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Huawei Financial Performance During Covid-19 Pandemic

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Abstract

This study provides a comprehensive evaluation of the financial performance of Huawei Technologies Co., Ltd. from 2017 to 2021, with a focus on the impact of the epidemic on its operations. The research utilizes Huawei's official annual report as a case study, analyzing financial reports and strategies employed during challenging times, as well as the associated risks. The study findings reveal a significant decrease in Huawei's revenue in 2021, accompanied by a continued investment in research and development. However, the company's financial performance is still optimistic; operating profit and net profit increased in 2021. The research also indicates a decline in financial leverage and interest coverage multiples, highlighting the company's weak performance in generating returns for creditors and shareholders. Additionally, Huawei's long-term debt burden appears to be increasing, although liquidity does not show any signs of problems, remain strength in 2021. The study provides valuable insights into the financial challenges and strategies employed by multinational corporations facing external political factors, such as the COVID-19 pandemic and the United States' sanctions. As such, it contributes to the existing literature on multinational corporations' financial performance. The research findings offer important insights for scholars, practitioners, and investors interested in understanding the financial challenges and strategies of multinational corporations in the face of external political factors.

Keywords: *Covid-19 epidemic, financial ratio analysis, Huawei, annual report, performance, financial report*

1. Introduction

Huawei Technologies Co., Ltd. is a multi-regional technology company and the largest manufacturer of telecommunications products worldwide. Established in 1987 by Ren Zhengfei, the company has a 36-year history (as of 2023). Despite a relatively small number of electronic technology brands in China, Huawei broke new ground in 2014 when it became the first Chinese brand to join the ranks of the top 100 global brands, alongside well-known names such as Apple, Google, Coca-Cola, IBM, and Microsoft (Marr, 2019). The 20th century witnessed a remarkable period of technological development, but the COVID-19 pandemic of 2019 dealt a severe blow to the global economy, resulting in a downturn. Huawei was not spared from the impact of the pandemic and was compelled to adapt its internal and marketing strategies accordingly. This article presents a comprehensive analysis of Huawei's financial performance based on its official annual reports from 2017 to 2021. The study is complemented by an extensive examination of external factors that influenced the company at various stages, with particular emphasis on its challenges during difficult periods. Huawei is a global leader in providing communication solutions, and is recognized for its continuous innovation and improvements based on customer needs, as well as its open collaboration with partners. The company provides efficient and effective ICT solutions and services in telecommunications networks, enterprise networks, consumer technologies, and cloud computing, to generate maximum value for its customers. Huawei's products and solutions are currently used in over 170 countries and regions, serving about one-third of the world's population (Tao, De Cremer & Chunbo, 2016). Huawei has undergone several stages of development. According to Liu and Li (2017), Huawei's development history can be divided into four stages. The first stage occurred during the early years of Huawei's establishment, and was characterized by the company acting as an agent to accumulate capital. Huawei's path of development during this period was opportunity-oriented (Wei & Li, 2012).

However, Huawei's CEO, Ren Zhengfei, soon realized that companies only have the opportunity to go further if they have unique products, and the company started the road of independent research and development in 1990 (Liu & Li, 2017). The second stage, from 1996 to 2004, was marked by Huawei's pursuit of internationalization. During this period, Huawei used the international management reforms it

learned in the West to practice on itself and eventually broke into its own world on the international market (Li, Wang, & Sun, 2017). To achieve this, Huawei invested heavily in learning advanced management systems and R&D processes from the West. Huawei established a process-based operation management system oriented towards customer needs, building harmony and a "harmonious but different" East to jointly create customer value (Liu & Li, 2017). The third stage of Huawei's development occurred from 2005 to 2010, which saw the company enter a period of business model transformation. During this period, Huawei no longer relied on low prices to compete in the market, but instead focused on technological innovation to become a telecom solutions provider (Deng & Wu, 2011). Huawei abandoned low-end products and invested more in the research and development of new products, with the entire organizational change oriented towards customers (Liu & Li, 2017). The fourth stage of Huawei's development, from 2011 to the present, is characterized by the company's focus on research on cloud-pipe-terminal integration. During this stage, Huawei has entered the field of 5G + artificial intelligence and launched the Hong Meng system, which demonstrates the company's commitment to providing its users with the best products (Wang & Li, 2020). Huawei's development history is the result of continuous adjustments to marketing strategies and human resource changes. Huawei's success can be attributed to its vision, continuous learning from the West, and focus on customer needs and technological innovation. As the company continues to grow and develop, it will be interesting to see how it adapts to new challenges and opportunities in the global market.

2. Literature Review

Huawei's highlights in 2021

In terms of world connectivity, Huawei's 5G services continue to innovate in AR, VR, and free-view video, helping the digital development of medical, aviation and other industries (Yu, 2021). The RuraStar series is committed to bringing the network to more places with higher-quality broadband services, and Huawei has also paid attention to the digital development of remote villages. So far, it has provided digital connections to more than 70 countries and 60 million people in remote areas (Zhang, 2021). Harmony Connect has 1,900 ecosystem partners; more than 220 million devices using Harmony OS. In the field of smart cars, HarmonyOS smart cockpit, MDC 801, 4D imaging radar, and "Huawei Octopus applications were launched for automated driving and smart thermal management systems (Huawei Investment, 2021). In terms of personalized services, on the basis of smart wear, Huawei has combined its corresponding products, such as mobile phones, tablets, and car cockpits, with HarmonyOS to achieve seamless transfer of terminal devices. The number of HMS global applications increased by 147% year-on-year, and the distribution volume exceeded 432 billion times. As a result, Huawei has become the world's fastest-growing mainstream cloud service provider. The newly released aPaaS provides a full-process (Abbas et al., 2019), one-stop development platform, enabling industry scenario-based innovation and accelerating the rapid digital transformation of the industry. In addition, Huawei has the ICT infrastructure advantage of device-pipe-cloud synergy, helping the digital transformation of various industries. So far, more than 250 Fortune 500 companies in more than 700 cities around the world have chosen Huawei as their digital transformation partner, along with 30,000 market partners.

Highlights of Huawei in 2020

Huawei has emerged as a leading player in next-generation network technologies such as 5G, intelligent IP, all-optical networks, and ADN by collaborating with global operators and launching 5GtoB ecological development with partners (Huawei Investment, 2020). In 2018, Huawei released the RuralStar Lite solution and subsequently improved upon it with the RuralStar Pro solution in 2019, providing high-quality broadband services in remote mountainous areas (Zhang, 2021). The RuralStar project has successfully delivered internet mobile services to over 60 countries and regions, covering more than 50 million people living in remote areas (Huawei Investment, 2020). Additionally, Huawei has focused on the development of intelligent technologies, launching the world's first full-life cycle knowledge computing solution and introducing the one-stop AI development platform ModelAtr3.0 (Huawei Investment, 2020).In 2019, Huawei opened up the Ascend full-stack basic software and hardware platform, hardware, heterogeneous computing architecture CANN, and full-scenario AI computing framework Mind Spore to help enterprises improve work efficiency and achieve unmanned management (Huawei Investment, 2020). Huawei's HMS ecosystem system was updated with the release of HMS Core 5.0, and the integration of HMS

Core applications exceeded 120,000 applications, with more than 2.3 million registrants worldwide (Huawei Investment, 2020). In the same year, HarmonyOS was upgraded to version 2.0, providing better services for mobile phone users and application manufacturers (Huawei, 2021). Huawei has also worked on developing partnerships, with over 19,000 partners and 1.6 million developers in 2019, and collaborated with enterprises in various industries to build "intelligent bodies" with AI as the core and applied them in about 600 scenarios, including government and public utilities, medical care, finance, energy, industry, transportation, and more (Huawei Investment, 2020; Zhang, 2021). Additionally, Huawei launched a global anti-epidemic plan, providing the world with services such as HUAWEI CLOUD AI-assisted diagnosis in collaboration with cooperative enterprises and scientific research institutes, and launched more than 4,000 applications in the application mall (Huawei Investment, 2020).

Highlights of Huawei in 2019

In 2019, Huawei established a joint innovation center in Europe with operators to foster continuous innovation and development of 5G services. The company released the RuralStar Lite solution to provide internet mobile services in remote areas. Huawei's HiLink platform has been successful in registering more than 50 million accounts and shipping over 150 million IoT-connected devices. Collaborating with over 600 well-known home appliance brands, Huawei offers HiLink services. Additionally, Huawei released the ARM-based processor Huawei KunPeng 920 in 2018 and improved it in 2019, launching the TaiShan series server products and cloud services based on the KunPeng 920. To promote personalized experiences, Huawei built HMS (Huawei Mobile Services), providing developers with convenient services based on the "core-device-cloud" capabilities. Huawei has also made significant strides in the field of operating systems, particularly underlying software technologies such as compilers and distributed technology, to develop a full-scene terminal operating system that offers "multi-screen collaboration" and creates a comprehensive smart life experience. These developments are critical in providing practical experiences to its 600 million Huawei end users worldwide (AIFIClaims, 2021; Huawei Investment, 2019; Lin et al., 2018).

Highlights of Huawei in 2018

As a prominent player in the technology industry, Huawei has been actively contributing to global connectivity through the development and deployment of advanced 5G products and solutions that adhere to the 3GPP standards. The company has achieved significant progress in this area, conducting 5G tests with 182 operators globally, forging more than 30 commercial 5G contracts, and deploying over 40,000 5G base stations in different regions. Along with its focus on 5G, Huawei has established itself as a leader in several other domains, including intelligent data centers, premium private lines, and smart campuses. To maintain its competitive edge, Huawei introduced its AI strategy and full-stack, full-scenario AI solutions in 2018, along with HUAWEI CLOUD EI, which serves the needs of businesses and governments. Huawei's KunPeng 920 ARM-based processor and the TaiShan server were also introduced in 2018, catering to several applications, such as ARM native applications, big data, and distributed storage. Huawei's HiLink smart home platform has partnered with 150 manufacturers and over 500 products, offering a personalized experience in the field of smart homes. Huawei's smartphone sales have also ranked among the top three globally, solidifying its reputation as an industry leader. Huawei's commitment to research and development is demonstrated by its collaborations with 211 Fortune in top 500 companies and 48 Fortune in top 100 companies, chosen Huawei as their digital transformation partner (Huawei Investment, 2018; Jiang et al., 2020; Zeng et al., 2020).

Highlights of Huawei in 2017

Huawei's strategic focus has evolved from being investment-driven to value-driven, with an emphasis on developing high-potential products. In 2017, the company achieved impressive results in various domains. Huawei deployed more than 500,000 base stations worldwide, signed over 350 commercial contracts for Network Function Virtualization (NFV) and over 380 contracts for Software-Defined Networking (SDN), and collaborated with more than 1,000 ecosystems for sustainable development (Huawei Investment & Holding Co., Ltd., 2017). Furthermore, as Zhang (2021) noted, Huawei's 5G technology exceeded the standards established by the International Telecommunication Union (ITU). Additionally, Huawei's sub-brand "Honor" experienced excellent sales results, leading to enhanced customer loyalty and a

surge in the company's market scale. In 2017, Huawei's smartphone shipments surpassed 153 million units, accounting for a global market share exceeding 10%, and the company's worldwide brand recognition increased from 81% to 86% (Huawei Investment & Holding Co., Ltd., 2017). Overseas consumers' consideration of the Huawei brand increased significantly, with a year-on-year increase of 100%, marking the first time that Huawei had entered the global smartphone rankings and achieved commendable results in the top three. Huawei Cloud, as of the end of 2017, launched 14 categories, including 99 cloud services and over 50 solutions, serving various sectors such as finance, medical care, transportation, e-commerce, SAP, High-Performance Computing (HPC), and the Internet of Things (IoT) (Zhang, 2021). Huawei was also chosen as a digital transformation partner by 197 Fortune 500 companies in 2017, according to Huawei Investment & Holding Co., Ltd. (2017).

Huawei's sustained commitment to innovation, research, and development has enabled the company to maintain a leading position across multiple domains, including intelligent data centers, high-quality private lines, and smart campuses. As reported by Hou (2019), Huawei unveiled its comprehensive AI strategy in 2018, along with a full-stack, full-scenario AI solutions portfolio, which encompasses the world's first Ascend series of chips, products, and cloud services that cater to diverse scenarios. In addition, Huawei introduced the ARM-based processor, the Huawei KunPeng 920, in the same year (AIFIClaims, 2021; Huawei, 2018; Zhang, 2021). Huawei's operational business strategy underwent a transformation from an investment-driven approach to a value-driven approach, with a greater emphasis on potential products. In 2017, Huawei deployed over 500,000 base stations worldwide, signed more than 350 network functions virtualization (NFV) and 380 software-defined networking (SDN) commercial contracts, and collaborated with more than 1,000 ecosystems to foster sustainable development (Huawei Investment & Holding Co., Ltd., 2017). In 2018, Huawei unveiled its comprehensive AI strategy, along with a full-stack, full-scenario AI solutions portfolio, which encompasses the world's first Ascend series of chips, products, and cloud services catering to diverse scenarios. Huawei also introduced the ARM-based processor, the Huawei KunPeng 920, in the same year (Zhang, 2021). Huawei's revenue increased by 19.1% in 2019, and the company shipped over 240 million smartphones globally, securing a market share of 17.6% (AIFIClaims, 2021; Huawei, 2020). Furthermore, in the same year, Huawei's global sales revenue surpassed CNY 858.8 billion, with a net profit margin of 8.0% (Huawei, 2020). Nevertheless, the US government added Huawei to its trade blacklist in 2019, affecting the company's ability to do business with US firms and creating uncertainty in its global supply chain. Despite the impact of the COVID-19 pandemic, Huawei's revenue increased by 3.8% in 2020 compared to the previous year, and the company shipped 240 million smartphones globally (Huawei, 2021). Huawei also prioritized the development of its cloud computing business, with its cloud services expanding to over 170 countries and regions (Huawei, 2021).

Overall, Huawei's commitment to innovation and R&D has helped it to maintain a leadership position in multiple industries, including intelligent data centers, high-quality private lines, and smart campuses. Despite the obstacles it has faced in recent years, Huawei has remained committed to delivering its consumers with superior goods and services.

3. Methodology

The outbreak of the Covid-19 pandemic has resulted in a paradigm shift in the national institutional economic model and the industrial chain, thereby impacting the community with a shared future. The effects of the pandemic have been felt worldwide, overwhelming most countries and affecting trade globalization. To control the spread of the virus, countries have resorted to social isolation and border closure measures, which have effectively curbed the epidemic but also led to the shutdown of economies, disrupted global supply chains, and had a significant impact on the world economy. As one of the giants of smart products and the world's leading provider of ICT infrastructure and smart terminals, Huawei has not been spared from the economic depression brought about by the pandemic.

This study aims to analyze Huawei's performance status during the period of 2017–2021 by conducting a thorough analysis of its financial performance using the company's annual reports. To achieve this goal, financial ratios have been employed. The financial ratios are simply employed as main analysis, together with common-sized and growth analysis of data derived from Financial Reports from 2017 to 2021.

4. Findings

The analysis of the data led to the identification of three dimensions: financial performance, the impact of COVID-19, and other factors that affect Huawei.

4.1 Financial Performance

As depicted in the figure below, Compound Annual Growth Rate (CAGR) of Huawei's revenue, operating profit, and cash flow from operating activities have been subject to fluctuations throughout the years under consideration. See Figure 1.

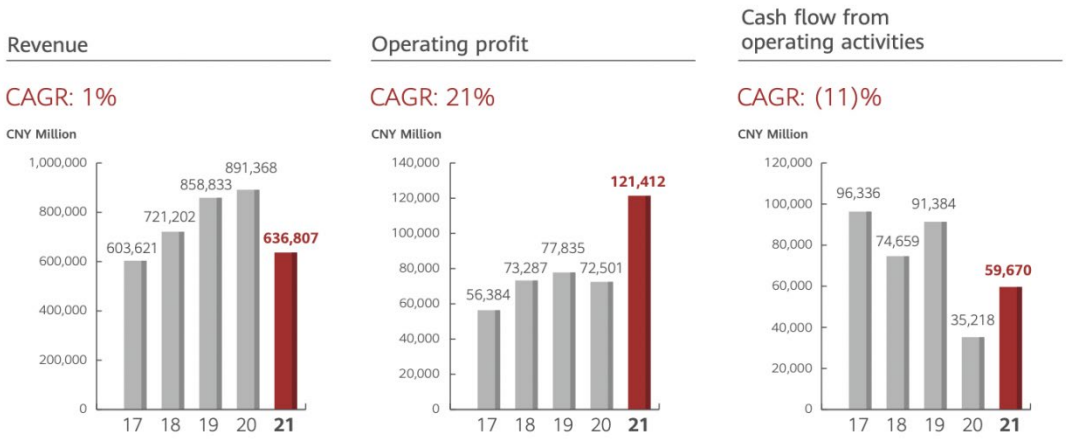

Figure 1 revenue, operating profit, and cash flow

(Source: Huawei Investment and Holding Company Limited., 2021)

In light of the economic challenges posed by the COVID-19 pandemic, companies, particularly multinational corporations such as Huawei, were expected to experience a significant downturn. However, Huawei's revenue did not demonstrate a declining trend until 2021, while its operating profit exhibited a sharp increase in the same year. In contrast, the cash flow generated by operating activities displayed a declining trend in both 2020 and 2021, albeit remaining higher in 2021 than in 2020. Given these observations, this article seeks to explore the financial impact of the pandemic on Huawei and investigate the reasons for the company's current state of operating profit growth by conducting a thorough analysis of Huawei's annual reports for 2017–2021, coupled with an extensive review of relevant literature.

Table 1 presents Huawei's financial statement for the period of 2017–2021. Financial statements serve as an important tool for stakeholders to assess a company's financial health and performance over a specified period. They provide a systematic and comprehensive overview of an organization's financial status and operating results, enabling management personnel to evaluate the completion of various task indicators within the unit. As such, the financial statement for Huawei allows for a detailed examination of the company's financial performance, which is important in assessing its overall health and sustainability.

Table 1 Financial Position

Financial Position	December 31				
(CNY Million)	2021	2020	2019	2018	2017
Non-current assets	213,593	185,460	154,768	135,678	99,964
Current assets	769,378	691,394	703,893	530,114	405,261
Total assets	982,971	876,854	858,661	665,792	505,225
Non-current liabilities	175,864	154,114	116,869	73,477	42,851
Current Liabilities	392,455	392,332	446,255	359,250	286,758
Total liabilities	568,319	546,446	563,124	432,727	329,609
Equity	414,652	330,408	295,537	233,065	175,616
Total liabilities and equity	982,971	876,854	858,661	665,792	505,225
Common Size (%)					
Non-current assets	21.73	21.15	18.02	20.38	19.79
Current assets	78.27	78.85	81.98	79.62	80.21
Total assets	100.00	100.00	100.00	100.00	100.00
Non-current liabilities	17.89	17.58	13.61	11.04	8.48
Current liabilities	39.93	44.74	51.97	53.96	56.76
Total liabilities	57.82	62.32	65.58	64.99	65.24
Equity	42.18	37.68	34.42	35.01	34.76
Total liabilities and equity	100.00	100.00	100.00	100.00	100.00

Source: Combined and calculated by authors

A common size financial statement is an instrument that expresses financial report elements as a percentage of a common base figure. This allows for more convenient comparisons of a company's financial status across different periods or with other companies. The common-size financial statement can also help identify significant changes in a company's financial condition. Upon analyzing Huawei's common-size financial statement for the period of 2017 to 2021, it is evident that the proportion of current assets has remained relatively stable. In 2019, current assets accounted for the highest proportion at 81.98%, while the lowest was in 2021 at 78.27%. In contrast, non-current assets have shown fluctuations, accounting for only 8.48% of total liabilities and equity in 2017, with a trend of increasing year by year. The growth rate of non-current assets was highest between 2019 (13.61%) and 2020 (17.58%) and ultimately reached 17.89% in 2021.

In terms of current liabilities, they mainly consist of short-term loans, notes payable, accounts payable, and others. The analysis shows that the proportion of Huawei's current debt is decreasing year by year. The highest proportion of current debt was at 56.76% in 2017, while the lowest was at 39.93% in 2021. The most significant decline in current debt occurred between 2019 and 2020, with a decrease from 51.97%

to 44.74%. Overall, the common-size financial statement provides insights into Huawei's financial health and highlights changes in its financial condition over the years.

The income statement in Table 2 provides crucial information on Huawei's financial performance from 2017 to 2021. It reveals that Huawei's revenue in 2021 was only 636,807 CNY million, considerably lower than its revenue in the preceding years. Despite this, the cost of goods sold, which is a critical factor in the computation of gross profit, reached its highest level of 63.30% in 2020 and remained stable at around 60% for the other years, except for 2021, when it declined to 51.72%. This suggests that in 2021, Huawei made a conscious effort to reduce the cost of its products to maintain its profitability. Furthermore, the proportion of net profit, which is the result of subtracting all costs and expenses from revenue, remained around 7% from 2017 to 2020 but significantly increased to 17.86% in 2021. This could be attributed to Huawei's successful cost-cutting strategy and effective management of its resources. The income statement's findings thus highlight Huawei's focus on maintaining profitability and its ability to adapt to market changes and challenges.

Table 2 Result of Operations

Results of Operations	December 31				
(CNY Million)	2021	2020	2019	2018	2017
Revenue	636,807	891,368	858,833	721,202	603,621
Cost of goods sold	329,365	564,236	536,144	443,031	365,479
Gross profit	307,442	327,132	322,689	278,171	238,142
Total operating expenses	-246,827	-255,323	-244,854	-204,884	-181,758
Other income, net	60,797	692	-	-	-
Operating profit	121,412	72,501	77,835	73,287	56,384
Net financial income	493	-367	178	253	-573
Income tax	-8,227	-7,655	-15,367	-14,301	-8,673
Net profit	113,718	64,649	62,656	59,345	47,455
Common size (%)					
Revenue	100.00	100.00	100.00	100.00	100.00
Cost of goods sold	51.72	63.30	62.43	61.43	60.55
Gross profit	48.28	36.70	37.57	38.57	39.45
Total operating expenses	-38.76	-28.64	-28.51	-28.41	-30.11
Other income, net	9.55	0.08	-	-	-
Operating profit	19.07	8.13	9.06	10.16	9.34
Net financial income	0.08	-0.04	0.02	0.04	-0.09
Income tax	-1.29	-0.86	-1.79	-1.98	-1.44
Net profit	17.86	7.25	7.30	8.23	7.86

Source: Combined and calculated by authors

According to Grassano et al. (2021), Huawei has consistently invested heavily in research and development (R&D), with total R&D investment reaching 142.7 billion yuan by the end of 2021. This accounts for 22.4% of Huawei's full-year revenue in 2021, making it the largest R&D spender in China. Furthermore, Huawei's R&D investment has increased every year since 2010, with a total investment of over 845 billion yuan by 2022. In 2020, Huawei's R&D investment was second in the world, behind only Amazon (Ji et al., 2021).

In addition to its substantial R&D investment, Huawei has also made significant contributions to the field of intellectual property. According to the World Intellectual Property Organization's 2021 IP Facts and Data Interaction Table, Huawei filed 6,952 published TCP applications in 2021, making it the largest

applicant for five consecutive years (WIPO., 2021). As of the end of 2021, Huawei holds over 110,000 valid authorized patents worldwide, with over 90% of them being invention patents (Huawei, 2021). Huawei's dedication to R&D is also reflected in its highly skilled workforce. The company is known for its rigorous selection process and has attracted many talented individuals in various fields. As of 2019, Huawei Research Institute had about 107,000 employees engaged in research work, comprising 54.8% of the total number of people working in the company (Ren, 2019). Among these employees are more than 700 scientists, over 800 physicists, and over 120 R&D scientists (Ren, 2019). See Table 3.

Table 3 Total Operating Expenses

Total Operating Expenses (CNY Million)	2021	2020	2019	2018	2017
Research and development expenses	142,666	141,893	131,659	101,509	89,690
Selling and administrative expenses	104,161	113,430	114,165	105,199	92,681
Total operating expenses	246,827	255,323	244,854	204,884	181,758
Revenue	636,807	891,368	858,833	721,202	603,621
Revenue %	100.00	100.00	100.00	100.00	100.00
Research and development expenses	22.40	15.92	15.33	14.07	14.86
Selling and administrative expenses	16.36	12.73	13.29	14.59	15.35
Total operating expenses	38.76	28.64	28.51	28.41	30.11
Growth (%)					
Research and development expenses	0.54	7.77	29.70	13.18	
Selling and administrative expenses	-8.17	-0.64	8.52	13.51	
Total operating expenses	-3.33	4.28	19.51	12.72	

Source: Combined and calculated by authors

According to Huawei's income statements from 2017 to 2021, the proportion of total operating expenses in 2021 was the highest, accounting for 38.78% of the total operating expenses. This is primarily due to the decline in income in 2021, which was the lowest in five years (Huawei, 2021). Notably, Huawei's total operating expenses did not increase significantly this year. During the period from 2018 to 2019, Huawei's research and development expenditures increased the most, resulting in the highest growth rate of total operating expenses during that year. This coincided with Huawei's participation in the World Trade Organization and the US government's restrictions on Huawei products, leading to Huawei's launch of its own HonGeng system in 2019 (Huawei, 2019).

Furthermore, the data indicates that total expenses have remained relatively stable since 2018, while the growth rate of selling and administrative expenses from 2020 to 2021 has been the lowest at -8.17%. This implies that Huawei is increasingly focusing its investments on product research and development (Huawei, 2021).

Huawei's commitment to research and development is further evident in its total investment, which reached 142.7 billion yuan by the end of 2021, accounting for 22.4% of its full-year 2021 revenue (Grassano, et al., 2021). Additionally, Huawei's investment in research and development has been increasing every year, with a total investment exceeding 845 billion yuan from 2010 to 2022 (Huawei, 2021). Huawei's investment in research and development is ranked second in the world, exceeding that of Apple and Samsung and second only to Google (Huawei, 2020). Huawei is also the largest applicant of TCP applications worldwide, with 6,952 published applications in 2021 and more than 110,000 valid authorized patents as of the end of 2021 (N.D., 2021). Huawei's research and development efforts are supported by a team of highly qualified employees, with about 107,000 employees engaged in research work at Huawei Research Institute, including a large number of highly skilled scientists and physicists (Huawei, 2019). Huawei's increasing investment in research and development and its focus on product innovation are important factors contributing to the company's success and competitiveness in the technology industry. See Table 3.

According to the cash flow statement of Huawei for the period of 2017-2021 (see Table 4), it can be observed that the growth rate of adjustment for depreciation, amortization, impairment, net foreign exchange losses, and non-operating income and expense has been the lowest in the past five years, standing at -167.19%. This indicates that despite the higher operational efficiency of Huawei during this period, it has failed to address the internal depreciation and amortization of its assets. Furthermore, the changes in operating assets and liabilities have witnessed a significant decline from 2019 to 2020, recording a growth rate of -2246.43%. This suggests that during this time frame, Huawei may have faced the risk of inadequate assets and liabilities that could not be paid off in due time.

This financial analysis highlights the potential challenges faced by Huawei in managing its operational and financial aspects. It is crucial for companies to maintain an optimal balance between operational efficiency and asset management to sustain growth and profitability. The findings of this analysis indicate that Huawei needs to focus on improving its internal asset management and addressing its liabilities to mitigate the risks associated with financial instability.

Table 4 Cash Flow from Operating Activities

Cash Flow from Operating Activities (CNY Million)	2021	2020	2019	2018	2017
Net profit	113,718	64,649	62,656	59,345	47,455
Adjustment for depreciation, amortization, impairment, net foreign exchange losses and non-operating income and expense	-22,252	33,116	25,814	14,090	14,255
Cash flow before change in operating assets and liabilities	91,466	97,765	88,470	73,435	61,710
Change in operating assets and liabilities	-31,796	-62,547	2,914	1,224	34,626
Cash flow from operating activities	59,670	35,218	91,384	74,659	96,336
Growth (%)					
Net profit	75.90	3.18	5.58	25.06	
Adjustment for depreciation, amortization, impairment, net foreign exchange losses and non-operating income and expense	-167.19	28.29	83.21	-1.16	
Cash flow before change in operating assets and liabilities	-6.44	10.51	20.47	19.00	
Change in operating assets and liabilities	-49.16	-2,246.43	138.07	-96.47	
Cash flow from operating activities	69.43	-61.46	22.40	-22.50	

Source: Combined and calculated by authors

Based on an analysis of Huawei's financial statements from 2017 to 2021, it can be observed that the floating-rate long-term financial instruments and long-term borrowings, which reflect the company's exposure to interest rate risk, have fluctuated significantly over the period under review. Specifically, the highest growth rate for this indicator was observed from 2017 to 2018 at 327.97%, while the lowest growth rate was recorded from 2020 to 2021 at 26.82%. Overall, the trend in growth rates of these financial instruments showed a downward trajectory. This suggests that Huawei's interest rate risk has been subject to fluctuations over the years, with the company potentially being exposed to changes in interest rates in the financial markets. See Table 5.

Table 5 Interest Rate Risk

Interest Rate Risk (CNY Million)	2021	2020	2019	2018	2017
Fixed-rate long-term financial instruments: long-term borrowings	39,250	44,261	35,646	28,410	26,786
Floating-rate long-term financial instruments: long-term borrowings	123,026	97,009	65,934	33,671	7,119
Total	162,276	141,270	101,580	62,117	33,905
Growth (%)					
Fixed-rate long-term financial instruments: long-term borrowings	-11.32	24.17	25.47	6.06	
Floating-rate long-term financial instruments: long-term borrowings	26.82	47.13	95.82	372.97	
Total	14.87	39.07	63.53	83.21	

Source: Combined and calculated by authors

The presented figure in Table 6 depicts the current ratio, quick ratio, and cash ratio of Huawei from 2017 to 2021. The current ratio measures the company's ability to repay current liabilities with current assets, and Huawei's current ratio has been increasing steadily from 2017 to 2021, reaching 1.96 in 2021. This indicates that the company's liquidity position has been improving, and its ability to use existing assets to repay current liabilities has strengthened. Furthermore, the current ratio suggests that Huawei's solvency has not been significantly impacted by the COVID-19 pandemic.

The quick ratio, also known as the acid test ratio, is a measure of a company's ability to meet its current liabilities with its most liquid assets. Huawei's quick ratio was not very high in 2017, only reaching 0.36, but it increased slightly to 0.38 in 2018. However, due to the impact of COVID-19, it dropped to 0.29 in 2019, the lowest in the past five years, indicating that the company's current debt was too heavy and there may have been repayment risks. Nonetheless, the quick ratio showed an upward trend again in 2020, reaching 0.65 in 2021. A quick ratio of 1 is considered ideal; a ratio lower than 1 indicates low short-term solvency, while a ratio too high suggests that the company has excess liquidity and production capacity issues.

The cash ratio, also known as the absolute liquidity ratio, is a measure of a company's ability to repay its current liabilities with its cash assets. Huawei's cash ratio has been relatively stable over the five-year period, hovering around 0.2. The cash ratio is an important indicator of a company's short-term solvency or financial status.

The analysis indicates that Huawei's current ratio and quick ratio have shown positive trends, indicating improved liquidity and solvency. However, the quick ratio is still below the ideal level of 1, indicating potential short-term solvency issues. The cash ratio is relatively low, indicating that the company may need to rely on other assets to meet its current liabilities.

Table 6 Financial Ratios

Financial Ratios	2021	2020	2019	2018	2017	Formulas
Liquidity Ratio Analysis:						
Current ratio	1.96	1.76	1.58	1.48	1.41	Current assets / Current liabilities
Acid test ratio or quick ratio	0.65	0.41	0.29	0.38	0.36	(Current assets -Inventory)/(Current liability)
Cash ratio	0.15	0.09	0.20	0.21	0.34	(Cash + Marketable securities) / Current liability
Turnover Ratio Analysis:						
Inventory turnover ratio	2.04	3.37	3.20	4.59	5.05	Cost of goods sold / average inventory
Capital turnover ratio	1.69	2.98	3.33	4.22	5.09	Net sales (Cost of goods sold) / Capital employed (Total assets-Total current liabilities)
Asset turnover ratio	0.65	1.02	1.00	1.08	1.19	Turnover / Net tangible assets
Net working capital turnover ratio	1.08	1.84	-11.42	-7.72	2.76	Net sales/Net working capital
Operating Profitability Ratio Analysis:						
Earning margin	0.18	0.07	0.07	0.08	0.08	Net income / Turnover
Return on the Investment	0.21	0.15	0.19	0.24	0.26	Profit before interest and tax / Total capital employed
Return on assets (ROA)	0.12	0.08	0.09	0.11	0.11	Net revenues / Total assets
Return on equity (ROE)	0.19	0.13	0.15	0.19	0.22	Profit after taxation – Preference dividends / Shareholder's fund
Business Risk Ratio:						
Operating leverage	-2.36	-1.81	0.33	1.54	-	% change in EBIT / % change in Sales
Financial leverage	1.13	-0.43	0.90	0.84	-	% Change in Net income / % Change in EBIT
Total leverage	-2.66	0.84	0.29	1.29	-	% Change in Net profit / % Change in Sales
Financial Risk Ratio:						
Debt equity ratio	0.95	1.19	1.51	1.54	1.63	Long term debts / Shareholder's fund
Interest coverage ratio	246.27	-197.55	437.28	289.67	-98.40	EBITDA / Interest expense
Debt service coverage ratio	0.31	0.18	0.17	0.20	0.20	Operating income / Debt service
Stability Ratios:						
Fixed asset ratio	0.36	0.38	0.38	0.44	0.46	Fixed assets / Capital employed
Current assets to fixed assets	3.60	3.73	4.55	3.91	4.05	Current assets / Fixed assets
Proprietary ratio	1.94	1.78	1.91	1.72	1.76	Shareholder's fund / Total tangible assets

Source: Combined and calculated by authors

Cash assets, which include cash on hand, deposits, and cash equivalents that can be used for payment at any time, are an important measure of a company's liquidity. A higher cash ratio indicates stronger liquidity for the company. Generally, a cash ratio above 20% is considered desirable. However, if the ratio is too high, it implies that the company's current assets are not being utilized efficiently, leading to low profitability for cash assets. Furthermore, an excessively high amount of such assets increases the opportunity cost for the company.

Huawei's cash ratio was at its highest in 2017, reaching 0.34. However, there was a downward trend from 2018 to 2021, with a significant drop in 2020 to 0.09. This indicates that under the impact of the COVID-19 pandemic, Huawei's immediate liquidity and debt repayment capabilities were at risk. The decline in the

cash ratio suggests that Huawei may have faced difficulties in generating sufficient cash inflows or may have allocated its cash resources to non-liquid assets. Therefore, Huawei may need to reassess its cash management strategies to maintain its liquidity position and ensure its short-term solvency.

The turnover rate, also known as the activity rate, is an important measure of a company's resource utilization efficiency. Each financial ratio asset type can be calculated separately, including the inventory turnover ratio, capital turnover ratio, asset turnover ratio, and net working capital turnover ratio (Alqubaisi et al., 2021). The inventory turnover ratio is a measure of the cost of sales relative to the average capital occupied by inventory during a certain period. It is used to evaluate the efficiency of management across various functions of the enterprise, such as procurement, production, and sales. It reflects the number of inventory turnovers in a financial cycle.

Huawei had the highest inventory ratio in 2017 at 5.05, but this has decreased over the subsequent years, reaching 2.04 in 2021. This decline in the inventory turnover ratio suggests that Huawei's liquidity position has weakened, and there is significant pressure on liquidity, which can be attributed to the impact of the COVID-19 pandemic on the company's sales. The lower inventory turnover ratio implies that Huawei may have had difficulty in selling its inventory or may have had a buildup of inventory due to decreased demand. Thus, Huawei may need to reassess its inventory management strategies to improve its liquidity position and operational efficiency.

The capital turnover ratio is an essential financial indicator that assesses the efficiency of a company's asset utilization. It measures the rate at which the company's assets, including fixed and current funds, are being used. A higher ratio signifies a faster turnover of funds, indicating better efficiency in resource utilization. Conversely, a low ratio indicates that the company's funds are not being used efficiently. Huawei's current asset ratio was highest in 2017 at 5.09, followed by a continuous decline in subsequent years. In 2021, the ratio dropped to 1.69, indicating a decline in the company's liquidity. This indicates that Huawei's financial situation was better in 2017 than in subsequent years.

The asset turnover ratio assesses the number of times a company's net tangible assets have been turned over in a year. A higher ratio indicates better operational performance. Huawei's asset turnover ratio was 1.19 in 2017, dropped slightly to 1.00 in 2019, and increased to 1.02 in the following year. However, the ratio plummeted to 0.65 in 2021. The decline in the ratio suggests increased pressure on Huawei's asset turnover. The outbreak of the Covid-19 pandemic affected Huawei's operations, resulting in a reduction in the number of people going out and a significant impact on the sales industry.

The net working capital turnover ratio reflects whether a company's working capital has been efficiently utilized for sales. In 2017, the indicator was positive but dropped sharply to -7.72 in 2018 and further declined to -11.42 in 2019. This indicates inefficient utilization of funds by Huawei before the onset of the Covid-19 pandemic. The sharp decline in 2019 is indicative of Huawei's inability to adjust its capital operations. The impact of Covid-19 resulted in maximum pressure on the company in the short term. However, the net working capital turnover rate returned to a positive value in 2020 and 2021, although not as high as in 2017.

Table 6 presents Huawei's earning margin from 2017 to 2021, which ranges between 0.07 and 0.08, indicating that the company achieved considerable sales volume, but its cost took up a substantial portion, resulting in relatively low profits. However, in 2021, the earning margin abruptly increased to 0.18, signifying an 18% profit earned with each product sold. This data indicates the necessity and success of Huawei's strategic adjustment, as it achieved higher profits in 2021 with a smaller sales volume compared to 2019 and 2020.

The return on investment (ROI) is a measure of a company's profitability, operational performance, and efficiency, calculated as the economic return from an investment in a business activity. The highest ROI in 2017 reached 0.26, but it decreased to 0.19 and 0.15 in 2019 and 2020, respectively, indicating an increasing total investment without commensurate profit growth. The COVID-19 pandemic also contributed to the challenging sales environment. In 2021, Huawei was able to achieve the "low sales but good results" situation by reducing costs to increase the ROI.

The return on assets (ROA) reflects the profitability of an organization's asset deployment in generating sales and profits. Huawei's ROA was 0.11 in 2017 and decreased to 0.09 in 2019 and 0.08 in 2020, suggesting weaker performance in these years compared to 2017 and 2018. The decline in ROA also indicates the impact of the COVID-19 pandemic on Huawei's operations. However, in 2021, Huawei's ROA slightly increased to 0.12.

The return on equity (ROE) is the ratio of after-tax profit to net assets, indicating the degree of profit obtained by the company's equity holders at different holding levels. The overall trend from 2017 to 2020 showed a decreasing trend, with ROE at 0.22, 0.19, 0.15, and 0.13, respectively. This reveals a weak performance in generating returns for creditors and shareholders during these years. However, in 2021, the ROE increased to 0.19.

The present study employs business risk ratio analysis to assess the sensitivity of a company's earnings to its fixed costs and assumed liabilities on its balance sheet. In terms of financial leverage, the overall stability of Huawei exhibits a downward trend from 2018 to 2021, with a significant gap. Notably, the financial leverage data for 2020 is unfavorable, only reaching -0.43, indicating lower investor returns in that year. Additionally, the company's capacity to service its debt is also low; however, the advantage is that the risk is also low.

Financial ratios, such as the interest coverage ratio, are often used to measure a company's leverage and its capacity to service its debt. The interest coverage ratio reflects the degree of profitability guarantee for the repayment of due debts. To sustain normal solvency, the interest coverage ratio should be at least greater than 1. According to the chart, it is apparent that in the past two years (i.e., 2017 and 2020), Huawei encountered the risk of losses, and the safety and stability of debt repayment declined significantly. In contrast, the interest coverage ratio was relatively strong in 2019, reaching 437.28, indicating a robust long-term solvency at that time.

Furthermore, the stability ratio is employed to evaluate the long-term stability of the company and predict its future development. The primary indices used for this purpose are the fixed asset ratio, current assets to fixed assets, and proprietary ratio. Based on the chart, it is evident that these three indices have remained relatively stable over five years. Although there have been minor fluctuations, they imply that Huawei has developed steadily, particularly in terms of assets.

4.2 Impact of Covid-19 on Huawei

The advent of the Covid-19 epidemic has had negative consequences for numerous enterprises, including Huawei. As a result, several Huawei outlets have been forced to close in certain regions, and the offline business of the company has suffered. Analysis suggests that the pandemic outbreak did not have a substantial impact on Huawei by the end of 2019. Consequently, the company's internal operations and marketing strategy have continued as usual. However, Huawei, one of the top five smartphone makers in the world, saw the steepest decline in the first quarter of 2020. Its smartphone sales decreased to 42.5 million units, a decrease of 27.3% year-over-year. Even though this was the first time Huawei's smartphone sales declined, the business retained its position as the second-largest smartphone manufacturer with a 14.2 percent market share. According to Huawei's 2020 annual report, the company's sales revenue increased by 3.8% to RMB 891.4 billion, while its net profit improved by 3.2% to RMB 64.6 billion. Xu (2021) suggests that "Despite the emergence of a new crown plague and Huawei's sanctions, 2020's performance remains in accordance with our forecasts. In addition, the cash flow from operating activities is only 35,2 billion yuan, which is in line with projections due to our large-scale reserve strategy."

Moreover, an examination of the business situation of the entire company reveals that the operating business remained solid, generating sales revenue of 302.6 billion yuan, an increase of 0.2 percent over the previous year. Similarly, the corporate business grew as a result of the industry's digital transformation, earning sales revenue of 100,3 billion yuan, a significant 23 percent increase year-over-year. The consumer company experienced a reduction in mobile phone sales as a result of trade sanctions, but Huawei was able to strategically upgrade its portfolio by extending its position in PCs, tablets, smart wearables, smart displays,

and other comprehensive smart life services. As a result, consumer business income climbed by 65 percent, and this is where Huawei will concentrate its future commercial efforts.

Overall, the corporation generated 428.9 billion yuan in sales revenue, an increase of 3.3% year-over-year. Additionally, Huawei increased its investment in R&D to overcome the obstacles created by the restrictions and ensure sustainable development. Research and development costs were 141.89 billion yuan per year, or 15.9 percent of sales revenue. In 2020, Huawei altered their marketing strategy significantly in an effort to reduce the price of mobile phones. This effort reduced sales costs from 63,3 percent in 2020 to 51.7 percent in 2021. As a result, Huawei's predicted profit for 2021 is anticipated to reach 113.7 billion yuan, a significant increase over previous years. It is essential to note, however, that this profit forecast includes a net income of 57.431 billion yuan from subsidiaries and enterprises, particularly the sale of the Honor mobile phone business. Huawei's actual profit in 2021 is only 56.27 billion yuan if this share of sales revenue is excluded. This suggests that Huawei's revenues and profitability declined in 2021.

4.3 Other Factors Affecting Huawei

Between 2017 and 2020, Huawei witnessed a consistent upward trend in both its revenue and profits. However, the United States' intensified restrictions on the company in 2020 had a significant impact on its operations. In 2021, Huawei's overall revenue witnessed a decline of 28.6%. Although Huawei's 2021 annual report portrays a significant profit of 113.7 billion yuan, it includes the net income of 57.431 billion yuan from subsidiaries and businesses, particularly the sale of the Honor mobile phone business. Excluding this part of the sale proceeds, Huawei's actual profit in 2021 is substantially lower, standing at 56.27 billion yuan.

Huawei identified three reasons for the decline in revenue: first, the company has been under persistent pressure on supply continuity for the past three years; second, the operator business is closely tied to the global 5G construction cycle, which experienced some pressure. It is evident that the United States' suppression and blockade of Huawei's supply chain is the main cause of the decline in Huawei's revenue and profits.

In 2021, Huawei's consumer business revenue experienced a significant decline of 49.6% YoY. The company's mobile phone shipments also dropped by 81.6% from 2020, with only 35 million units shipped As a result, Huawei's global market share declined from 15% in 2020 to 2021, causing the company to fall out of the top five mobile phone manufacturers. This marks a sharp contrast to Huawei's earlier competition with American Apple mobile phones in the global market. Additionally, Huawei's carrier business revenue decreased by 7.0%, while only its enterprise business revenue increased by 2.1%. A breakdown of Huawei's global sub-regional revenue indicates that China decreased by 30.9%, Europe, the Middle East, and Africa decreased by 27.3%, Asia-Pacific decreased by 16.7%, and the Americas decreased by 26.3%. Thus, the US ban on Huawei in 2020 had significant negative consequences for the company.

5. Conclusion and Contribution

The COVID-19 pandemic has presented significant challenges for Huawei, resulting in a 29% decline in revenue in 2021 compared to 2020. This decline has posed a significant obstacle for the company, which has struggled to maintain its sales and development plans amidst the pandemic. Huawei's response to the pandemic has included increasing R&D investment, reducing product costs, and selling its subsidiary. However, these strategies were not initially part of the company's planned approach, and the impact of political factors on Huawei has been unpredictable.

Financial analysis reveals that Huawei's overall situation in 2021 is still optimistic, and many ratios show a good trend such as cost of goods sold to sales ratio (this is a better situation compared to previous years); higher operating profit, higher net income. Despite several ratios illustrate the worse trend such as proportion of research and development expenses to revenue (22.40 % of sales, increased from previous years due to the drop of sales), increased ratio of total operating expenses to revenue (37.76 % of sales in 2021, higher than previous year). Specifically, Huawei's financial leverage has exhibited a downward trend, highlighting the company's weak performance in generating returns for its creditors and shareholders. Additionally, the company's interest coverage multiples have decreased, indicating that its debt repayment

security and stability have declined in 2020 and 2021. Over the long term, Huawei's debt burden appears to be increasing, which may deter investors from investing in the company. While these ratios reflect the short-term health of the company, investors should also consider its long-term health status and overall anti-risk ability before making investment decisions. Therefore, it is important for investors to comprehensively evaluate the company's prospects before investing in Huawei.

The analysis presented in this study sheds light on the financial challenges and strategies employed by Huawei during the COVID-19 pandemic and the United States' sanctions. This research contributes to the existing literature on the impact of external political factors on the financial performance of multinational corporations. By analyzing Huawei's financial ratios, this study shows the negative impact of the pandemic and sanctions on the company's revenue, profit, and debt repayment security. Additionally, this study reveals Huawei's short-term vulnerability and financial leverage, which may help investors make informed decisions about investing in the company. Overall, this research provides valuable insights for scholars, practitioners, and investors interested in understanding the financial challenges and strategies of multinational corporations in the face of external political factors.

In addition to the contribution of this study, several limitations should be considered. Firstly, the study's focus on a single case study may limit the generalizability of the findings to other leading companies in the same industry. While we acknowledge this limitation, we chose to focus on Huawei as it is the fastest-growing company that remained stable in a challenging situation. Secondly, the financial analysis only covers the period from 2017 to 2021, which is a relatively short period in the fast-changing technology industry. The findings and interpretations presented in this study are specific to this time frame and may not be applicable to future periods. Another limitation of this study is the narrow scope of financial ratios analyzed. Future research could expand upon this by including additional financial ratios or other types of analysis to yield a deeper understanding of Huawei's financial performance. Additionally, a comparative study with other leading companies in the same industry could be conducted to provide a broader perspective on Huawei's financial health and position within the industry.

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