmaceutical products was established (McKee et al., 2023). Although vastly different from today's digitised model, it set the stage for direct sales strategies to further evolve. The emergence of e-commerce and direct communication channels online has created a new landscape for direct selling, which for a long time many companies treated as a niche or ancillary activity (Schacker & Stanoevska-Slabeva, 2023). Schacker & Stanoevska-Slabeva (2023) also point out that manufacturers' embrace of the DTC model is trending, as technology continues to develop and customer behaviours indicate an increasing shift towards online channels.

A prominent theme in the current research definition of the DTC model revolves around optimising the value chain, or business activity process, to achieve higher sales and market growth. Schacker & Stanoevska-Slabeva (2023) define the DTC model as a marketing, sales and customer relationship approach, in which firms interact with customers directly without the presence of intermediaries or platforms, through offline or online brand stores.

Implementation of the business model can typically be found within four distinct types of firms: direct selling companies, vertically integrated manufacturers, established consumer brand manufacturers, and DTC startups (Lienhard et al., 2021). A shared characteristic among DTC firms in general is the specialisation on a single, or a few related, products sold directly to consumers without intermediaries, reducing the dependency on retailers (Kim et al., 2021). This removal of middlemen in the value chain also allows firms to assume full control over branding and customer interactions (Gielens & Steenkamp, 2019; Shankar et al., 2021).

The removal of intermediaries offers several operational and strategic benefits, such as direct interactions with customers and direct access to their data. This mitigates the competitive disadvantages associated with a dependence on third parties for insights and decouples competitors' access to the firm's customer data (Schacker & Stanoevska-Slabeva, 2023). The additional touchpoints that the DTC model provides facilitate a greater degree of communication with consumers, enabling firms to collect customer feedback and gain insights into consumer behaviours (Gielens & Steenkamp, 2019). This direct feedback mechanism presents considerable improvements for understanding and adapting to consumer

preferences, enabling a greater product personalisation and customer satisfaction (Lienhard et al., 2021). Additionally, Kim et al., 2021 implies that direct interaction through digital media was found to foster stronger brand-consumer relationships, where innovativeness, uniqueness, and co-creation, that are commonly found amongst DTC firms, play a pivotal role in enhancing consumer perceptions.

Much academic research, on the other hand, implies that the landscape for DTC firms has become increasingly complex and competitive. Rangan et al. (2021) argue that the advantages of DTC strategies have diminished, as established players with significant resources have replicated and refined DTC strategies on blogs, search engines, and social media platforms. In like manner, Schlesinger et al. (2020) highlight that as the initial success of DTC firms gathered considerable industry attention, competition in the market has increased, driving up prices for advertisement on social media channels. At an earlier point of time, Schlesinger et al. (2020) states that the viability and success of new DTC firms was in large part enabled through the opportunity to exploit ‘under-priced social media platforms’, leveraging low-cost operations and minimal capital expenses to support high volumes of advertisement, thereby achieving ample outreach. But as the associated prices for advertisement rise, the previous ‘marketing arbitrage’ opportunity diminishes (Schlesinger et al., 2020). Although advertising and marketing make up a significant portion of expenses for DTC firms, (Banker et al., 2019) propose that investments in marketing, human capital, and customer-relationships are crucial for the build-up of intangible assets that deliver value long-term.

2.4 Profitability Implications of the Direct-To-Consumer Business Model

The academic discussion concerning the DTC model revolves around determining whether it is more beneficial for a firm to promote and sell goods through intermediaries, such as retailers or wholesalers, or directly to consumers, a process referred to as disintermediation. Disintermediation is the displacement or elimination of market intermediaries, enabling trade between buyers and manufacturers without the middle person whose added costs may exceed their provided value (Wigand, 2020; Gielens & Steenkamp, 2019). According to D’Aveni & Ravenscraft (1994), forward integration is associated with a reduction in transaction costs, which allows the manufacturer to retain a larger portion of each sale and achieve higher margins (Tsay & Agrawal, 2004). Through bypassing intermediaries, the manufacturer can

effectively mitigate losses associated with double marginalisation, i.e. when multiple layers of intermediaries in a value chain each apply their own markup to the price of a product (Gielens & Steenkamp, 2019; Kumar & Ruan, 2006).

Eliminating the dependence on retailers allows the manufacturer to reclaim autonomy over non-contractible decisions, for instance the pricing strategy (Gielens & Steenkamp, 2019), which enables them to earn full product margins (Götsch et al., 2023), as well as the option to offer products to consumers at lower or higher prices than traditional firms are charging in store (Rangan et al., 2021). As discussed by Gielens & Steenkamp (2019), the transfer of control rights from retailer to manufacturer is transforming the power dynamics in the relationship between the two, where a higher share of channel power typically correlates with higher channel profits. Leveraging a proprietary distribution channel offers an avenue for the manufacturer to directly access its end-users, providing another significant advantage for earnings. The direct interaction allows the manufacturer to gain proprietary knowledge of consumers, which otherwise would be mediated by retailers. This allows the firm to create differentiated and unique products that are more tailored to customer preferences (Schaker & Stanoevska-Slabeva, 2023; Gielens & Steenkamp, 2019).

While removing intermediaries may seem like a straightforward way to reduce costs and increase efficiency, Wigand (2020) argues that it can present difficulties, referred to as the ‘disintermediation dilemma’. The dilemma arises because eliminating intermediaries can result in significant challenges in coordinating stakeholder relationships and the value chain effectively, as they are part of an evolving digital ecosystem. Consequently, reintermediation may become necessary to address the gaps created by the removal of intermediaries, cancelling out the initial advantage of reducing transaction-related costs (Wigand, 2020).

There are also challenges associated with relying on proprietary channels instead of a retailer as these firms often lack the top-of-mind awareness, organisational infrastructure, and financial resources necessary to achieve customer engagement and generate sufficient revenues. Hence, the success of the DTC model may be limited to firms with a large and loyal customer base (Gielens & Steenkamp, 2019). Building a strong online brand community is therefore crucial for DTC firms, requiring significant efforts in marketing and sales capabilities, often relying heavily on social media and other digital marketing avenues to engage with consumers (McKee et al., 2023; Kim et al., 2021; Gielens & Steenkamp,

2019). Consequently, DTC firms incur significant costs to attract and convert new customers, referred to as 'Customer-Acquisition-Cost' ('CAC'). The revenue a customer generates over time should ultimately exceed, by an acceptable amount, the total costs associated with attracting, selling and servicing that customer, referred to as 'Customer-Lifetime-Value' ('LTV') (Rangan et al., 2021).

Rangan et al (2021) assert that DTC firms assess their financial performance using customers' projected LTV in relation to the CAC associated with recruiting the customer. The success relies on LTV exceeding CAC over time. This differs to traditional budgeting where profitability is measured by upfront allocation of all direct costs, including advertising and other long-term investments that are expensed immediately. Based on this, and with insight into the potential range of a product's margins, this allows a projection of the sales effort required to achieve break-even volume recovering the investment costs (Rangan et al., 2021). The authors argue that LTV, on the other hand, requires estimating several assumptions, including customer lifetime, purchase intervals, and average basket size, which can vary significantly over time. DTC firms also tend to frequently shift costs that should be attributed to CAC, such as upfront payments or influencer commissions, to SG&A expenses, creating misleading perceptions of the true LTV (Rangan et al., 2021).

2.5 Measuring Financial Performance of Business Models

Ratio analysis is frequently used to evaluate and compare companies' financial performance, as well as trends in their absolute and relative performance (Robinson et al., 2020). A substantial collection of academic literature has examined the use of ratios for forecasting stock returns and credit defaults (Ou and Penman, 1989; Altman, 1968). There are many ratios measuring different aspects of financial performance, all useful in assessing a company's overall ability to generate cash flows from its operations and evaluate associated risks (Robinson et al., 2020). According to Robinson et al. (2020), there are no authoritative bodies specifying exact formulas for computing ratios or providing a standard, comprehensive list of ratios. Further, the authors state that different ratios may be used in practice, and it is also not uncommon to find industry-specific iterations of ratios. However, a widely accepted categorisation of ratios are; activity, liquidity, solvency, and profitability ratios, each measuring different aspects of financial performance. These categories are not

mutually exclusive, as certain ratios are useful in assessing multiple parts of the business (Robinson et al., 2020).

Collins et al. 's (2011) empirical research implies that a firms' choice of business model significantly affects its profit margin (PM) (operating income to total revenues) and asset turnover (ATO) (total revenue to end-of-period total assets) ratios. Additionally, utilising both ratios when evaluating financial performance offers a more comprehensive view, including operational efficiency concerning both profitability and asset turnover. The authors observed that the individual components contributing to profitability influence the margin and asset turnover ratios of the business model. Revenue components are linked to the relative pricing policy, and expense components are associated with operational flexibility and capacity utilisation (Collins et al., 2011).

Fay et al. (2022) examine the impact of underexpansion on retailer profitability as measured by return on assets (ROA), which serves as a metric for financial and operational performance. Previous studies, like Collins et al. (2011), have solely focused on "top line" outcomes, such as sales or sales growth, rather than "bottom line" profit metrics like ROA. Fay et al (2022) argue that using ROA provides a more comprehensive assessment for evaluating the outcomes of various strategic decisions, such as underexpansion, pricing authority, and market orientation. Further, they suggest that a retailer's profitability is moderated by the firm's leverage, corporate culture, SG&A capital, and intangible assets.

3. Hypotheses

This section formulates a set of hypotheses reflecting our conjectures on (1) why PM and ROA ratios should not vary across DTC and non-DTC ('Traditional') firms based on their business models, and (2) the expected negative impact of SG&A capital investments on DTC profitability. Hence, ahead of presenting formal hypotheses, we predict that the DTC business model will not influence PM or ROA ratios, while DTC firms spending more on SG&A are expected to exhibit diminishing profits.

3.1 Direct-To-Consumer and Profit Margin Ratio

Crucial to our first hypothesis is the previous research suggesting that a firm's choice of business model has a pronounced effect on their profit margin (Collins et al., 2011). When analysing this relationship from a DTC perspective, the use of PM ratios allows us to compare figures across firms with different business models, and benchmark their respective performances. Relevant to profitability, we argue that the disintermediation, as found within the DTC business model, introduces several improvements to both revenue and cost, which are the two fundamental components that profit margins rely on.

Compared to traditional business models and their value chains, we expect the autonomy from disintermediation to offer the following revenue benefits: (1) greater control over pricing decisions and (2) elimination of double marginalisation. As suggested by Collins et al. (2011), one of the key drivers to generate increased revenue is the usage of pricing strategies, which we assume is an immediate advantage of the autonomy gained from cutting out retailers and wholesalers from the value chain. Similarly, when considering the removal of double marginalisation, referring to the accumulation of intermediary markups, firms are provided the ability to retain the full share of their products' sales prices. From the cost perspective, disintermediation also provides minimised costs in the value chain, perhaps most notably through the removal of transaction costs (D'Aveni & Ravenscraft, 1994).

However, when considering potential disadvantages to profitability, we single out the costs incurred by DTC firms through their customer acquisition model as a significant challenge. Our assumption rests on DTC firms' heavy reliance on advertisement to attract customers. As discussed in the literature, the comparatively high SG&A expenses associated with the business model have been set under further stress, with advertising expenses on digital

channels drastically increasing in the past years. According to Schelsinger et al. (2020), without under-priced marketing channels to achieve the necessary volumes of advertising, the savings from markups may not be sustained.

Additionally, drawing from the arguments of Gielens & Steenkamp (2019), we argue that DTC firms often lack the top-of-mind awareness, organisational infrastructure, and financial resources required to foster customer engagement and generate substantial revenues. Thus, achieving sales volume comparable to firms distributing through wholesale or retail channels may be challenging without a sizable and loyal customer base. There are also negative cost effects of maintaining proprietary channels, due to the inability to leverage retailers' established logistics systems, marketing efforts, and distribution networks.

These arguments lead us to question the previously established notion regarding DTC profitability compared to Traditional firms. Given these considerations, we evaluate that while disintermediation offers several advantages to revenue and cost, the costs associated with advertising and maintaining own distribution channels have a significant impact on the PM ratio. Therefore, we propose the following hypothesis:

Hypothesis 1. The Direct-To-Consumer model is not associated with PM.

3.2 Direct-To-Consumer and Return on Asset Ratio

The implication of ROA as a financial metric, reflecting financial and operating performance, has become a common practice for evaluating firm performance in consumer markets (Fay et al., 2022). Essentially, it reflects the firm's ability to generate earnings from its investments in assets, including inventory. Given that a significant part of consumer firms assets consists of inventory, maintaining high inventory turnover is essential for achieving a robust ROA (Robinson et al., 2020).

Recall from the literature that the removal of intermediaries by selling through own distribution channels allows DTC firms to assume full control over customer interactions, and consequently gain direct access to their purchasing behaviours. Initially, collecting this direct feedback provides improvements in understanding customer preferences. DTC firms can leverage this feedback by developing new products that differentiates from competition and

are better aligned with customer preferences (Lienhard et al., 2021; Shankar et al., 2021; Gielens & Steenkamp, 2019). Considering the disadvantages associated with reliance on third-parties for customer insights, we assume that Traditional firms have less capabilities to customise and guide the individual customer journey, and to obtain all relevant insights about individual customer preferences. We therefore argue that DTC firms are able to offer products that are more relevant to their customers compared to Traditional firms. The increased relevance of products would imply that customers are more likely to conduct a purchase or that there is a reduced risk of inventory becoming obsolete.

Despite the associated benefits, we conjecture that DTC firms exhibit challenges with inventory management. First, we share the concerns raised by Rangan et al. (2021) regarding the budgeting and forecasting approach of DTC firms, based on the expected LTV relative to CAC. Relying solely on LTV can distort the true value perception as the underlying assumptions can vary significantly over time. Specifically, we argue that DTC firms may overinvest in inventory due to inflated expectations of value creation, driven by inaccurate estimates about customer lifetime, customer purchase intervals, and average basket size. Second, we argue that DTC firms' heavy investments in marketing activities lead them to forecast increased sales, resulting in higher inventory accumulation. Although these outcomes may not immediately impact the income statement and thus the PM ratio, they negatively affect ROA due to the increased asset base.

Additionally, considering the PM implications discussed in Hypothesis 1, which suggest that the SG&A associated with the DTC model erode the margins preserved from markups, we argue that the profitability per DTC sales is low. As a result, the DTC business model is not expected to have a significant impact on ROA compared to firms distributing through wholesale and retail channels. Based on these arguments, we propose the following hypothesis:

Hypothesis 2. The Direct-To-Consumer model is not associated with ROA.

3.3 The Moderating Role of SG&A Capital

SG&A capital represents the organisational expenses accumulated through past investments in SG&A activities, including total expenses used on advertising, sales force activities,

employee training, and other marketing-related activities (Fay et al., 2022). The ratio is quantified by the fraction of SG&A expenses to total revenues. Although SG&A expenses are considered short-term and expensed annually, Fay et al (2022) argue that their impact persists beyond a single period and has the potential to generate customer demand over time. Hence, SG&A represents a critical organisational asset that requires time to accumulate, is challenging for peer companies to replicate, and provides substantial firm value. Based on this, SG&A should influence firm profitability regardless of the business model.

Although DTC firms, through their online presence can cover a wider market, they forgo the opportunity to exploit a retailer's established customer base. Therefore, investments in SG&A play a critical role for DTC firms to attract, cultivate, and maintain sustainable relationships with new and existing customers. Scaling for DTC firms will therefore require significant expenditures to be allocated towards SG&A. We assume that the lack of leveraging an existing broad consumer audience will prove to be more costly compared to growing through an already established wholesale channel. However, given the inherent need for substantial marketing expenditures in DTC, driven by the significant increase in digital advertising costs in recent years, we argue that the acquisition cost (CAC) exceeds the revenue generated per acquired customer (LTV). In other words, the associated marketing and advertising costs are greater than the sales gains generated from DTC firms' investment in additional SG&A.

We recognise that over time, sustaining and improving relationships with existing customers becomes less costly due to the established brand awareness and increased perceived brand equity (Verhoef et al., 2018). However, considering that many online DTC firms are relatively less developed compared to their wholesale peers (Schacker & Stanoevska-Slabeva, 2023), we conjecture that the positive long-term impacts of higher SG&A may not have been fully realised within the period studied. For these reasons, we expect that higher SG&A capital will result in lower PM and ROA ratios of DTC firms. Hence, we put forward the following hypothesis:

Hypothesis 3. Direct-To-Consumer firms which spend more on SG&A capital will exhibit lower or diminishing profitability.

4. Data and Empirical Methodology

4.1 Sample

We build our sample based on data supplied by consumer companies to the market through their public reporting. The data used in this study has been gathered from S&P Capital IQ, a well-established database used both in research and the financial sector. This study focuses on the European financial markets, including the largest and most liquid markets in Europe; Bolsa de Madrid, Borsa Italiana, Deutsche Boerse AG, Euronext Amsterdam, Euronext Paris, London Stock Exchange, OMX Nordic Exchange Copenhagen, OMX Nordic Exchange Helsinki, OMX Nordic Exchange Stockholm, Oslo Bors, and SIX Swiss Exchange. We include multiple markets to ensure that there are enough firms in each business model subset. From these markets, we have initially included all listed firms classified by Capital IQ according to the GICS method as ‘Consumer discretionary’, with their primary listing on one of the aforementioned markets. A handful of firms, classified by Capital IQ as ‘Consumer staples’, have been manually reclassified as ‘Consumer discretionary’ to better reflect their end-market exposure. Following the same approach, we have excluded retailers and wholesalers from consideration, as their position in the value chain is not applicable to our hypotheses. Other firms that do not fall under the categories of wholesalers/retailers, have missing observations, or do not have annual reports available in English, have also been excluded. We refer the reader to Table 1 for the selection procedure of the firm sample and firm-year observations.

Our final sample includes 79 public firms covering the period from 2019 through 2023, including 17 (21.52%) *DTC* firms and 62 (78.48%) *Traditional* firms. We did not extend the time frame due to many DTC firms being listed from 2019 and onward, which would have reduced our sample size. The designations ‘*DTC*’ and ‘*Traditional*’ are determined by the choice of distribution channel, as specified in the company’s last published annual report. The sample only includes firms that have operated under a DTC respective Traditional model throughout the entire sample period, i.e DTC is time-invariant. In total, our sample includes 316 firm-year observations. To ensure conformity in firm-year observations, companies with broken fiscal years have been restated to match the respective calendar year.

Table 1 Sample selection of firms and number of firm-year observations

	Stocks in sample
Initial sample from Capital IQ	17,169
Primary listings ²	(10,932)
Industry classification ³	(5,800)
Wholesale/Retailers	(79)
Excluding activities outside of scope and missing observations ⁴	(279)
<i>Subtotal of firms excluded</i>	<i>17,085</i>
Available firms in the final sample	79
Number of 'DTC' firms	17
Number of 'Traditional' firms	62
Firm-year observations	316
'DTC' firm-year observations	68
'Traditional' firm-year observations	248

Table 1. Sample selection and criteria for inclusion in the final sample, split by number of DTC and Traditional firms. Firm-year observations are based on the total number of firms in the final sample studied over a four year time period, from 2019 to 2023.

² Only companies with their primary listing on European exchanges included to ensure conformity with IFRS.

³ Includes firms classified by S&P Capital IQ as 'Consumer Discretionary' (incl. Manufacturers and distributors of automobiles and components, household durable goods, leisure products and textiles & apparel) and 'Consumer Staples' (incl. Manufacturers and distributors of food, beverages and tobacco, and producers of non-durable household goods and personal products) according to The Global Industry Classification Standard (GICS) methodology. GICS was developed by S&P Dow Jones Indices, an independent international financial data and investment services company and a leading provider of global equity indices, and MSCI, a premier independent provider of global indices and benchmark-related products and services. The GICS methodology aims to enhance the investment research and asset management process for financial professionals worldwide. It was designed in response to the global financial community's need for accurate, complete and standard industry definitions (GICS, n.d.).

⁴ Includes firms whose business models were considered to be outside the scope of consumer goods/ consumer-facing, missing observations in annual reports or annual reports not available in English.

4.2 Selection Bias of Direct-To-Consumer

Using the DTC and Traditional partition as our proxy for the business model may raise concerns about classification accuracy. As noted by Collins et al. (2011), a common impediment in related research is the absence of comprehensive proxies to accurately characterise a specific firm's business model across different industries. Given the absence of industry regulators that clearly delineate consumer firms based on their business models, we strictly adhere to the fundamental distinction between the DTC model and the Traditional model for classification to eliminate any potential self-selection biases. This classification depends on whether the firm exclusively sells through their own distribution channels (*DTC*) or through intermediaries (*Traditional*).⁵ Although we acknowledge the imperfection of this categorisation, employing this objective partitioning could help mitigate or reduce some of the potential confounding effects that may impact this research (Collins et al., 2011).

4.3 Endogeneity of Predictor Variables

Following the methodology of Fay et al. (2022), we build a dynamic panel data ('DPD') model to study the phenomenon of business models among publicly listed firms. The DPD model is suitable for our research setting due to two reasons. First, the model utilises panel data, which comprises observations on multiple firms over multiple time periods, thus providing a larger sample size. As only a few publicly listed firms in Europe operate under a pure DTC model, this approach allows for a more extensive dataset for analysis.

Second, this model addresses the concern that not all of our predictor variables are strictly exogenous, and are expected to correlate with the error term. For example, there could be unobservable factors for our focal independent variable, DTC, such as management decisions or market conditions that are correlated with the firm profitability. Since we are not able to observe all the underlying factors, we need to find an appropriate way to deal with such omitted variable problems. In our research, identifying exogenous shocks or external instruments for all endogenous variables is difficult. By utilising a DPD model, we can temporarily separate our dependent variables measuring profitability (i.e. PM and ROA) from the predictor variables (which lag by one time period compared to the dependent variables ($t - 1$)), to capture the persistent effect of historical firm performance. This allows us to use the

⁵ The classification is not strictly exclusive to 'Traditional' consumer firms; however, revenues generated from DTC operations are not material to significantly impact the classification. Similarly, for DTC firms, revenues generated from potential wholesale distribution are not material.

‘lagged values’ as instruments for endogenous variables, and as such address the endogeneity concern of omitted variable bias.

4.4 Model Specification

Model 1a and 1b presents our formal empirical models in year t to test our hypothesis concerning the profit margins and asset turnover ratios across business models. As demonstrated by the models, we measure our dependent variables at year t while all predictors are measured at year $t - 1$ to help mitigate concerns about contemporaneous endogeneity. To examine the profit margins conditional on business model, we specify Model 1a as follows:

$$PM_t = \beta_0 + \beta_1 PM_{t-1} + \beta_2 DTC + \Theta Controls_{t-1} + \varepsilon_t \quad (1a)$$

where PM_t represents profit margin at year t (measured as the ratio of operating income to total revenue), that is, profitability. Similarly, to examine the return on asset ratio conditional on business model, we specify Model 1b as follows:

$$ROA_t = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 DTC + \Theta Controls_{t-1} + \varepsilon_t \quad (1b)$$

where ROA_t represents the return on asset ratio at year t (measured as the ratio of net income to end-of-period total assets), that is, profitability; DTC_t is a time-invariant dummy variable that is equal to 1 if the firm operates under a DTC model, and 0 otherwise; $Controls_t$ comprises several control variables including SG&A capital, leverage, intangibility, physical assets, cash holdings, and the natural log of firm size. These variables have been adopted extensively in related literature, where they have been shown to influence the relative profitability of profit margins and asset turnover ratios (Fay et al., 2022); respectively ε_{t-1} represents the error term. We refer the reader to Table 2 for comprehensive variable definitions. Fay et al (2022) also include year fixed effects as a control variable in their model to control for time-specific factors that could influence the analysis. Due to our limited sample size, we will not include the control variable.

Given the above Models 1a and 1b, Hypothesis 1 and 2 leads us to predict that $\beta_2 = 0$ for both models. More specifically, we would expect $\beta_2 = 0$ as we assume that the DTC business

model does not have a significant impact on PM or ROA compared to firms distributing through intermediaries. Our results of estimating the two models are reported in Table 6, and we defer the discussion of the results until then. To examine the moderating effect of SG&A capital on DTC profitability (i.e. PM and ROA), we specify Model 2a and 2b⁶ as follows:

$$PM_t = \beta_0 + \beta_1 PM_{t-1} + \beta_2 DTC + \beta_3 (SG\&A\ Capital)_{t-1} + \beta_4 DTC \times (SG\&A\ Capital)_{t-1} + \Theta Controls_{t-1} + \varepsilon_t \quad (2a)$$

$$ROA_t = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 DTC + \beta_3 (SG\&A\ Capital)_{t-1} + \beta_4 DTC \times (SG\&A\ Capital)_{t-1} + \Theta Controls_{t-1} + \varepsilon_t \quad (2b)$$

where $(SG\&A\ Capital)_{t-1}$ represents firms' SG&A capital at year t and is included as a predictor in the above models. SG&A capital is also included as an interaction term between the DTC variable and the SG&A to capture the moderating effect of SG&A expenditure levels. All else is equal to Model 1a and 1b. The models allow us to assess the moderating role of SG&A capital on DTC and its impact on PM and ROA. Hence, to validate Hypothesis 3, we expect $\beta_4 < 0$ as we assume that DTC firms engaging in more SG&A investments will be less profitable with regards to PM and ROA.

⁶ SG&A capital is not included in Controls of Model 2a and 2b. Instead, it is presented as an independent variable within the models to examine the effect of SG&A on profitability irrespective of firm type.

Table 2 Variable definitions

Variables	Definition
(1) ROA	Net income as a fraction of total assets.
(2) PM	Operating income as a fraction of total revenue.
(3) DTC	An indicator equal to 1 if the firm exclusively sells through their own distribution channels (DTC), and 0 otherwise.
(4) SG&A Capital	The stock of SG&A capital as a fraction of total revenue; SG&A capital is calculated as the total expenses used on advertising, sales force activities, employee training, and other marketing-related activities (Fay et al., 2022). For comparison purposes in the mean analysis, SG&A capital is measured as a dummy variable equal to 1 if the firm has above median SG&A capital (high), otherwise 0 (low). The median SG&A capital for this dataset is .284.
(5) Leverage	Total debt as a fraction of total assets.
(6) Intangible assets	Intangible assets as a fraction of total assets.
(7) Physical assets	Net property, plant, and equipment as a fraction of total assets.
(8) Cash holdings	Cash and short-term investments as a fraction of total assets.
(9) Firm size	The logarithm of total assets (SEK million). Controlling for the size of the firm adjusts for the imbalance between the number of firm observations.

Table 2. Variables used in the analysis and their descriptions.

4.5 Preliminary Data Analysis

A mean analysis allows for an insight into the potential difference in financials between DTC and Traditional firms. Looking at Table 3, there is no difference in profitability between business models either for PM or ROA, however it is significant that DTC firms generally have higher SG&A capital compared to Traditional firms.

Table 3 Mean analysis between firm type

Variable	Mean DTC	Mean non-DTC (Traditional)	Mean difference (t-statistics)
PM	0.049	0.065	1.006
ROA	0.027	0.032	0.301
SG&A	0.370	0.290	-3.377*
Leverage	0.353	0.382	0.720
Intangible assets	0.285	0.184	-3.104*
Physical assets	0.218	0.242	1.003
Cash holdings	0.198	0.155	-2.298*
First size (log)	3.486	3.727	2.091*

Note: * shows significance at the 0.05 level

Table 3. Mean comparison of characteristics between DTC and non-DTC (Traditional) firms. We use a t-test to test whether the mean values are different between the firm types, as indicated by the significance of the t-statistics.

We also perform a mean analysis to compare the profitability of DTC firms based on whether their SG&A capital is above (high) or below (low) the median. Table 4 shows that there is no statistically significant difference for PM or ROA between DTC firms with high or low SG&A capital.

Table 4 Mean analysis between DTC firms

Variable	DTC, High SG&A	DTC, Low SG&A	Mean difference (t-statistics)
PM	0.047	0.053	0.219
ROA	0.021	0.045	0.794
SG&A	0.446	0.156	-12.931*
Leverage	0.336	0.400	0.719
Intangible assets	0.286	0.280	-0.085
Physical assets	0.219	0.217	-0.039
Cash holdings	0.197	0.201	0.093
Firm size (log)	3.660	2.994	-4.700*
Note: * shows significance at the 0.05 level			

Table 4. Mean comparison of characteristics between DTC firms with SG&A capital below and above the median of our dataset at .284. We use a t-test to test whether the mean values are different between DTC firms with high or low SG&A capital, as indicated by the significance of the t-statistics.

5. Empirical Results

5.1 Regression Diagnostics

Table 5 presents the summary statistics of the variables and the correlation matrix. We find that the average firm in our sample is profitable, with mean PM of .061 and mean ROA of .031. Further, we observe that although DTC is not significantly correlated with either of the profitability measures, it exhibits a positive and significant correlation with SG&A capital. There is also a significant negative correlation between SG&A and both PM (-.384) and ROA (-.393). Additionally, all control variables exhibit significant correlation with PM and ROA, except for physical assets, which show no significant correlation with either PM or ROA, and intangible assets in relation to ROA. This suggests that the control variables may serve as predictors of profitability.

There is a notable absence of correlation among several control variables, indicating that they are not redundant in their explanatory power and mitigate the risk of multicollinearity in the regression analysis. To evaluate multicollinearity, we calculate the variance inflation factors (VIF) for our independent variables. Our findings reveal that multicollinearity is not a concern in our empirical context, as all VIFs are below 2 (Fay et al., 2022).

To estimate models (1a), (1b), (2a) and (2b) we use ‘Ordinary Least Squares’ regressions (‘OLS’). We use lagged observations to deal with the problem of endogeneity, rising from simultaneity bias. A Durbin-Watson statistic was conducted to determine whether the errors in the models are serially correlated. We find no evidence of serial correlation, as indicated by the insignificant Durbin-Watson statistics for all models. Additionally, specification tests find no presence of heteroscedasticity within our sample.

Columns (1) and (2) in Table 6 report the results of our PM and ROA regressions of Model 1a and 1b, which examine Hypotheses 1 and 2. First, we find that the coefficient of *DTC* in both regression models lack statistical significance in explaining PM (*PM_{it}*) and ROA (*ROA_{it}*). Essentially, within our data set, there is no evidence of a relationship between DTC and profitability. These findings align with the arguments that the DTC business model exerts no discernible influence on PM or ROA, compared to Traditional firms distributing through intermediaries. This empirical evidence provides support for validating Hypotheses 1 and 2.

Second, although not the primary focus of our research, our regression analysis shows that cash holdings at .098 ($p < .05$) and firm size at .014 ($p < .05$) exhibit statistical significance in explaining the variation in PM. Similarly, SG&A at (- .065) ($p < .10$), leverage at (- .056) ($p < .001$), and cash holdings at .115 ($p < .05$) are found to be significant in explaining the variation in ROA. The adjusted R-squared of .713 for the PM regression and .559 for the ROA regression indicate a moderate level of explanation of the variance. Thus, we could argue that there are doubts regarding the explanatory power of the control variables in our models. The insignificance of certain control variables could potentially be attributed to our relatively small sample size. Compared to Fay et al. (2022), which utilised a sample of 1,001 observations, the smaller sample size in our study may limit the statistical power to detect significant effects. However, considering that we apply Fay et al. (2022) approach throughout our study, we will continue to include all control variables in our models.

Columns (3) and (4) include the moderating effect of SG&A capital in explaining profitability for DTC firms. We find no statistical significance in the interaction term for either PM or ROA, indicating that the relationship between a DTC firm and SG&A expenditure does not significantly impact profitability. This implies that the influence of the DTC business model on profitability remains unaffected by SG&A levels, contrary to Hypothesis 3, where we expected that the effect of the DTC model on profitability would vary depending on the level of SG&A. However, we observe a negative relationship in the coefficient of *SG&A Capital* (β_3) at (- .068) ($p < .10$) on ROA. This significant negative relationship provides evidence that SG&A are associated with a lower ROA, irrespective of firm type. However, no statistically significant evidence was found regarding a relationship between SG&A and PM, although the coefficient indicates that the relationship is negative as well. Overall, our empirical results provide support for Hypotheses 1 and 2, but not for Hypothesis 3.

Table 5 Descriptive statistics and correlation matrix

	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PM	0.061	0.153	1.000								
(2) ROA	0.031	0.161	N.A.	1.000							
(3) DTC	0.217	0.413	-0.044	-0.014	1.000						
(4) SG&A	0.308	0.195	-0.384*	-0.393*	0.169*	1.000					
(5) Leverage	0.376	0.393	-0.437*	-0.555*	-0.031	0.405*	1.000				
(6) Intangible Assets	0.206	0.191	0.127*	-0.046	0.219*	0.036	0.061	1.000			
(7) Physical Assets	0.237	0.157	0.025	0.054	-0.062	0.058	0.077	-0.362*	1.000		
(8) Cash Holdings	0.164	0.134	0.187*	0.205*	0.134*	-0.015	-0.150*	-0.296*	-0.189*	1.000	
(9) Firm Size	3.674	0.912	0.360*	0.116*	-0.108	0.090	-0.012	0.195*	0.320*	-0.077	1.000

Note: * shows significance at the 0.05 level ; S.D. = standard deviation; N.A. = non applicable

Table 5. Summary statistics of the variables and the correlation matrix.

Table 6 Regression diagnostics⁷

		Model 1a	Model 1b	Model 2a	Model 2b
		PM (t)	ROA (t)	PM (t)	ROA (t)
DTC	[H1]	-0.004	0.000	-0.003	-0.005
	[H2]				
DTC × SG&A Capital	[H3]	—	—	-0.004	0.014
SG&A Capital	[H3]	-0.033	-0.065*	-0.033	-0.068*
Leverage		-0.019	-0.056***	-0.020	-0.056***
Intangible Assets		0.031	0.022	0.031	0.022
Physical Assets		0.008	0.048	0.008	0.048
Cash Holdings		0.098**	0.115**	0.098**	0.115**
Firm Size		0.014**	0.005	0.014**	0.005
PM (t - 1) / ROA (t - 1)		0.730***	0.593***	0.730***	0.593***
Durbin - Watson		N.S.	N.S.	N.S.	N.S.
Adjusted R-Squared		0.713	0.559	0.712	0.557

Notes: shows significance at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$; N.S. = non-significance.

Table 6. Reports the regression diagnostics for the tested Models, and exhibits the main results of the research. We utilise OLS regressions for estimating the models.

⁷ Results remain nearly identical in coefficients and significance when including year fixed effects as a control variable in the regression diagnostics. Adjusted R-squared and standard errors are also consistent.

5.2 Robustness Tests

We perform robustness tests to identify whether our findings remain consistent under alternative scenarios. To address potential concerns regarding comparability and endogeneity, we create a matched sample. Following a similar approach as Nguyet et al. (2019), we apply the ‘Propensity Score Matching’ method to create two comparable groups: a control group of Traditional firms, and a treatment group with DTC firms. We conduct a probit regression, using the controls specified in our models, to estimate propensity scores. Subsequently, the nearest neighbour matching method, with a 2:1 ratio, is employed. Given our limited sample size, we choose to use a 2:1 ratio of the matched sample to enhance statistical power and improve the robustness of the results.⁸

Followingly, we re-conduct the OLS regressions from Table 6. Although the coefficients were similar across all models when using the matched sample, there were differences in significance compared to the results from the unmatched sample. Notably, none of the control variables were significant in PM. However, SG&A capital and leverage showed significance when ROA was considered as the dependent variable. Additionally, across all models, the values for adjusted R-squared and standard errors remain similar. We recognise that our initial observations were limited in terms of sample size. Employing matching further diminishes the sample size, potentially compromising the reliability of comparisons between our sample groups, and thus affecting the validity of our findings. Moreover, a smaller sample increases the risk of imbalances between the matched groups, potentially introducing bias into our analysis.

⁸ Regression results using a matched sample, with a 1:1 ratio, show similar patterns and values as our main findings in Table 6 and robustness check in Table 7, albeit, with less significant result.

Table 7 Robustness checks

		Model 1a	Model 1b	Model 2a	Model 2b
		PM (t)	ROA (t)	PM (t)	ROA (t)
DTC	[H1]	-0.002	-0.002	-0.015	-0.018
	[H2]				
DTC × SG&A Capital	[H3]	—	—	0.037	0.046
SG&A Capital	[H3]	-0.031	-0.077*	-0.041	-0.089*
Leverage		-0.012	-0.059**	-0.011	-0.057**
Intangible Assets		0.011	0.005	0.009	0.003
Physical Assets		0.017	0.047	0.017	0.046
Cash Holdings		0.014	0.068	0.010	0.063
Firm Size		0.003	0.003	0.002	0.002
PM (<i>t</i> - 1) / ROA (<i>t</i> - 1)		0.800***	0.599***	0.799***	0.598***
Durbin - Watson		N.S.	N.S.	N.S.	N.S.
Adjusted R-Squared		0.784	0.588	0.783	0.586

Notes: shows significance at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$; N.S. = non-significance.

Table 7. Robustness checks using the ‘Propensity Score Matching’ method for two comparable sample groups in a 2:1 ratio. OLS regressions were then utilised for estimating the respective models.

6. Discussion and Conclusion

The DTC business model has received considerable industry attention for its approach of selling directly to customers, eliminating the need to collaborate with wholesalers and retailers. Most notably, the model has garnered recognition for its profitability implications through internalising trade margins. Whilst bypassing intermediaries should capture more revenue from each sale, operating direct sales channels inherently requires higher SG&A expenses compared to leveraging established capabilities from retailers (Gielens & Steenkamp, 2019). Also, considering the costs, SG&A often constitutes a significant share of DTC firm's expenditures, given the considerable surge in digital marketing prices in recent years (Schlesinger et al., 2020). Theoretical implications in the literature diverge on whether the DTC business model is more profitable than selling through traditional distribution channels. Yet surprisingly, no prior research has explored this empirically despite the disruptive impact of DTC on the retail environment. We analyse data from listed European firms to examine the potential influence of a firm's business model on profit margin and asset turnover ratios. Specifically, we argue that the DTC business model should affect profitability components (revenues and costs), but that the benefits of DTC from disintermediation are offset by the associated negative effects. Therefore, despite differing business models, our assumption is that there is no difference in PM and ROA between DTC and Traditional firms. However, we do expect reduced profitability for DTC firms with higher SG&A spending, as we assume that the costs exceed the generated revenue from the additional marketing efforts. To test this conjecture, we follow the approach of Fay et al. (2022).

The empirical results indicate that the DTC business model does not have a significant impact on profitability. Although the literature suggests that higher channel power brought on by disintermediation should lead to higher profits, our results could not confirm this due to the insignificance of the PM coefficient. Similarly, the lack of significance in the ROA coefficient suggests that direct channel interaction might not inherently improve or distort return on assets. Consequently, we were unable to determine whether the suggested benefits of the DTC model, such as gaining more control over the customer experience and acquiring direct access to consumer data, have any implications on a firm's asset turnover. However, our mean analysis revealed that DTC firms in general have significantly higher SG&A capital compared to Traditional firms. Although research indicates that SG&A is crucial for driving customer demand over time, especially for DTC firms in attracting and converting new

customers, our empirical findings show that having higher SG&A does not translate into improved financial performance. Contrary, although DTC sales should capture larger margins through disintermediation compared to wholesale, the additional investments required in SG&A capital indicates that any gains are offset. We argue that these findings support the theoretical implications of Schlesinger et al. (2020), suggesting that the success of DTC firms cannot be sustained if they are not able to leverage under-priced marketing channels to maintain the high advertisement volumes needed.

Our findings could identify that the effect of lagged SG&A capital has a significantly negative impact on ROA, regardless of firm type. Similarly, we observe a negative impact of SG&A on PM, although the effect is not statistically significant. This could explain the absence of a difference in firm profitability between the business models. As noted, the higher SG&A DTC firms have appear to cancel out the savings from markups. While it is difficult in our research setting to identify the exact reason for this negative relationship, one plausible explanation could be the delayed impact of SG&A on financial performance. Banker et al. (2019) argue that SG&A investments today are crucial for the build-up of intangible assets to deliver value in the long-term. Our results indeed indicate that intangible assets have a positive, but not statistically significant impact on profitability. However, we argue that the costs accrued for SG&A in the previous period ($t - 1$) might not have been materialised during the studied sample period. Strategic initiatives such as market expansion, often require considerable time to yield results. For instance, many DTC firms pursued aggressive growth strategies during the pandemic in response to the increased number of customers shifting to online marketplaces (Rangan et al., 2021). Additionally, the pandemic could also explain that SG&A investments made in 2019 and onwards did not manifest in increased profitability, given the disruptive impact it had on businesses.

Although we observe a negative relationship between SG&A and PM and ROA, our empirical setting does not explain why the significance levels for PM and ROA are not consistent. Based on Collins et al. 's (2011) and Fay et al. (2022), profit margin and return on assets measures different aspects of profitability. PM only measures operational efficiency with respect to sales, while ROA considers net income and the asset base. A plausible explanation for the discrepancy in significance level may be that firms heavily invested in marketing activities in ($t - 1$) have forecasted increased sales, and consequently accumulated more inventory. Should these marketing investments fail to drive substantial sales growth,

perhaps due to external factors like the pandemic, this outcome would not be reflected on the income statement but would affect ROA negatively due to the increased asset base. We suggest that a qualitative analysis breaking down firm strategy, marketing campaigns, sales growth, and inventory levels would offer deeper insights into the underlying reasons.

Our results further imply that the profitability of DTC firms remains consistent regardless of the level of SG&A capital, as evidenced by the lack of statistical significance in the interaction term of PM and ROA. Our mean analysis supports this observation, where DTC firms with SG&A above median do not underperform or outperform firms with lower SG&A. Although not significant, we do observe a positive effect on ROA with DTC firms having higher SG&A expenditures. However, the results initially indicate that the profitability of DTC firms remains similar regardless if the firm chooses to invest more or less in SG&A. This finding challenges the arguments of McKee et al. (2023), Kim et al. (2021) and Gielens & Steenkamp (2019), who state that higher SG&A spending for DTC firms should lead to a larger customer base and consequently drive more sales. The results also contradicts our hypothesis, which stated that excessive marketing efforts by DTC firms would result in lower profitability due to the associated high costs. As such, we argue that it is crucial to understand the reasons behind why similar profitability outcomes are observed across DTC firms with varying levels of SG&A; if it is because of brand recognition, an aggressive expansion strategy prioritising growth over profitability, or if it is actually a cause for concern. Our point is that different levels of SG&A could still be explanatory in DTC firms being less or more profitable, but a more comprehensive understanding of underlying firm strategy is necessary to draw definitive conclusions. We leave it for future research to investigate further.

We also raise concerns about the results considering the uncertainty of the explanatory power of the control variables in our models. Given that the adjusted R-squared suggests a moderate level of variance explanation, there could be a risk of biased or inaccurate estimates regarding the relationship between the control variables and dependent variables in our models. One potential reason for the insignificance of certain control variables could be our relatively smaller sample size ($N = 316$) compared to Fay et al. (2022) ($N = 1,001$), where all control variables were found to be significant in explaining the relationships. We do observe a significant negative effect of lagged SG&A capital and leverage on ROA, consistent with Fay et al. (2022). Similarly to Fay et al. (2022) we also identify that cash holdings have a positive effect on profitability. Although these effects are not significant, we note that having more

intangible and physical assets in the past are associated with improved profitability. We argue that this underscores the strategic importance of investing in assets for driving operational efficiency. Additionally, our findings reveal that the impact of lagged firm size on PM is positive and significant, indicating as Fay et al. (2022) that larger firms perform better.

In our study, we help bridge the gap between current theoretical research about the profitability implications of DTC and its practical implications. We do this by offering empirical evidence of the financial performance of DTC and Traditional firms, thus contributing to the existing body of literature aimed at evaluating the financial benefits and drawbacks of employing a DTC strategy. Despite the challenges associated with comparing these business models, we shed light on a previously unexplored empirical area and find that the DTC business model does not exhibit significant profitability advantages. For future research, we find that a key element in drawing more definite conclusions involves using a larger sample size and extending the study period over a longer time frame to reduce the impact of individual years. We also advise to conduct qualitative assessments of firm strategy before reaching conclusive stances about profitability.

6.1 Limitations

A number of limitations apply to our study. First, due to the usage of a DPD model, potential endogeneity relating to the lagged dependent variable may be a concern when applying an OLS method. This is due to the OLS methods inability to address correlation concerns between the dependent variable and the error term. Second, the OLS method also lacks the properties to mitigate endogeneity of other independent variables and omitted variable biases. In turn, this may pose a risk for biased estimates. Third, another possible cause of endogeneity in our research setting arises from unobservable firm-specific characteristics that influence the choice of business model. Although addressed to some extent through the Propensity Score Matching, complete elimination remains elusive.

Further, we encounter several caveats related to the sample and the underlying choices that have formed it. To achieve a more adequate sample size, all firms that are classified as ‘Consumer discretionary’ were included in the sample. Although this was conducted following the established GICS methodology, our approach does not harmonise differences in industry types, only between sectors. This creates some doubt about whether cost structures

and firm strategies, specifically their approach to profitability, may differ among companies with the same business model. Therefore, an avenue for future research may be to limit the sample to firms with congruent strategies who operate within specific industry types, such as apparel, to ensure more accurate comparisons. Additionally, our dataset only includes listed European firms, which may limit our ability to generalise significant findings due to the geographic focus. Potential cross-country differences between these firms have not been controlled for due to the limited sample size. Further, much of the literature we reference base their theoretical implications on the U.S. market and U.S. firms, which are typically larger than their European counterparts. Broadening the geographic scope could increase the sample size and provide stronger conclusions.

Another issue regarding the construction of our sample is the selected time frame for the study. Limiting the sample collection to a four-year period, as opposed to other concurrent studies on profitability such as Fay et al. (2022) who used a time frame from 2000 to 2016, could potentially lower the significance levels in our study due to smaller sample size. We also recognise that the years 2019 to 2023 were volatile financial years, impacted by a pandemic, expansive monetary policies, followed by record-high inflation and borrowing costs. However, we did not include a longer time frame in our research as many DTC firms were initially listed in 2019 and onwards, which would have reduced our sample size. Future research could replicate our study using extended and less volatile time-periods. Lastly, the scarcity of prior empirical research about the DTC business model constrains the conclusions drawn from our study and its alignment with existing research.

7. Appendix

7.1 AI Usage Disclosure

In the process of writing this paper, we have utilised the generative AI tool ChatGPT, developed by OpenAI, to generate alternative iterations of sentences for comparison with our original compositions, ensuring proper grammar. Specifically, we have used the tool to provide suggestions for improved syntax, flow, or sentence structure of particular text snippets. Additionally, throughout the writing process, we have also used ChatGPT to confirm the grammar of specific passages and to clarify various grammatical rules and best practices, such as the placement of punctuation marks and their appropriate contexts.

We find that ChatGPT, and generative AI in general, is unsuitable for reviewing literature-specific content and inadequate for accurately rewriting larger text segments in our specific research. Consequently, we have chosen to not utilise generative AI in such cases.

Our primary insights gained from the use of generative AI relate to the added efficiency to the writing process, if used appropriately in fitting situations. In our case, ChatGPT alleviated much of the time-burden in the editing processes throughout the writing of the thesis.

8. References

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