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THE STRATEGIC ROLE OF BUSINESS MODEL CHANGE IN ENHANCING ORGANIZATIONAL PERFORMANCE

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Abstract

This paper provides empirical evidence that business model change significantly enhances firm productivity. Using a global panel dataset of over 18,000 companies across multiple industries from 2009 to 2023, the study quantifies the impact of business model reinvention, proxied by changes in the Net Asset Turnover (NAT) ratio. The analysis employs both fixed-effects regression and instrumental variable approaches to address endogeneity concerns. Results show that firms in the top quartile of business model change outperform laggards by 1.5% to 8.5%, and that doubling the pace of change can increase Total Factor Productivity (TFP) by up to 36.7%. Sectoral analysis reveals variation in impact, with the strongest effects in wholesale, mining, and business services. The study highlights the growing importance of strategic adaptability in response to technological, regulatory, and market shifts.

Keywords

Business model change, Total factor productivity, Panel data analysis

1. Introduction

This paper examines the critical role of business model change in sustaining competitiveness and driving productivity growth. Business model change means transforming how a company makes money, serves customers, or provides new products or services (Claus, 2017; Latifi et al., 2021). In dynamic environments, such change is essential for firms to adapt to technological advances, shifting consumer demands, and market disruptions (Demil & Lecocq, 2010).

The contrasting trajectories of Kodak and Netflix exemplify the strategic importance of adapting business models to technological and consumer shifts. Kodak, despite pioneering digital photography, failed to transition from its legacy film-based model. Its reliance on the 'razor and blades' strategy – selling cameras cheaply to drive film sales – became obsolete as digital photography gained traction. Kodak's hesitation to embrace digital disrupted its market position, ultimately leading to bankruptcy in 2012 (Anthony, 2016).

Conversely, Netflix demonstrated proactive business model innovation. Initially disrupting video rentals with a subscription-based DVD service, Netflix pivoted to online streaming in 2007, capitalizing on broadband expansion (Souza & Romero, 2021). By 2013, it further evolved into a content producer,

differentiating itself through original programming. This strategic reinvention enabled Netflix to control its value chain and respond dynamically to consumer demand.

These cases highlight that technological innovation alone is insufficient; firms must align their business models with emerging trends. Failure to do so risks obsolescence, while timely reinvention fosters resilience and growth.

Business model change is often implemented incrementally rather than through abrupt, large-scale transformations (Acemoglu et al., 2021; Petitt et al., 2023). The changes are fundamental, but not implemented in a shock-like manner: there is an evolution, not a revolution. Firms tend to favor incremental innovation over radical transformation, as the latter often entails greater uncertainty and risk, potentially disrupting organizational stability and deterring adoption. A stepwise approach reflects a natural resistance to abrupt change and supports the gradual internalization of innovation. It fosters a culture of continuous improvement, enabling employees to adapt progressively and embed domain expertise into everyday workflows.

Wolters Kluwer's business model transformation illustrates a stepwise reinvention process. Initially a print publisher, the firm evolved through digitization and cloud adoption into a provider of expert solutions and software. This shift was enabled by product innovation, portfolio reshaping, and talent development. Rather than a disruptive pivot, the company pursued incremental change, fostering a culture of continuous improvement. This approach demonstrates how gradual transformation can align organizational capabilities with evolving customer needs and technological opportunities.

Most of the existing research on business models tends to be descriptive, often relying on case studies or focusing on specific firms. This approach provides valuable insights into how individual companies have successfully (or unsuccessfully) navigated business model innovation. However, it also means that the findings can be somewhat anecdotal and may not always be generalisable across different industries or contexts.

This research aims to address this gap by quantifying the benefits of business model change. While theoretical frameworks and case-based insights suggest positive effects, systematic quantification remains limited. By employing an empirical approach, we aim to measure the impact of business model change using a global sample of over 18,000 companies.

Furthermore, our study contributes to the literature by explicitly linking business model transformation to productivity growth. By examining how shifts in business models influence firm-level efficiency and output, we provide insights into the mechanisms through which strategic innovation drives performance. This understanding is vital for firms seeking operational optimization and sustainable growth in increasingly competitive markets.

This paper investigates two central questions: What constitutes business model change, and to what extent can it enhance firm performance? Section 2 reviews the existing literature on the relationship between business model change and performance, and examines approaches to its measurement to enable quantitative analysis. Section 3 details the methodological framework and describes the dataset. Section 4 presents the model and empirical results. Finally, Section 5 discusses the implications of the findings and concludes the paper.

Our findings suggest that changes in business models are associated with improvements in labour productivity and overall firm performance. The analysis also demonstrates that the effect of business model change has intensified in recent years, highlighting its growing relevance in today's economic landscape.

2. Literature Review

Academic literature consistently demonstrates that business model change is a critical strategic lever for firms aiming to maintain competitiveness and adapt to evolving market conditions. Business model innovation serves as a significant source of competitive advantage, enabling organizations to create and capture value in novel ways (An, 2024; Bereznoy, 2019; Geissdoerfer et al., 2018; Teece, 2010). This process entails a fundamental reconfiguration of the value proposition, operational processes, and revenue mechanisms to better address customer needs, harness emerging technologies, and respond effectively to competitive pressures (Teece, 2010; Ibarra et al., 2018). By continuously considering innovating their business models, firms enhance their capacity to remain relevant and responsive to market dynamics – an essential prerequisite for long-term performance and growth (Foss & Saebi, 2017).

One of the key benefits of having a flexible and adjustable approach to business models is the ability to quickly respond to external changes, such as technological advancements, regulatory shifts, and evolving customer preferences (Foss & Saebi, 2017). Firms that can pivot and adapt their business models are better positioned to seize new opportunities and mitigate risks (Geissdoerfer et al., 2018). For instance, companies that embraced digital transformation early on were able to thrive during the COVID-19 pandemic by shifting to online operations and remote work models (Andreini et al., 2022). This adaptability not only enhances resilience but also fosters innovation and growth.

Continuously evolving business models involves not only incremental improvements but also radical changes that can disrupt existing markets (Casadesus-Masanell & Zhu, 2013; Haftor & Costa, 2023). By experimenting with new business models and embracing disruptive innovations, companies can differentiate themselves from competitors and capture new market segments (Casadesus-Masanell & Zhu, 2013). Conversely, firms that fail to innovate risk becoming obsolete. Companies that rely solely on past successes without adapting to changing environments often struggle to maintain their market position (Teece, 2010).

The academic literature increasingly explores the antecedents of business model change, identifying both environmental and organizational drivers. Saebi et al. (2017) find that firms are more likely to adapt their business models in response to perceived external threats rather than market opportunities. Moreover, firms with a strategic orientation toward market development exhibit a greater propensity for adaptation than those focused on defending existing positions.

That such threats do not necessarily have to stem from technological change is demonstrated by Bereznoy (2019). He argues that business model innovation is often independent of technological breakthroughs. Rather than relying solely on technological advancement, successful business model transformation is driven by entrepreneurial insight and the strategic identification of unmet market needs, followed by the configuration of innovative value architectures tailored to those opportunities.

Doz and Kosonen (2010) emphasize that strategic agility, enabled by resource fluidity, leadership unity, and strategic sensitivity, is essential for effective business model transformation. These capabilities allow firms to detect change, align leadership, and reallocate resources efficiently. Eppler et al. (2011) highlight the importance of individuals who span multiple knowledge domains in the ideation process. Their ability to integrate diverse perspectives is critical for navigating the complexity and ambiguity inherent in business model innovation.

Measuring business model change presents a methodological challenge, as no universally accepted or standardized variable exists that captures such change across diverse business contexts. In his 2016 study, Clauss develops a hierarchical scale to measure business model innovation, comprising ten reflective subconstructs – such as new capabilities, technologies, offerings, and revenue models – grouped into three formative dimensions: value creation, value proposition, and value capture. These form a second-order construct representing business model innovation, validated through two large-scale surveys. While the study does not directly assess financial outcomes, it finds that BMI positively influences strategic flexibility.

Latifi et al. (2021), in their study of 563 European SMEs, also conceptualize business model innovation as a second-order reflective-formative construct, based on changes in value creation, delivery, and capture. Each dimension is measured through specific indicators, such as new products, partnerships, or pricing mechanisms. Their findings show that business model change does not directly improve firm performance; instead, its impact is fully mediated by efficiency growth, revenue growth, and organisational capabilities, with the latter emerging as the most influential driver of performance.

The findings of Wannakrairoj & Velu (2021) do not indicate a mediated effect of business model change on firm performance. Instead, their study shows a direct and statistically significant relationship between business model innovation – measured via changes in the Net Asset Turnover (NAT) ratio – and productivity growth. Using firm-level data from over 15,000 UK companies, they demonstrate that changes in NAT are positively associated with increases in total factor productivity (TFP), even after controlling for labor and capital inputs.

3. Methodology and Data

Following the approach of Wannakrairoj and Velu (2021), we employ the change in the Net Asset Turnover (NAT) ratio as a proxy for business model change. The NAT ratio, defined as sales divided by net operating assets, reflects the efficiency with which a firm utilizes its asset base to generate revenue. It

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is inherently sensitive to both industry-specific characteristics and the structural configuration of a firm's business model. When a company undergoes a business model transformation, this typically entails substantial shifts in operational processes, asset management, and revenue generation mechanisms – changes that are likely to manifest in the NAT ratio.

The NAT ratio effectively captures the shift from asset-heavy to asset-light business models or vice versa, serving as a proxy for structural shifts in firms' resource utilization and operational efficiency. For instance, firms that outsource manufacturing or adopt cloud-based infrastructure reduce their reliance on physical assets, thereby increasing their NAT ratio. Conversely, a shift from a service-centric to a product-centric model may necessitate greater investment in inventory and fixed assets, resulting in a lower NAT ratio. To account for both directions of change, we consider the absolute value of the NAT ratio change, which allows us to detect meaningful structural shifts regardless of the direction of asset intensity.

Business model change is often either radical or stepwise, rather than following a linear trajectory. Pettit et al. (2023) argue that strategic change unfolds through iterative, future-making cycles, rather than as a sequential progression from vision to implementation based on a predefined plan. Radical changes are particularly likely to produce noticeable shifts in the NAT ratio. For example, adopting a new business model that leverages digital platforms or subscription services can significantly alter a firm's asset structure and sales dynamics, resulting in a marked change in the NAT ratio. However, stepwise changes in the business model can also be captured through the NAT ratio, especially when observed over a multi-year period.

We investigate the impact of business model change, as proxied by changes in the NAT ratio, on Total Factor Productivity (TFP). TFP serves as a critical indicator of a firm's efficiency and competitiveness, capturing the output generated from all inputs employed in the production process i.e., capital and labour. It reflects not only the quantity of inputs but also the effectiveness with which they are utilized, thereby offering insight into technological progress, process optimization, and other intangible drivers of productivity.

TFP is widely recognized as a robust measure of technological advancement, as it encompasses improvements in production efficiency and innovations that are not directly attributable to changes in input volumes (Bongers & Picatoste, 2021). By examining shifts in the NAT ratio, we aim to elucidate how changes in business models affect a firm's revenue generation capacity. The NAT ratio serves as a proxy for operational efficiency, indicating how effectively a company leverages its capital and labor to create added value.

This analytical framework enables us to isolate the influence of business model changes from other confounding factors, thereby providing a more granular understanding of how strategic adjustments in operational practices and asset utilization contribute to productivity enhancements. Our empirical analysis is designed to test the hypothesis that business model transformation leads to gains in productivity, which in turn drive higher revenue outcomes.

Data

Our dataset, obtained from Orbis, is both extensive and heterogeneous, encompassing information on over 18,000 companies across a wide range of industries and geographic regions. Orbis is a globally recognized database known for its high-quality and detailed company-level information. It provides comprehensive records on firms' financial performance, ownership structures, and industry classifications, all of which are critical for our analysis. This broad coverage enables a comprehensive and inclusive analysis of business model changes in diverse economic and institutional contexts. The diversity of the dataset is essential for ensuring the robustness and generalizability of our findings across different sectors.

The dataset is structured as panel data, covering the period from 2009 to 2023. This longitudinal format enables us to track developments over time, offering insights into the dynamic nature of business model innovation and its implications for productivity. The extended time horizon further strengthens our ability to identify persistent patterns and structural shifts

For inclusion in our analysis, we selected companies with complete data for the period 2014-2023 on key variables: total assets, revenue, number of employees, and net asset turnover. Table 1 gives the descriptive data. To ensure data quality and relevance, we excluded observations with non-positive values for assets or turnover, as well as firms with fewer than ten employees. These criteria help to filter out potentially non-operational or marginal entities, thereby enhancing the reliability of our regression results.

To assess the impact of business model change, we divide firms into quartiles based on changes in their NAT ratio. Firms in the top quartile are labeled leaders, reflecting a high pace of business model innovation. Those in the bottom quartile are termed laggards, indicating limited change. This classification allows us to compare performance across firms with varying degrees of strategic transformation and quantify the productivity gains associated with business model reinvention.

Table 1: Sectoral overview of firm Characteristics and asset efficiency: descriptive statistics (2009-2023)

		Agri-culture, forestry, fishing	Mining	Construction	Manufacturing	Transportation & Public utilities	Wholesale trade	Retail trade	Finance, insurance, Real estate	Services	Public administration
Number of firms	N	238	456	570	8,886	1,805	1,179	817	1,321	2,954	39
Number of employees	Average	4,157	6,673	6,397	5,949	8,965	3,197	21,922	2,735	5,918	5,567
	1st quartile	61	159	120	165	101	56	295	29	59	23
	Median	386	755	632	765	722	294	1,451	170	323	150
	3rd quartile	1,724	4,176	2,531	3,073	3,814	1,128	7,232	926	1,634	1,635
Total assets (€1,000)	Average	816,994	7,598,058	4,431,066	3,119,335	8,282,566	1,381,576	4,384,444	6,295,568	2,001,470	25,737,538
	1st quartile	16,560	77,072	37,267	31,983	29,019	9,793	62,097	54,412	9,912	4,678
	Median	82,684	517,232	261,134	160,234	293,972	63,215	294,714	369,927	62,417	42,970
	3rd quartile	391,079	2,822,692	1,321,251	687,525	2,541,040	326,475	1,164,834	2,148,078	364,857	477,871
Revenue (€1,000)	Average	656,191	4,804,732	2,954,927	2,243,662	3,469,920	2,309,141	5,788,156	1,310,673	1,186,362	1,147,678
	1st quartile	11,600	32,602	21,461	22,074	16,959	7,226	61,498	9,584	6,,652	3,334
	Median	51,153	228,526	183,561	114,615	135,520	57,694	353,381	79,106	42,917	21,283
	3rd quartile	239,946	1,349,779	934,296	523,467	1,154,278	405491	1,541,560	395,872	254,390	230,604
NAT ratio	Average	1.81	1.28	1.78	1.43	1.19	2.74	2.49	0.78	1.75	1.22
	1st quartile	0.4	0.3	0.52	0.62	0.28	0.68	1.01	0.08	0.42	0.21
	Median	0.88	0.59	1.36	1.07	0.61	1.46	1.93	0.23	0.95	0.77
	3rd quartile	1.85	1.13	2.37	1.7	1.2	2.81	3.14	0.67	1.8	1.42

4. Empirical Model and Results

Our model posits that a company's revenue is determined by three primary factors: labor input, capital input, and productivity. Labor input is quantified by the number of employees, representing the human resources allocated to the firm's operations. Capital input is measured through the company's total assets, encompassing both tangible and intangible resources that support production and service delivery. The third factor, productivity, is conceptualized as being significantly influenced by the extent of business model transformation, which we proxy using the NAT ratio.

By incorporating the NAT ratio as an indicator of business model innovation, we are able to capture the efficiency with which firms utilize their capital and labor to generate revenue. This approach enables us to quantify the impact of strategic and operational changes on a company's Total Factor Productivity (TFP). The inclusion of the NAT ratio thus provides a meaningful link between business model dynamics and productivity outcomes.

We base our model on the Cobb-Douglas function

$$Y = AL^{\alpha}K^{\beta}$$

which in natural log form is

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$$\ln Y = \ln A + \alpha \ln L + \beta \ln$$

and where *A* represents TFP, *Y* represents revenue, *L* represents the number of employees and *K* represents Total Assets. The change in TFP is explained by *Business Model Change* (proxied by the change in NAT) and unobserved technological and efficiency factors (*A'*):

$$\ln A = \mu \ln Business\ Model\ Change + A'$$

The last two equations can be combined in:

$$\ln Y = \mu \ln Business\ Model\ Change + \alpha \ln L + \beta \ln K + A'$$

Leading to the empirical estimation equation:

$$\ln Y_{it} = \mu \ln Business\ Model\ Change_{it} + \alpha \ln L_{it} + \beta \ln K_{it} + A'_{it} + u_{it}$$

To estimate the effect of business model change on company revenue, we employ regression analysis (Model 1). To ensure the robustness of our results, we incorporate both time fixed effects and company (cross-sectional) fixed effects. Time fixed effects control for temporal variations that uniformly affect all firms, such as macroeconomic cycles, policy shifts, or global shocks, thereby isolating the specific impact of changes in the NAT ratio. Company fixed effects account for unobserved heterogeneity across firms, such as differences in management quality, strategic orientation, or organizational culture, that may influence revenue outcomes. This modeling strategy enables us to estimate the effect of business model changes on productivity and turnover while minimizing bias from external or firm-specific confounding factors.

To further refine our analysis and address potential limitations in the primary regression model, we estimate a second specification using an instrumental variable (IV) approach (Model 2). Specifically, we employ a one-year lag in the change in the NAT ratio as an instrument, under the assumption that past changes in business model orientation are exogenous to current revenue shocks and thus suitable for identifying causal effects. We pay particular attention to potential endogeneity concerns arising from the limitations of the NAT ratio as a proxy for business model change.

To strengthen the validity of our findings, we introduce a second instrumental variable – the Euclidean Return on Equity (RoE) – as a robustness check. This variable measures the Euclidean distance between a firm's RoE and the industry average, serving as an indicator of the intensity of competitive pressure. The underlying rationale for its correlation with the NAT ratio is that a higher Euclidean RoE reflects greater deviation from industry norms, which may signal heightened competition. In turn, such competitive dynamics are likely to incentivize firms to undertake business model changes. By incorporating this additional instrument, we aim to strengthen the identification strategy and ensure the robustness of our estimates.

Results

Table 2 presents the results of our econometric analysis. Model 1 serves as the baseline specification, estimating the direct relationship between business model change and firm revenue/productivity without accounting for potential endogeneity. Model 2 addresses this concern by employing a two-stage least squares (2SLS) approach, using a one-year lag in the change in the NAT ratio as an instrumental variable. Models 3 and 4 serve as robustness checks, incorporating an alternative instrument – the Euclidean RoE, which measures the distance between a firm's RoE and the industry average. Model 4 combines both instruments to further validate the results.

Our analysis reveals a statistically significant and positive relationship between the pace of business model change and TFP. Specifically, we find that doubling the rate of change in business models, as indicated by the NAT ratio, leads to an increase in TFP ranging from 5.8% (Model 1) to 36.7% (Model 2), with Model 3 (7.1%) and Model 4 (25.0%) falling within this range. These findings suggest that firms can achieve substantial gains in productivity and revenue without increasing their asset base or workforce, simply by accelerating business model transformation. This underscores the strategic importance of adaptability and reinvention in enhancing firm performance.

To illustrate the practical implications of these results, we compare two hypothetical median firms from our sample. Both firms have 760 employees and €190 million in assets, but differ in their degree of business model change. Company A, a laggard in the bottom quartile, has a projected revenue between €121 million (Model 2) and €125 million (Model 1). Company B, a leader in the top quartile, is expected to generate between €127 million (Model 1) and €132 million (Model 2) in revenue. This translates to a revenue differential of €2 million to €11 million, attributable solely to differences in business model change. That would result in a productivity difference between 1.5% to 8.5%. These results highlight the economic value of strategic reinvention and reinforce the importance of continuous business model evolution in maintaining competitive advantage.

Table 2: Estimated impact of business model change on firm productivity: baseline and Instrumental Variable models

	Model 1 OLS	**Model 2 2SLS 1**	**Model 3 2SLS 2**	**Model 4 2SLS 3**
ln(*Employees*)	0.338***	0.302***	0.337***	0.311***
ln(*Assets*)	0.653***	0.729***	0.657***	0.705***
ln(*Business Model Change*)[#]	0.058***	0.367***	0.071***	0.250***
Fixed effect cross-sectional	Yes	Yes	Yes	Yes
Fixed effect time	Yes	Yes	Yes	Yes
2sls IV – Lagged NAT ratio	-	Yes	No	Yes
2sls IV – Euclidean RoE	-	No	Yes	Yes
First stage significance	-	***	***	***
Adjusted R-squared	0.486	0.264	0.486	0.357
Cross-sections	18,135	18,104	17,997	17,966
Unbalanced observations	227,352	207,873	225,422	206,166

*** indicates significance at .001 level.

[#] ln(*Business Model Change*) is the natural logarithm of the NAT change. We add a small constant (0.01) to deal with 0 values.

To assess whether the impact of business model change has intensified in recent years, we extend our analysis by introducing an interaction term between a time-period dummy variable and the business model change indicator. Specifically, we compare the effect during the period 2019-2023 with the preceding decade (2009-2018). As reported in Table 3, our findings indicate that the effect of business model change on productivity is 15% stronger in the most recent five-year period. This suggests that the pressure to innovate and adapt business models has reached its highest level since the 2009 financial crisis, reflecting a heightened need for strategic agility in an increasingly dynamic economic environment.

Table 3: Temporal variation in the effect of business model change: pre- and post-2019 comparison

	Model 1 OLS	**Model 2 2SLS 1**
ln(*Employees*)	0.338***	0.304***
ln(*Assets*)	0.653***	0.727***
ln(*Business Model Change*)	0.062***	0.392***
ln(*Business Model Change*) x Dummy(*Year between 2009-2018*)	-0.009***	-0.049***
Fixed effect cross-sectional	Yes	Yes
Fixed effect time	Yes	Yes
2sls IV – Lagged NAT ratio	-	Yes
2sls IV – Euclidean RoE	-	No
First stage significance	-	***
Adjusted R-squared	0.487	0.264
Cross-sections	18,135	18,104
Unbalanced observations	227,352	207,873

*** indicates significance at .001 level.

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Building on the cross-industry findings, we conducted an extended analysis to examine the impact of business model reinvention on productivity at the sector level. Using industry classification codes, we segmented the original sample of over 18,000 firms into distinct industry sub-samples. For each sector, we re-estimated the productivity differential between firms classified as leaders (top quartile in business model change) and laggards (bottom quartile), applying both our baseline pooled OLS model with fixed effects (Model 1) and a two-stage least squares (2SLS) model using the lagged Net Asset Turnover (NAT) ratio as an instrumental variable (Model 2).

The results are depicted in Table 4 and reveal a statistically significant and positive relationship between business model change and productivity across nearly all sectors. Notably, the 2SLS estimates indicate that the productivity gains from moving from a laggard to a leader are particularly pronounced in Wholesale and Retail (25.7%), Mining (13.0%), and Business Services (9.6%). More modest effects were observed in Other Services (2.8%), Retail (3.6%), and Real Estate (5.2%). The only exception was Agriculture, where the 2SLS results were not statistically significant.

Model 1 results also demonstrate a positive association between business model change and productivity across all sectors, though the strength of this relationship varies. The largest effects are found in mining (2.9%), finance (2.8%), and real estate (2.0%). In contrast, the smallest gains are observed in other services (0.75%), retail (0.65%), and medium-tech manufacturing (0.55%).

These findings indicate the importance of sector-specific dynamics in shaping the effectiveness of business model reinvention. While the overall trend confirms that strategic transformation enhances productivity, the magnitude of this effect varies considerably across industries, reflecting differences in competitive pressure, asset structures, and innovation pathways.

Table 4: Estimated sectoral effects of business model change on firm productivity and turnover

	1st quartile (log) NAT change	**3rd quartile (log) NAT change**	**OLS coefficient (Model 1)**	**2SLS 1 coefficient (Model 2)**	**Productivity gain from moving from 1st to 3rd quartile (%)**	
					OLS (Model 1)	2SLS 1 (Model 2)
Agriculture	0.047	0.288	0.068	3.341*	1.65	80.53*
Mining	0.043	0.238	0.151	0.665	2.93	12.96
Construction	0.054	0.262	0.060	0.358	1.24	7.44
Transportation	0.027	0.224	0.049	0.286	0.97	5.64
Communications	0.027	0.244	0.084	0.352	1.83	7.65
Utilities	0.017	0.136	0.078	0.532	0.93	6.35
Wholesale	0.072	0.390	0.055	0.808	1.75	25.66
Retail	0.058	0.339	0.023	0.128	0.65	3.59
Finance	0.020	0.194	0.162	0.410	2.81	7.13
Real Estate	0.010	0.135	0.157	0.414	1.97	5.20
Business Services	0.054	0.327	0.059	0.349	1.63	9.55
Other Services	0.034	0.236	0.037	0.141	0.75	2.84
High Tech Manufacturing	0.041	0.229	0.077	0.364	1.45	6.83
Medium Tech Manufacturing	0.049	0.245	0.028	0.346	0.55	6.79
Low Tech Manufacturing	0.052	0.274	0.040	0.368	0.89	8.19

* IV results for Agriculture are not statistically significant. All others are significant at .001 level.

5. Discussion and Conclusion

This paper provides empirical evidence that business model change significantly enhances firm productivity. Drawing on a global sample of over 18,000 companies across multiple industries, we quantify the impact of business model change using the Net Asset Turnover (NAT) ratio as a proxy, following the approach introduced by Wannakrairoj and Velu (2021).

In comparing our findings to those of Wannakrairoj and Velu, it is important to note that their study is based on panel data from 15,844 UK firms across 19 industries over the period 2000-2017. In contrast, our analysis uses a global dataset covering the years 2009 to 2023, enabling broader generalizability and insights across industries and countries. Their findings show that a doubling of the NAT ratio leads to a statistically significant increase in firm productivity in the UK ranging from 2.7% to 19.3%. Our findings similarly demonstrate that firms in the top quartile of business model change

outperform laggards by 1.5% to 8.5%. Moreover, doubling the pace of change results in an increase in Total Factor Productivity (TFP) ranging from 5.8% to 36.7%, depending on the model specification.

Taken together, both studies underscore the performance advantage of firms that continuously evolve their business models. Moving beyond mere operational optimisation, such adaptability is essential for responding to technological advancements, regulatory shifts, and changing consumer preferences – ultimately fostering resilience and long-term growth.

Our research has several limitations. While the paper establishes a strong link between business model change and productivity, it offers limited insight into the specific mechanisms through which this transformation occurs. Future research could explore the organizational processes that mediate this relationship, such as innovation culture, leadership dynamics, and digital capability development. Additionally, although the global scope of our dataset is a strength, the analysis does not account for how regional institutional factors may influence the effectiveness of business model change. Investigating country-level conditions, such as regulatory environments, labor market structures, and innovation ecosystems, could provide valuable nuance and contextual depth.

Another limitation concerns the use of the NAT ratio as a proxy for business model change. Although this measure is well-defended and effective in capturing structural shifts in asset utilization, it may not fully reflect all dimensions of changes in business models, particularly in service-oriented or intangible-heavy sectors where changes are less asset-driven.

Finally, our study relies on panel data at the industry and macro level. If firm-level longitudinal data become available, future research could conduct a panel study that tracks individual firms over time. This would allow for more granular insights into the timing, sequencing, and outcomes of business model reinvention, and help uncover the dynamics of strategic transformation at the firm level.

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