COVID-19 and Corporate Finance Resilience

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Abstract

The COVID-19 pandemic had significant global negative effects and posed significant challenges to corporate financial management. Firms that were more adaptable and robust achieved superior financial performance, underscoring the importance of resilience in corporate finance. Financial reserves, including cash holdings, played a substantial role in financial resilience serving as a buffer against negative external and internal shocks. Flexible investments and financing were another source of stability, enabling a quicker response to a rapidly changing environment. Furthermore, the accelerated pace of digitalization and the application of sustainable development principles also aided firms in navigating the crisis period more effectively. Overall, greater corporate financial resilience is essential for the successful long-term development of the company.

Keywords: COVID-19, firm resilience, financial management

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Introduction

The COVID-19 pandemic triggered a global economic crisis with almost every country in the world registering an economic downturn[1]. Virtually all companies' finances were affected. There has been a deterioration in liquidity, a reduction in investments, ongoing losses and financing problems. The pandemic has also created long-term negative impact on debt levels and solvency. In such an unstable environment, the resilience of companies has become key to achieving sound financial performance. Resilience can be defined as a firm's ability to continuously recover from and adapt to exogenous shocks and endogenous pressures (Roundy, Brockman, Bradshaw, 2017). To strengthen their resilience, companies can increase the reserves they maintain, speed up their reactions and decision making, and take into account more information about changes in the environment.

1. Financial effects of COVID-19

COVID-19 negatively impacted corporate finance, with issues in the following directions (Rafailov, 2021):

1) Significant reduction in cash and liquidity crisis. Liquidity problems are due to several factors. First, as a result of the imposed anti-epidemic restrictions, many businesses were closed or were not working at full capacity, which reduced revenues. Second, customers sharply reduced consumption in an effort to increase savings to meet the future negative effects of the pandemic. Third, the crisis worsened the solvency of customers, which reduced receivables collection. Fourth, supply chain disruptions led to lost sales and penalties. Fifth, firms could not immediately reduce their operating costs and some of them (e.g. for transport) even increased.

The liquidity crisis has led to the phenomenon “dash for cash” – the rush to secure substantial cash in a very short period of time. The main source of “quick” liquidity were bank and bond loans, which have increased significantly. However, the demand for debt financing clashed with shrinking bank lending due to declining creditworthiness of firms. In such a situation of

[1] According to a World Bank’s report in 2020 GDP declined in more than 90% of countries in the world (World Bank, 2022).

increasing liquidity needs, if firms did not secure funding quickly, they went bankrupt, even if they had profitable businesses.

The liquidity crisis would have led to the insolvency of a significant number of companies and large sectors of the real economy, which necessitated significant support by the state. State interventions were mainly aimed at providing liquidity support, including by deferring or forgiving taxes for a certain period, facilitating debt repayment through a temporary moratorium, restructuring, refinancing or rescheduling loans, providing guarantees for new loans, reimbursing certain operating costs, providing grants, etc. Indirect support for firms was also provided by the expansionary monetary policy of central banks.

2) Deteriorating financial results. Many companies experienced lower financial performance and profitability caused by lower revenues and increased costs. In the first four months of the pandemic (March to June 2020), 84% of companies globally experienced a fall in sales, with an average 51% decline compared to the previous year (World Bank, 2022). The pandemic has also led to an increase in operating costs. Due to problems with supply chains, prices of some raw materials and supplies (especially those transported from remote locations) have risen. Interest costs also rose. Shrinking revenues and rising costs logically led to a decline in corporate profits. For firms in the leading economies, the reduction in earnings before interest, taxes, depreciation and amortization (EBITDA) is 1.6% in 2020 relative to 2019 (OECD, 2021).

3) Deterioration in the firms' creditworthiness. This is mainly due to reduced revenues and cash inflows, which impair the ability of firms to service their debt payments For example, in advanced economies levels of interest coverage ratios declined by 2.4% in 2020 relative to the previous year (OECD 2021).

4) Decline in investment activity. In an attempt to solve their liquidity problems, companies reduced their cash outflows, including investment spending. Although reduced capital expenditures limited their future growth, survival was a priority for firms. In the EU in 2020, the overall reduction in capital expenditure was 6.6% (Eurostat, 2021).

5) Increased leverage of firms. The higher share of debt in the capital structure is due to two factors. First, the additional borrowing that firms use to maintain their liquidity. Second, the decline in the value of equity capital caused by lower expected profits. Firms in the leading economies increased their liabilities by 7.7% on average in 2020 compared to the previous year (OECD 2021).

In times of crisis and instability only resilient companies survive and prosper. Such companies can recover from negative shocks and adapt to the changed environment. From this perspective, one of the strategic goals of the firm becomes maintaining stability through greater resilience.

2. Cash holdings as a source of resilience

Maintaining reserve financial resources is a key factor for increasing the resilience of firms. A higher level of cash holdings serves as a buffer that covers losses from negative environmental impacts and allows firms to continue operations without interruptions. In addition, firms more easily make necessary changes because they have reserve funds to finance the costs of change (Singh, 1986; Sharfman et al. 1988). Extra cash allows firms to respond more quickly to the changing conditions (Cheng, Kesner, 1997). The reason is that they can take the greater risks that are associated with rapid response.

In times of crisis, free financial resources enhance resilience by increasing the competitiveness of firms. Firms that have more reserve funds can pursue more aggressive strategies to displace competitors - e.g., through lower prices, more favorable credit terms, better service, etc. (Bolton, Scharfstein, 1990; Fresard, 2010). Moreover, cash holdings enable the acquisition of strategic assets at low prices, which brings significant competitive advantages in the long run (Chiu, Liaw, 2009).

During a crisis when access to external finance is limited, cash increase the greater flexibility in financing and investment decisions. Financial reserves allow to overcome the situation of capital rationing where external financing of new investments is limited (Stiglitz, Weiss, 1981; Holmström, Tirole, 1998). In such conditions, the firm will be able to make its profitable investments even in period of financial market turbulences. The accumulated reserve funds allow to avoid the use of costly external capital and to finance investments mainly with cheaper internal sources (Myers 1984; Myers, Majluf, 1984). Increased cash holdings increase liquidity and reduce credit risk, leading to a greater ability to borrow when needed. This is especially true for short-term loans, where current cash inflows and cash balances matter to lenders (Harford, Klasa, & Maxwell, 2014).

Maintaining more cash increases firms' resilience, but can have a negative impact on corporate finances. Reserve cash holdings create opportunity costs as firms lose the potential income from alternative investments of the funds. Larger cash balances increase opportunity costs and could harm the firm value.

Cash amplifies conflicts of interest and associated agency costs (Jensen, Meckling, 1976; Jensen, 1986; Stulz, 1990). With limited shareholder control, managers will use free cash inefficiently to their advantage and to the detriment of owners. The possible financial mismanagement is in several directions. First, surplus financial resources may reduce managers' propensity to innovate because reserves allow the company to cover losses from its lag behind innovative competitors for a certain period of time. Second, reserves allow managers to make more investments that are simpler and with minimal risk, even though they are not the most profitable (Clayton, Gambill, & Harned, 1999). Third, the buffering effect of cash encourages risk-taking and irresponsible managers' behaviour and increases the likelihood of strategic mistakes and long-term losses (Lin, Cheng, Liu, 2009).

During the COVID-19 pandemic, resilience achieved by maintaining larger cash holdings had a positive impact on company performance. In such crisis conditions, the positive effects were significant. High environmental instability and significant negative shocks make reserve resources an important factor for firm survival and progress. Companies with higher cash reserves are able to significantly offset losses from supply chain disruptions, volatile resource costs and product prices, significant changes in business processes when anti-epidemic measures are introduced, etc., and thus will perform better than companies that do not maintain reserves. In pandemic the business environment changes significantly and require quick adaptation from firms. Companies with more financial resources adapt more quickly to the new "normal" by investing in the digitalization of business processes, the introduction and expansion of remote working, and the change of the suppliers and markets. Such firms also benefit from the lower cost of financing. The pandemic restricted access to external financing and increased its cost. Companies with more internal financial reserves will use fewer external funds, which are more expensive.

The availability of extra cash crisis also gave significant advantages over competitors in the times of COVID. Those firms that hadn't had a protective cash buffer were very vulnerable and easily squeezed out of markets by cash rich companies, which were able to offer lower prices, faster delivery and/or higher quality to customers as well as better terms to their suppliers.

As well as being a danger, the pandemic also created strategic opportunities for achieving long-term growth. Companies with accumulated surplus cash continued to invest in innovation, business development and the purchase of strategic assets, while firms that have minimized their reserve resources basically struggled to survive the crisis. As a result, more resilient companies performed perform better in the long run.

The negative effects of extra cash holdings during the pandemic were much smaller relative to the significant advantages discussed above. They come from the agency costs of inefficient managerial decisions and expected to be low during the crisis. First, the crisis has disciplinary effect to managers, since poor managerial decisions increase the probability of firm bankruptcy and loss

of their positions and reputations. Second, the pandemic reinforces shareholder control. The reason for stronger control is that when the profits are low, the losses from inefficient managerial decisions are much more visible and the negative reaction of shareholders will be much stronger. Third, during a crisis, the role of external stakeholders, such as creditors, customers, and suppliers, becomes stronger because the resources they provide to the firm become more limited and more valuable. Thus, managers will have to be more responsive to the stakeholders' interests and will be more restricted to misuse the available cash holdings.

In general, resilient companies that maintain larger cash holdings had better financial performance during the pandemic. This conclusion is supported by the various empirical studies. Firms that are negatively affected by the pandemic are found to increase their cash to counter the crisis (He et al., 2022). The crisis had negative impact on investments, but firms with more cash were less affected and invested more (Tawiah, O'Connor Keefe, 2023). During the pandemic, firms with more cash holdings had higher profitability, higher growth, and pay higher dividends compared to firms with less cash (Jabbouri, Almustafa, 2021; Zheng, 2022).

To achieve greater resilience and better financial performance, firms need to increase their available and potential cash holdings. To do this, companies need to have extra cash over industry's usual levels. It is also necessary to maintain higher liquidity ratios and reduce the proportion of less liquid inventories and receivables. In order to reduce opportunity costs, the firm must have active cash management, with surplus cash being invested in money market instruments. An important source of liquidity is also the easy access to additional financing, including through negotiating overdrafts, lines of credit and various forms of trade finance.

3. Resilience through sustainability

Sustainable development is an important aspect of modern financial management, which has also been a source of financial resilience during the COVID pandemic. The results of various studies showed that firms with more environmental, social and governance (ESG) activities had better financial performance during the crisis. Such companies had better stock returns (Albuquerque et al., 2020; Qiu et al., 2021; Xu et al., 2023). Furthermore, sustainability contributes to higher sales, profitability and corporate valuations (Yahya, 2023; Poursoleyman et al., 2023).

The increased resilience of more sustainable companies comes from several directions. First, companies' ESG policies improve their product differentiation (Albuquerque, Koskinen, Zhang, 2019). Customers of such firms are more loyal, which creates more stable demand for their products with lower price elasticities and larger profit margins. Thus, during the COVID-19 pandemic, their sales and profits will not decline much and they will have better financial performance. Socially responsible companies motivate their employees better which increases their productivity (Budhiraja, Yadav, 2020). This effect was stronger during the pandemic crisis when responsible companies tried not to cut jobs and protect their workers. Similarly, sustainable companies better consider the interests of suppliers. This have positive financial results in a crisis because suppliers will be more loyal and ensure supply chain continuity. Another positive effect of sustainable activities is the attraction of more loyal investors (Renneboog, Ter Horst, Zhang, 2011). Investors who buy ESG stocks seek longer-term returns and are more willing to accept short-term shocks in the stock prices. During the pandemic and falling financial markets such investors do not sell their stocks, leading to higher valuations of companies with better ESG ratings. In general, the partners of more socially responsible firms do not react as negatively when temporary problems arise in their relationships and are more willing to help resolve such problems.

Companies with more sustainable business have greater legitimacy with different stakeholders because they better conform to socially accepted norms and values. Thus, they more easily attract different stakeholders to their activities and obtain their resources for lower costs (Suchman, 1995). Legitimacy is particularly useful during a pandemic when many economic subjects seek to avoid risks and severely restrict the supply of their resources. Firms that have better

ESG performance more easily attract and retain customers, employees, suppliers, investors, and other stakeholders. Hence, they make more sales, reduce their costs, attract cheaper financing and have better financial performance.

Resilience is a prerequisite for resolving the problem of information asymmetry. Investing in ESG activities improves the reputation of the company, which is a positive signal to external stakeholders (Fombrun, Shanley, 1990). During the COVID-19 pandemic, a good reputation provides a better access to external capital, which ensures the normal functioning of the business. Moreover, firms with higher reputation have higher demand for their products amid a general contraction in consumption. The firm value also increases from the social capital and stakeholder trust during the crisis (Lins, Servaes, Tamayo, 2017). The signaling effect of following sustainable practices has great value through pandemic when volatility and uncertainty of the environment are high.

Socially responsible companies are more innovative, which helps them survive and perform better during the pandemic crisis (Huang, Chen, Nguyen, 2020). This is due to better access to external resources and contacts with stakeholders, as well as more motivated and engaged employees. Good and lasting relationships with external stakeholders provides companies with more information, knowledge and ideas that improves their innovation activity.

The positive effect of company resilience is amplified when it is combined with larger cash holdings. Shares of companies with bigger cash balances prior to COVID-19, and with high ESG scores, have higher returns during the pandemic (Cardillo, Bendinelli, Torluccio, 2023). In practice, resilience is an additional buffer that, together with cash, absorbs losses from negative environmental changes. The importance of firm resilience during the pandemic is supported by the observation that COVID-19 leads to an increase in social and environmental performance indicators (Yahya, 2023).

Given that corporate resilience increases resilience to crises, effective management requires increasing ESG investments. Environmental investments should prioritize carbon neutrality, including the use of renewable energy, resources harvested with minimal emissions and waste recycling. Reducing the use of plastics and using more organic components is also essential. Companies should invest in socially responsible activities, including protection the rights of consumers, employees and all others affected by the business; better workforce diversity, support for local communities and social causes. Achieving sustainability needs appropriate corporate governance with greater transparency in decision-making, the inclusion of independent directors, stronger board oversight of executives, linking executive compensation to ESG scores. To maximize the impact of ESG investments, companies should publish periodic reports on the sustainability of their business.

4. Digitalization and resilience

Digital technologies are a major source and tool for innovation for modern companies. At the same time, they can be used by companies towards greater resilience in a crisis environment. The COVID-19 pandemic has led to problems with day-to-day operations and difficulties with attracting external capital. Firms that were more digitalized had more stable finances, and their sales and profits declined less during the crisis (Abidi, Herradi, Sakha, 2022; Copestake, Estefania-Flores, Furceri 2022). Digital financial technologies improved access to finance and reduced its cost, thereby increasing the value of companies (Xia, Qiao, Xie, 2022).

The first and most visible area in which digitalization demonstrated its positive effects was the customer relationship. Due to restrictive measures, many of the physical outlets where sales and customer service take place have been closed. Companies that had online sales systems were able to continue their business as they contacted the clients remotely. Building digital platforms (through websites, mobile apps, social networks, etc.) to attract and serve customers that can be used on a variety of devices (computers, smartphones, and other smart devices) makes companies more

resilient when their physical sales operations are experiencing problems. An increasingly important element of the customer relationships digitalization is artificial intelligence (AI) and the rapidly evolving large language models (LLM) such as GPT-n and PaLM. These AI models enable in-depth analysis of customer sentiment, better customization of offers according to client's needs and preferences (incl. product type, price, terms, etc.), personalized service in natural language by digital assistants, automated contacts in different languages, etc.

The use of digital technologies facilitates and accelerates the sales process and reduces the human and material resources used. Thus, digital sales can stabilize or increase revenue and reduce costs. They also increase firm's resilience through faster response and greater adaptability to changes in markets. Investments in digital distribution channels have long-term effects, as even after the pandemic is over, many customers retain their preference to contact companies and buy online.

The pandemic has also demonstrated the need for digital technology in organizing human resources. Many companies' offices were closed or had limited access, making it very difficult for their employees to carry out their duties. The introduction of remote work (based on collaborative software (groupware), including online communications, document collaboration, videoconferencing, project management, etc., which use cloud technologies) has allowed many employees to continue their activities wherever they are. In this way, companies have been able to serve their customers and not lose sales. Remote work also creates additional value in the long term beyond the pandemic. The value comes from office cost savings, higher employee productivity, and attracting and retaining more talented persons. Remote work has its downsides, such as more difficult coordination and group work, poorer communication and less control over task execution. From this point of view, remote work cannot completely replace office presence, but it will inevitably be implemented by companies to remain competitive (Stropoli, 2021).

Digitalization is a key tool for increasing supply chain resilience. In the pandemic environment, firms have accelerated the adoption of digital technologies to achieve greater stability through faster and more efficient information processing (Herold et al., 2021). The most significant innovations in supply chain management include:

- The application of artificial intelligence (AI). This enables the processing of large volumes of data, including unstructured data (big data), which significantly improves the forecasting of demand for the manufactured product, the planning of resource requirements, their sourcing at optimal prices and the selection of the most suitable suppliers (Toorajipour et al., 2021). Artificial intelligence allows earlier detection of possible supply chain problems, much faster response and consequently minimizing the cost of overcoming them.

- Internet of Things (IoT) deployment. This technology provides detailed, real-time information about the movements and changes of the physical objects used in companies' activities. IoT: enhances supply chain reliability through the use of up-to-date data and easy information sharing; reduces operational costs of procurement; increases the efficiency of resource management and increases flexibility by facilitating the flow of information (Gupta et al., 2021).

- The use of blockchain. Blockchain technologies improve the supply chain by securely and transparently sharing data between different parties, reducing risks and uncertainty (Wamba, Queiroz, 2022). With blockchain the entire process from source inputs to the final product can be traced, thus improving the firm's relationship with its suppliers and customers and increasing its flexibility in an uncertain environment.

In times of crisis, financing is essential to the ability of firms to overcome emerging difficulties. Digital technologies have facilitated access to financial resources and contributed to the greater resilience of firms during the pandemic (Xia, Qiao, Xie, 2022). The use of online communication channels and digital platforms for financial transactions has enabled businesses to make payments and obtain loans and other forms of financing, even during the restrictive anti-pandemic measures.

Digitalization reduces information asymmetry by providing and processing more and up-to-date information about firms seeking finance. The increased quantity and quality of information improves risk assessment and risk treatment, thereby facilitates the access to finance and reducing its cost (Jagtiani, Lemieux, 2019; Berg et al., 2020). In a volatile environment, this positive effect of digital technology allows firms to preserve their external sources of finance.

Digital finance also provides an alternative to the traditional financial system. Due to their more conservative policies, banks and other financial institutions limit their lending in times of instability. Additional funds can be obtained from fintech companies for crowdfunding (e.g. peer-to-peer lending and crowdinvesting), which expands access to finance (Bollaert, Lopez-de-Silanes, Schwienbacher, 2021; Gambacorta et al., 2023) and strengthens firms' resilience. Alternative digital financial platforms offer financing at a lower cost compared to the traditional financial system (de Roure, Pelizzon, Thakor, 2022). Through them, firms can reduce their financial costs during a crisis and thus counter its negative effects on their financial performance.

Overall, digital finance increases the efficiency of the financial system, improves access to finance and lowers its cost, helping to make companies more resilient in times of crisis.

Conclusion

COVID-19 confirmed the importance of resilience to firm’s performance. During the pandemic, companies with more resilient corporate finance had better sales and profitability, as well as higher stock prices and returns. Given the ongoing global instability and crisis processes, increasing corporate resilience is strategic. The main tools for more resiliency are cash holdings, sustainability and digitalization. To better respond to changes in the environment, companies need to maintain higher reserve financial resources, through more cash, greater liquidity and reserve borrowing capacity. Business sustainability also enhances corporate resilience through more investment in environmentally and socially responsible activities. Digitalization makes companies more flexible and improves their adaptability in volatile conditions. Modern digital technologies, such as big data, artificial intelligence, Internet of Things and blockchain, makes corporate financial management better by improving customer relationships, the supply chain and the access to finance.

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