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DIAGNOSING THE REALITY AND STRATEGIC TRENDS OF A LEADING AUTOMOTIVE INDUSTRY IN THE 21ST CENTURY A CASE STUDY OF TOYOTA

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Abstract. The aim of the study is to seek a solution to the prevailing reality and the strategic future path of Toyota, the leader of the automotive industry in the twenty first century through analysis of the actual and expected outcomes of the strategies adopted by Toyota. It aims to draw on this experience to guide investors, in general and Iraqi investors in particular, on predicting future financial revenues to make appropriate investment decisions and also to benefit Iraqi companies with insights. The data collected for the study of Toyota were obtained from the Fortune magazine, financial reports of the company and other sources, to which the study method used was a case study and the approach used in analysing the result was an inductive approach. Key findings suggest that Toyota is still working on the long growth course; this is proved by analyzing the company's sales, income and profit trend. The study is original in its use of recent, real-world data to predict future trends and analyse the strategic direction of this automotive industry leader, which puts investors at the forefront of investing in the automotive sector.

Keywords: Strategy, Toyota, growth strategy, stability strategy, retrenchment strategy.

Introduction

Analyzing the strategy of an industry leader is a crucial process not only for individual investors and companies but for the economy as a whole given that no one could have anticipated the unprecedented pace at which the global economy has evolved and the climate has changed.

Industry has been a major factor in the evolution of human history. The world has seen transformative change in production processes and the economic system since the invention in 1712 (modern patent in 1776) of the steam engine, that marked the beginning of the First Industrial Revolution. The steam engine sparked a wave of innovations in different technologies, mechanical looms, steam locomotives, iron smelting and engines. This period was the beginning of modern industry in Europe and North America.

Then came the Second Industrial Revolution (c. 1870 to 1914) when developments in iron production allowed the making of locomotives, telegraph systems, industrial machinery and a host of parts and components.

Next came the Third Industrial Revolution in 1969, which saw the advent of electronics and qualitative improvements in information and communication technologies. During this time, computers were invented, the Internet was born, and nuclear power was put to use to transform industries and drive global economic growth. The cumulative industrialization of the past few hundred years has resulted in an incredible growth of the global economy from \$2.6 trillion in 1870 to \$29.3 trillion in 1970.

Subsequently, the Fourth Industrial Revolution began in 2011, characterized by the development of cyber-physical systems [1]. During this decade, the world witnessed significant growth and proliferation in information and communication technology (ICT) systems and automotive manufacturing systems, and the development of the ICT sector is set to become a key driver of economic growth [2].

This development paved the way for the emergence of so-called self-driving cars, while the Internet of Things enabled the connectivity and remote management of devices; consequently, this drove the growth and evolution of the automotive industry and fostered sustained economic growth in the Asia-Pacific region [1].

The automotive industry has gained increasing importance in Asia; it contributes approximately 7% of the Gross Domestic Product (GDP) to the Chinese economy the largest in Asia [3] through the manufacturing of distinctive vehicles. Indeed, studies indicate that achieving product distinctiveness has become essential in recent years for shaping the current economic landscape [4].

The emergence of new industries, such as the hybrid and electric vehicle sectors, incentivizes companies to capitalize on additional opportunities to enhance efficiency and expand the scope of their operations. Corporate growth strategies can alter the scale and structure of a company's activities, enabling the introduction of distinctive vehicles [5] a factor crucial for GDP growth and job creation. Furthermore, this sector establishes a tax base and serves as a vital resource for the state and its economy [3]. When an industry leader pursues a growth strategy, it generates new employment opportunities and reduces unemployment rates within that industry [6].

We believe that addressing unemployment both globally and specifically in Iraq can be achieved by transferring the Toyota experience to Iraqi partnerships and driving their growth. Entrepreneurship and small-to-medium-sized enterprises (SMEs) in Iraq have the potential to grow and flourish in the current climate particularly following the stabilization of security provided that the experiences of successful organizations are adopted and the strategies they employ are analyzed in terms of their current reality and future prospects. Toyota was selected for this purpose because it operates in the automotive industry a sector with a promising future and stands as the industry leader in the implementation of growth strategies.

Analyzing the strategy of an industry leader helps in understanding the direction the industry is taking whether it is in a stage of development and growth, signaling an opportunity for investors and companies to enter, or in a stage of decline, necessitating either revitalization to restore growth or an exit before it is too late.

To achieve the aforementioned objectives, the study is structured into four sections. The first section presents an introduction covering the research problem, its significance, objectives, and the resulting hypotheses. The second section provides a state-of-the-art literature review of different types of directional strategies and their literature. The third section describes the methodology of the study

and data gathered. The findings of the study are discussed in the fourth section and the fifth section provides a discussion of these findings. Lastly, the sixth and last part presents the main findings and recommendations from the research.

Literature Review:

This section covers the following points:

Directional Strategies:

Diversified firms exist in a variety of markets and sell different, unique products, and they may be involved in several lines of business, which requires two levels of strategy – corporate level strategy (strategy at the company level) and business level strategy (competitive strategy) [7].

Directional strategies operate at the overall corporate level; they define the company's general direction whether toward growth, stability, or retrenchment and are categorized into three types [8]: Growth strategies: These entail the expansion of the company's activities, An examination of Toyota's strategy reveals that it pursues a growth strategy; therefore, we will focus on this approach. Growth is a natural process of all living organisms that seek to survive [9] and an organization is a living thing that grows and develops from its inception.

Continued growth means higher sales and the possibility of exploiting the experience curve to reduce the cost of the products sold per unit, thus enhancing profits. If the business is expanding quickly, consolidating and/or a price war is raging against other companies for market share, such cost reductions can become very important. Companies that fail to reach "critical mass" (i.e., achieving the necessary economies of scale in production) face significant losses unless they can identify and serve a small yet profitable niche market, where premium pricing is justified by the unique features of the products or services. [8]

A growth strategy is the aspiration of all companies; hence, McDonald's vision is "to move with velocity to drive profitable growth and become an even better McDonald's serving more customers delicious food each day around the world" [10]. While growth is a means to increase revenue and profits, there may be additional strategic intentions behind it [7], such as growth in sales, assets, and profits, or various combinations thereof [8].

There is a need for a growth strategy to achieve a scale that enables the company to at least maintain its influential market position and generate the cash flow required for future growth and asset replacement [11]. Theories explaining the reasons for and mechanisms of corporate growth focus either on internal, company-specific factors or on market and environmental factors as drivers of organic growth. Studies in the first category emphasize corporate strategies, operations, and characteristics as primary sources of growth. Regarding Toyota, market-focused studies examine competitive and other dynamics as key factors driving the company's organic growth [12]. Growth strategies can be categorized into four types [13]:

Focus Strategy:

This involves concentrating on a single area of operations to enhance performance; examples include increasing market share or improving existing products.

Vertical Growth:

This entails expanding company operations either upstream (backward integration) or downstream (forward integration) within the supply chain; examples include a manufacturer acquiring its suppliers or distributors.

Horizontal Growth:

This involves expanding at the same level of the supply chain, often through acquiring competitors or increasing sales in the current market; examples include merging with another company that offers similar products.

Diversification:

This involves entering new markets or industries, often to reduce risk.

It consists of two types:

Related (Concentric) Diversification: Expanding into products or services related to current offerings.

Unrelated (Conglomerate) Diversification: Entering businesses or markets unrelated to the company's current operation.

The decision to pursue growth is not a risk-free option for companies. Indeed, General Electric (GE) faced difficulties in its oil and gas services and power equipment businesses. GE also experienced a

significant decline in revenue in its financial services business and subsequently sold its assets in that area, choosing instead to pursue growth in other industries and equipment and better integrate its digital strategy online. Effective companies carefully evaluate their growth options (including various enterprise-level strategies) before committing company resources to any of them [7].

Similarly, Mattress Firm grew from its founding in 1986 to eventually operate over 3,200 stores and generate annual revenues reaching \$3 billion. However, its pursuit of growth and dominance driven largely by acquisitions ultimately led to its collapse [10].

While implementing a growth strategy is no easy task, sustaining that strategy and ensuring the organization's continued growth is even more challenging. Initial growth typically requires only a limited scope of reforms; sustaining growth, however, is far more difficult in many respects, as it necessitates building a solid long-term institutional foundation that enables organizations to withstand shocks and maintain their productive dynamism [14].

Stability Strategies: These entail making no changes to the company's current activities; companies do not typically pursue this strategy.

Retrenchment Strategies: These involve reducing the level of the company's activities; companies do not typically pursue this strategy either.

Industry Leader:

It is the largest company in terms of size [15]. Furthermore, an industry leader is one that steers the future of the sector through the new innovations it introduces; thus, Toyota is considered a leader in the technology industry due to its capacity for innovation innovation being a strategic priority for a technology leader [16]. Beyond its innovative capabilities, there are other reasons why Toyota stands as a leader in the technology and electronics industry, as follows:

Product Quality: Toyota is renowned for the quality of its vehicles, which has garnered it a vast consumer base.

Technological Innovation: Toyota is a leader in technological advancement, particularly in the field of hybrid vehicles, such as the Toyota Prius.

Production Model: Toyota utilizes the "Toyota Production System," which helps minimize waste and inefficiency.

Global Market: Toyota maintains a widespread presence, manufacturing and selling its vehicles in most countries around the world.

Sustainability: Toyota invests in electric vehicle technologies and sustainable solutions.

History: Established in 1937, Toyota boasts a long track record of success in the automotive industry. All these factors contribute to cementing Toyota's position as a leader in the automotive industry.

3- Study Methodology and Approach:

The study used an inductive type of research in order to get the result and uses the case study method based on the data obtained from Toyota. The data have been collected from the website of Fortune magazine [22] and Toyota's official financial reports [23]. Analysis of the data was conducted by the Linear Regression with Time approach, and the results were achieved by the use of the quantitative business software, WinQSB (Quantitative Systems for Business).

Methods

The study used an inductive type of research in order to get the result and uses the case study method based on the data obtained from Toyota. The data have been collected from the website of Fortune magazine [22] and Toyota's official financial reports [23]. Analysis of the data was conducted by the Linear Regression with Time approach, and the results were achieved by the use of the quantitative business software, WinQSB (Quantitative Systems for Business).

Results and Discussion

Diagnosing the Reality and Future of Toyota's Sales Strategy

Data obtained from Toyota's financial reports indicate a continuous upward trend in sales during the twenty-first century, signifying that the company is pursuing a growth strategy. Table (1) below illustrates these sales figures:

Table 1. Actual and Projected Toyota Sales (2001–2030)

02-12-2026 Year	Actual Data	Forecast by LR	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-square	
1	5.526	6.105934	-0.5799341	-0.5799341	0.5799341	0.3363236	10.49465	-1		
2	5.784	6.297583	-0.5135832	-1.093517	0.5467587	0.3000456	9.687012	-2		
3	6.246	6.489232	-0.2432323	-1.33675	0.4455832	0.2197511	7.756077	-3		
4	6.719	6.680881	3.811932E-02	-1.29863	0.3437172	0.1651766	5.958892	-3.778194	0.7293103	
5	7.408	6.872529	0.535471	-0.7631593	0.382068	0.1894871	6.21277	-1.997444	0.2136084	
6	7.974	7.064178	0.909822	0.1466627	0.470027	0.2958686	7.078951	0.3120304	0.1436642	
7	8.524	7.255827	1.268173	1.414836	0.5840479	0.4833536	8.193055	2.422466	0.172024	
8	8.547	7.447475	1.099524	2.51436	0.6484824	0.5740536	8.776979	3.877299	0.2318162	
9	7.051	7.639124	-0.5881238	1.926237	0.6417759	0.5487021	8.728537	3.001416	0.2599148	
10	7.237	7.830773	-0.5937729	1.332464	0.6369756	0.5290885	8.676151	2.09186	0.3180583	
11	7.308	8.022422	-0.7144217	0.618042	0.6440162	0.5273894	8.776127	0.9596684	0.4025027	
12	7.352	8.21407	-0.8620701	-0.2440281	0.6621873	0.5453707	9.021921	-0.3685182	0.5167742	
13	8.871	8.405719	0.4652815	0.2212534	0.6470407	0.5200719	8.731386	0.3419466	0.5168794	
14	9.116	8.597368	0.5186319	0.7398853	0.6378687	0.5021367	8.514091	1.159934	0.5216008	
15	8.971	8.789017	0.181983	0.9218683	0.6074763	0.4708688	8.081723	1.517538	0.5624604	
16	8.681	8.980665	-0.2996655	0.6222029	0.5882381	0.4470519	7.792364	1.05774	0.6360089	
17	8.97	9.172314	-0.2023134	0.4198895	0.5655367	0.4231625	7.466663	0.7424619	0.6979504	
18	8.964	9.363962	-0.3999624	1.992702E-02	0.5563381	0.4085407	7.29973	3.581819E-02	0.7709559	
19	8.976	9.555612	-0.5796118	-0.5596848	0.557563	0.4047201	7.255394	-1.003805	0.8538408	
20	8.958	9.74726	-0.7892599	-1.348945	0.5691479	0.4156306	7.333158	-2.370113	0.9498712	
21	9.92	9.938909	-0.0189085	-1.367853	0.542946	0.3958557	6.993037	-2.519317	0.9502929	
22	10.381	10.13056	0.2504416	-1.117412	0.5296503	0.3807133	6.784831	-2.109716	0.9187448	
23	10.558	10.32221	0.2357931	-0.8816185	0.516874	0.3665778	6.586938	-1.705674	0.8987486	
24	11.09	10.51385	0.5761452	-0.3054733	0.5193436	0.3651347	6.528948	-0.5881912	0.8527958	
25	11.011	10.7055	0.3054962	2.288818E-05	0.5107897	0.3542624	6.378769	4.480941E-05	0.8435383	
26		10.89715								
27		11.0888								
28		11.28045								
29		11.4721								
30		11.66375								
CFE		2.288818E-05								
MAD		0.5107897								
MSE		0.3542624								
MAPE		6.378769								
Trk. Signal		4.480941E-05								
R-square		0.8435383								
		Y-intercept=5.9143								
		Slope=0.1916								

Source: Prepared by the researcher based on data collected from Toyota's official financial reports, available at the following link:

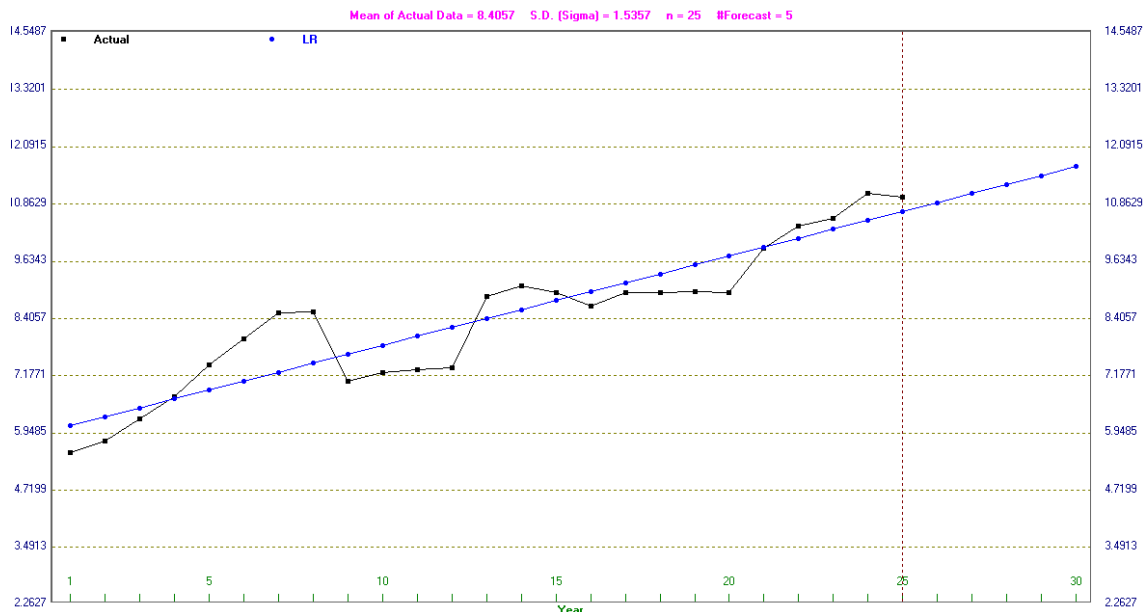
https://global.toyota/pages/global_toyota/ir/library/annual/2024_001_integrated_en.pdf [23]

The first column on the left side of Table (1) indicates that the study period spanned 25 years. The second column represents the actual sales achieved by Toyota from 2001 to 2025; the table shows a continuous increase in sales, with the exception of 2009 a year marked by the financial crisis and economic collapse in the United States, which had repercussions worldwide. Similar decreases were seen in other years as a result of events around the world, especially COVID-19 at its peak in 2020 that affected all businesses greatly. Lastly, the third column shows the estimated or forecasted values obtained from the Linear Regression with Time method.

The results show that Toyota will continue a growth strategy for the next five years (2026, 2027, 2028, 2029 and 2030 are projected to sell 10,897, 11,088, 11,280, 11,472 and 11,663 respectively). The fourth column is the forecast error and a smaller number indicates higher accuracy in the forecast. The statistical measures of error tracking, Mean Squared Error (MSE), Mean Absolute Percentage Error (MAPE), the tracking signal, and the coefficient of determination are illustrated in the columns from 5 to 10. The values of MSE, MAPE and coefficient of determination show that this is relatively effective and reliable method compared to other statistical methods. The MAPE value of 6.378 is a low value compared to other method available in the software, and the coefficient of determination of 0.843. This high value means that the model is of good quality and explanatory power - that is, the model explains that past sales behavior is responsible for about 84% of future sales behavior.

To further clarify and demonstrate the quality of the method used to forecast the growth trajectory

of Toyota's sales from 2001 to 2025, the WinQSB software allows for a graphical representation showing both the actual and projected paths of the company's sales growth strategy, as illustrated in Figure (1) below:



Source: Prepared by the researcher.

Figure 1. Actual and projected Toyota sales from 2001 to 2030.

Figure (1) demonstrates a high degree of alignment between actual and projected values, reflecting the quality of the analysis and the tools employed.

Although the majority of these sales consisted of a single type diesel-powered vehicles electric vehicles accounted for a significant share of the total volume; Toyota saw an increase in the sales share of electric vehicles during the twenty-first century, as illustrated in Figure (2).

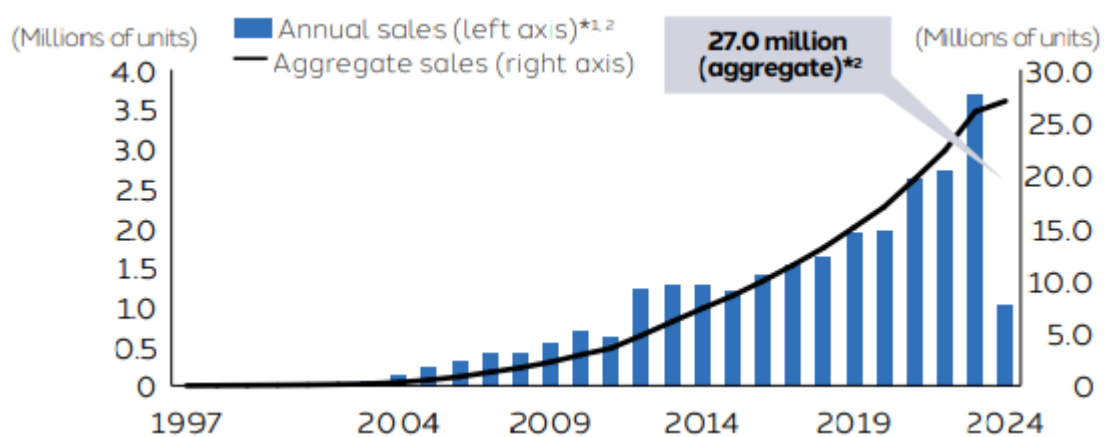


Figure 2. Total Electric Vehicle Sales

Source: https://global.toyota/pages/global_toyota/ir/library/annual/2024_001_integrated_en [23].pdf .

*1 Vehicle sales figures are the total of HEV, PHEV, BEV, and FCEV sales.

*2 As of March 31, 2024

Figure (2) shows total electric vehicle sales figures, comprising the combined sales of hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), battery electric vehicles (BEVs), and fuel cell electric vehicles (FCEVs).

Diagnosing the Reality and Future Outlook of Toyota's Revenue from a Strategic Perspective

The company's strategy is analyzed using quantitative performance indicators [17], as the adoption of growth strategies by organizations is a function of improved performance [18]. Financial reports serve as a valuable source, providing stakeholders with information regarding the company's financial position and performance, thereby enabling them to make informed decisions [19]. Thus, one can gauge the present and future condition of Toyota's income with information from the magazine Fortune. From the above general trend of Toyota's revenue in the twenty-first century, it can be noted that Toyota is playing on the growth strategy. The revenue figures are indicated in Table (2) below: Prior research also links external growth strategies with organizational performance [20]. Strategic management literature further provides a broader framework for evaluating corporate growth choices [21].

Table 2. Forecasting the trend of Toyota's revenue strategy from 2001 to 2030 using the Linear Regression with Time method.

02-10-2026 Year	Actual Data	Forecast by LR	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-square
1	120.841	155.9464	-35.10541	-35.10541	35.10541	1232.39	29.05091	-1	
2	131.754	162.683	-30.92897	-66.03438	33.01719	1094.495	26.26285	-2	
3	153.111	169.4195	-16.30852	-82.3429	27.44763	818.3195	21.05904	-3	
4	172.616	176.1561	-3.540054	-85.88295	21.47074	616.8726	16.30699	-4	
5	185.805	182.8926	2.912384	-82.97057	17.75907	495.1945	13.35908	-4.672011	0.6213096
6	230.2	189.6292	40.57085	-42.39972	21.56103	686.9944	14.06993	-1.966498	0.1378363
7	230.2	196.3657	33.8343	-8.565414	23.31436	752.3895	14.15962	-0.367388	0.1114139
8	204.352	203.1022	1.249771	-7.315643	20.55628	658.536	12.46612	-0.3558836	0.1560575
9	204.106	209.8388	-5.732788	-13.04843	18.90923	589.017	11.39307	-0.6900563	0.2136314
10	221.76	216.5753	5.184662	-7.86377	17.53677	532.8034	10.48756	-0.4484161	0.2622994
11	235.364	223.3119	12.05212	4.188354	17.03817	497.5716	9.99966	0.2458219	0.3015443
12	265.701	230.0484	35.65256	39.84091	18.58937	562.0327	10.28455	2.14321	0.3035905
13	256.454	236.785	19.66904	59.50995	18.67242	548.5587	10.0834	3.187051	0.3392392
14	247.702	243.5215	4.180481	63.69043	17.63728	510.6243	9.483705	3.611125	0.3905067
15	236.592	250.2581	-13.66608	50.02435	17.37253	489.0334	9.236539	2.879508	0.457251
16	254.694	256.9946	-2.300629	47.72372	16.43054	458.7997	8.715711	2.904575	0.5132915
17	265.172	263.7312	1.440826	49.16455	15.54879	431.9336	8.234983	3.161953	0.5609757
18	272.612	270.4677	2.144287	51.30884	14.8041	408.1927	7.821183	3.465854	0.6039804
19	275.288	277.2043	-1.91626	49.39258	14.12579	386.9021	7.446178	3.496624	0.6503868
20	256.721	283.9408	-27.21979	22.17279	14.78049	404.6029	7.604013	1.500139	0.7311535
21	279.337	290.6773	-11.34033	10.83246	14.61667	391.46	7.435238	0.7411029	0.7845946
22	274.491	297.4139	-22.92288	-12.09042	14.99423	397.5508	7.476866	-0.8063386	0.8552468
23	312.018	304.1505	7.867554	-4.22287	14.68437	382.9573	7.261415	-0.2875758	0.8497014
24	315.11	310.887	4.222992	1.220703E-04	14.24848	367.7438	7.014696	8.567251E-06	0.8553482
25		317.6235							
26		324.3601							
27		331.0966							
28		337.8332							
29		344.5697							
CFE		1.220703E-04							
MAD		14.24848							
MSE		367.7438							
MAPE		7.014696							
Trk.Signal		8.567251E-06							
R-square		0.8553482							
		Y-intercept=149.2099							
		Slope=6.7365							

Prepared by the researcher based on the *Fortune* magazine website (<https://fortune.com>) and using the WinQSB software. [22]

The number of years in the study period was listed in the first column on the left side of Table (2): 24 years. The second column is the actual revenue Toyota has received from 2001 to 2024, and the table shows that the revenue has been increasing continually since 2001, except in 2008 and 2009 years, when Toyota was affected by the financial crisis and economic collapse in the United States,

which affected all nations in the world. Some years also saw a decrease in certain years, but for different reasons, for example, the COVID-19 crisis, which had a major impact on all businesses. The values that are shown in the third column are estimated or predicted using the "Linear Regression with Time" method, and are expected to continue the growth strategy that Toyota has been pursuing for the next five years, with the predicted values of their revenues in 2026 through 2030 being 317.623, 324.360, 331.096, 337.833, and 344.569, respectively.

The fourth column is the prediction error, or how well the model has performed the prediction; a smaller number means the prediction is more accurate. The statistical metrics are error tracking measures, Mean Squared Error (MSE), Mean Absolute Percentage Error (MAPE), tracking signal, and coefficient of determination, which are displayed in columns 5–10. Analysis of the MSE, MAPE and coefficient of determination values shows that this method is more effective and reliable than other statistical methods.

The coefficient of determination was 0.855 and MAPE value was 7.014 (low compared to other methods available in the software). This second value is quite good, signifying the quality of the model and the explanatory power of the method, as it suggests that 86% of the model's behavior is explained by past behavior of the revenue.

The WinQSB software also enables the graphical presentation of the actual and projected path of the Toyota's revenue growth strategy, for the period 2001 to 2024, as shown in the Figure (3) below:

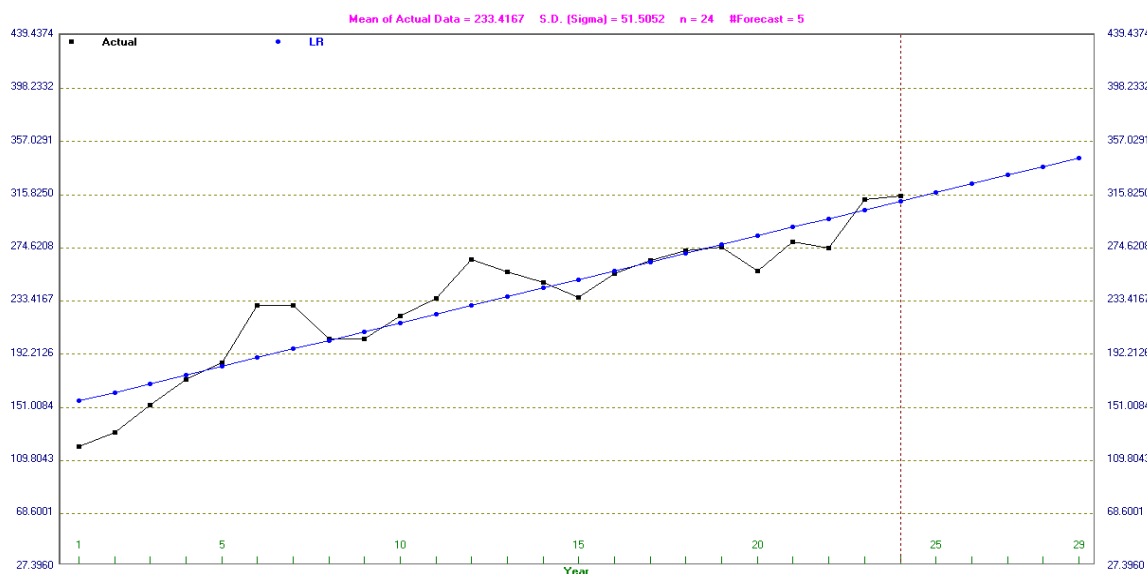


Figure 3. Actual and estimated trajectories of Toyota's growth strategy (revenue growth)

Source: Prepared by the researcher

Figure (3) shows a high degree of correspondence between the actual and estimated values, reflecting the quality of the analysis and the tools employed.

Analysis of the Current State and Future Outlook of Toyota's Profit Growth from a Strategic Perspective

An organization's profits reflect its standing and level of acceptance among customers. Statistics provided by *Fortune* magazine indicate a rise in Toyota's profits during the last decade, as illustrated in Table (3) below:

Table 3. Toyota's Actual and Projected Profits (2014–2024)

02-10-2026 Year	Actual Data	Forecast by LR	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-square
1	19.766	16.29501	3.470995	3.470995	3.470995	12.04781	17.56043	1	
2	19.264	17.48417	1.779831	5.250826	2.625413	7.607802	13.39979	2	
3	16.899	18.67333	-1.77433	3.476496	2.341719	6.121284	12.43307	1.484592	
4	22.51	19.86249	2.647507	6.124002	2.418166	6.343286	12.26517	2.532499	
5	16.982	21.05166	-4.069656	2.054346	2.748464	8.38705	14.60504	0.7474524	0.6993378
6	19.096	22.24082	-3.144819	-1.090473	2.814523	8.637523	14.91561	-0.3874451	
7	21.18	23.42998	-2.249983	-3.340456	2.733875	8.126794	14.3024	-1.221876	
8	25.371	24.61914	0.7518559	-2.5886	2.486122	7.181605	12.88503	-1.04122	
9	18.11	25.80831	-7.698307	-10.28691	3.065254	12.96853	16.17654	-3.355973	
10	34.214	26.99747	7.21653	-3.070377	3.480381	16.87951	16.66812	-0.8821957	0.4812967
11	31.257	28.18663	3.070366	-1.144409E-05	3.443107	16.20202	16.04583	-3.323768E-06	0.4660391
12		29.3758							
13		30.56496							
14		31.75412							
15		32.94329							
16		34.13245							
CFE		-1.144409E-05							
MAD		3.443107							
MSE		16.20202							
MAPE		16.04583							
Trk.Signal		-3.323768E-06							
R-square		0.4660391							
		Y-intercept=15.1058							
		Slope=1.1892							

Source: Prepared by the researcher based on the Fortune magazine website, using WinQSB software.

In the results shown in Table (3), the time period of the study is 11 years, which is the period of time for which the data of Toyota profits is available from the website of the magazine *Fortune*. The second column is Toyota's reported profits for the range of years 2014 to 2025; the third column shows the reported or predicted profits calculated using the Linear Regression with Time method. The analysis of the time series, generated by use of WinQSB software, indicates that Toyota will be continuing its strategy of profit growth over the five-year forecast period, with the forecasting model projecting that profits for the years 2026–2030 will be higher than the profit for the year 2025, and will increase from 29.375 in 2026 to 34.132 in 2030.

The fourth column is the prediction error, which are low numbers, as a lower number means the prediction is more accurate. In statistical metrics, the error tracking measures, Mean Squared Error (MSE), Mean Absolute Percentage Error (MAPE), tracking signal and coefficient of determination are included in columns 5–10. The values of MSE, MAPE and coefficient of determination indicate that this method is relatively efficient and reliable in comparison with other statistical methods as the MAPE value is 16% the lowest value of all methods provided by the software and the value of coefficient of determination at an overall level is acceptable at approximately 47% value.

To further confirm the quality of the method employed to predict the trend of Toyota's profit growth strategy, the WinQSB software can be used to graphically display the actual and forecasted trajectory of the strategy as shown in the diagram below:

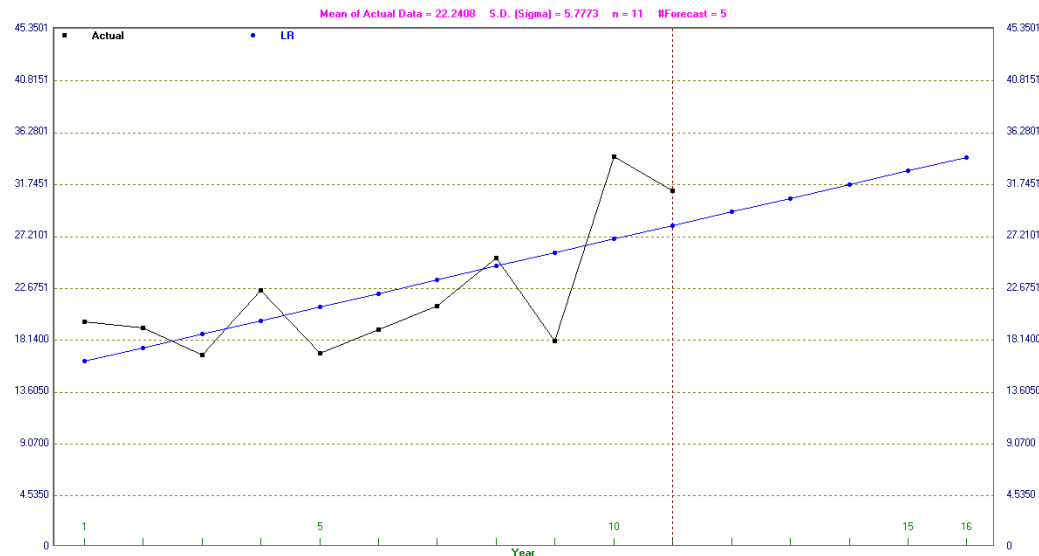


Figure 4. Toyota's actual and estimated profits from 2014 to 2024.

Source: Prepared by the researcher

Figure (4) reveals a high degree of correspondence and overlap between the actual and estimated values, demonstrating the quality of the forecasting method employed.

Conclusions and Recommendations

Toyota, as an industry leader, generally has taken a growth strategy. But there have been times in the past, including the 2008 financial crisis and the COVID-19 crisis of 2020, when sales slashed. This suggests that a growth strategy is a goal all organizations strive for, but that stability and retrenchment strategies are imposed on them rather than sought out.

The automotive industry is still a lucrative field for investors and investors organizations, with the Electric and Hybrid vehicles sector showing the most impressive growth potential. But it's a trend that has been gaining momentum among industry leaders, and it's indicative of the direction the sector is moving: Internal combustion engine vehicles may not be viable in the future because of the rising costs of fuel driven by fuel scarcity and the rising extraction costs putting companies who rely on these vehicles in a precarious position. As a result, industry leaders have pivoted to increase EV manufacturing, seeing it as a strong area that has a lot of potential to grow.

The automotive industry is an industry that can be continually renewed and developed as long as there are energy sources that can be tapped and used. Moreover, no viable alternative is available to consumers that could threaten the industry; although the car has been around for over a hundred years, it has never been so indispensable as now, and demand for it is steadily increasing making this a very promising industry.

The current study recommends conducting a serious, in-depth analysis to determine assuming automakers cannot find an alternative fuel source exactly when they should cease production of fuel-powered vehicles. The idea is to have the end of the life of the last manufactured vehicle coincide with the end of the supply of the last drop of fuel. So, there is no vehicle now manufactured that will not have fuel available in the future, thus maintaining sustainability and not wasting resources that belong to the future generations; otherwise, that last car that used resources to be built will be just junk since it won't have fuel to run it, while future generations could have used the resources to build it. To put it simply, the study is designed to determine the best time for all car manufacturers to cease making them so they don't waste resources on cars that will be too useless to use due to the depletion of energy.

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