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Dominykas Visockas

Covid 19 pandemijos įtaka finansiniui stabilumui	The impact of the COVID-19 pandemic on financial stability

Master degree student _______________

Supervisor _________________

Doc. Greta Keliuotytė-Staniulėnienė

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INTRODUCTION

As times have shown humanity encounters number of catastrophes in century for example in XX century happened Spanish flue which killed over 17 million people and affected entire countries and economies. In this pandemic many economies suffered unprecedented shortages of workers and implemented quarantine measure which also meant that people were left without benefits as at that time there were no strong social programs to help the suffering. Looking at current day we have similar situation, already in two years there are more than 244 million infected people and almost 5 million dead this shows the effects such large-scale pandemic has on whole planet. Households had to rethink how they operate their finances during current events. Even at pre pandemic times managing finances is a valuable skill which helps to stay independent and safe. This begs the questions and data, how did households manage their finances, how did companies survive lockdowns and what financial players did gain from this event. This kind of research would help to understand which key players need most of support and would also allow to make more in debt analysis of pandemic on personal and corporate levels. As pandemic already affected over 244 million people and even more indirectly this shows that it is world's most important problem and some scientific literature authors call it the new "tiger" for world economies. While looking deeper in the pandemic it is also possible to see positive changes in global economies and new trends that have created new opportunities to many new businesses and people can work remotely and do not get pressure to live in heavily populated cities with overblown housing prices.

Scientific community have covered wide range of topics regarding pandemic, authors like (Tulus Warsito, Lastauskas, Povilas, Ma, Yan, Singh, J, Larue, B., Ungerer, C., Portugal, A., Molinuevo, M., & Rovo, N, Janetius, S. T, Yin, X.-C). have used statistical data to calculate averages which allow to compare current and past pandemics, others used data to make express effects of lockdown measures on household mental health, these specific authors manly use specific measures which were taken, calculate the affects before and after the measure like leverage was used to boost e-commerce. Other peers like (Hagedorn, Marcus, Jinfeng, Iouri, Guercio, D. D., & Reuter and others) cover more technical aspects of financial stability such as diversification, risk models. Mentioned authors use primary sources like government surveys, company reports which allow to create calculations based with factual data. Scientific papers also cover financial stability through overall effects on public using calculations based on financial markets fluctuations. The problem of combination of these two topics is sensitive nature of data related with finances and health records. Health and financial problems at same time lead people with little choices and large sacrifices, such problem is analyzed in this paper.

The object of study. Companies and households' financial stability throughout covid pandemic.

The problem of study. Lack of concreate data on financial stability for households and companies.

The aim of the master thesis. To determine households and companies' financial stability changes during Covid 19.

The objectives of research:

1. Analysis of scientific literature that analyses effects and causes of changes in financial stability on household and companies' levels.
2. Characterization of methods that are used to systemize and analyze findings about household and companies' financial stability during pandemic.
3. Comparison of research findings from household and companies' perspective.

Research methods: Theoretical analysis of the thesis is performed using systematic, comparative method of scientific literature and articles. Practical analyses are conducted by using focus group analysis and comparative methods using available information from commercial and websites and central bank financial statements documents.

Structure of the Master thesis: Literature review begins with other papers that cover financial stability, covid 19 effects on economies and households. Other papers identify tools and strategies to combat current risk and effects that pandemic create. This creates context in which households and companies must operate and allows to answer the identification of scientific literature. Problems that are identified in literature usually are uncertainty, economic slowdown and risk associated with covid. Methodical part creates framework for research and analysis by which the practical part will be conducted. As focus group method was selected this allows to collect valid information about households and financial statements create a way to analyze companies perspective.

1 SCIENTIFIC LITERATURE REVIEW ON FINANCIAL STABILITY DURING PANDEMIC

Peers who are conducting research on economic activities have strong purpose to create their research as material can be key observations that the government, company, or household could use in dealing with major crisis. Literature analysis creates deeper understanding on topic which has already been studied by other institutions. This collaboration between peers leads into deeper understanding of topic and creates further value as less of the same topic or aspect gets researched if it is already cover by others. Knowledge which is passed through this channel reaches from old professors to new freshmen who are trying to figure out first scientific work. (Shah, M. 2012.) Literature created by peers from all over the world helps to highlight importance in financial stability as this concept involves stability form all levels from largest countries like United States and China, to average household who must manage finances to stay afloat and enjoy life. These connections are identified through specific transmission channels as this help to identify how each are affected. (Restoy, F. 2020) Literature which is available usually focuses on specific sectors or transmission channels to create deep dive into specifics which would not be available in general overview.

1.1 Financial stability in literature

Analysis of peer papers on financial stability led to questioning of the meaning of what financial stability is. As financial stability been important for survival and that is why this word been in conversations (Borio, C., Claessens, S., Clement, P., McCauley, R. N., & Shin, H. S. (2020), Global financial stability report: market developments and issues. (2004), Teresienė, Deimantė, Keliuotytė-Staniulėnienė, Greta, & Kanapickienė, Rasa. 2021) for more than decades. But its definition usually warries in few ways. Systematic stability definition, for common people it could be defined by turning savings in to investments and could be used by everyday people. Thirdly for scholars who want to tackle this problem in certain sectors or economies. (Romaniak M.M. 2016). Financial stability term is usually defined as period in which there is little change and overall financial situation remains at the same point of even grows while allocating resources to required fields and managing of risk that could come. Of course, usually there is little to no changes during the times but as time and other papers has shown at times of disasters like 2008 housing crisis almost every component of global economy experiences lack of financial stability. Therefore, financial stability is always part of discussion when dealing with crisis. It is also important to stress that financial stability is extremely broad concept. (Schinasi, G. J. 2004)

Financial stability could be defined in different scales like: Country, financial systems, companies and lastly household level. Financial stability from country wide prospective in literature usually is meant by preventing crises by executing policies directed to mitigate expected risks and ongoing support in case of crisis. The main objective of these polices would be to mitigate country wide volatility which comes with lack of financial stability. (a Legacy, P. 2021) Financial system financial stability usually is defined by extended periods in which there is little to no market volatility, financial markets ability to absorb shock is high and lastly resources are allocated to most efficient financial market participants. (Lawson, J., Barnes, S., & Sollie, M. 2009) Companies understanding of financial stability could be identified by these key points. Sound strategies which are applied to withstand financial turbulence, ability to attract stable and sustainable revenue source and elimination unexpected risk that pose failure. (Vovchenko, N. G., Holina, M. G., Orobinskiy, A. S., & Sichev, R. 2017) Lastly on personal level financial stability is usually understood as ability to sustain or grow income, ability to withstand unexpected risk and turbulence during crisis. (Schinasi, G. J. 2004)

Because of complexity of financial stability and tools to tackle it this task usually falls under governmental bodies. Usually, financial instability causes new debt on financial players who must overcome it but as this problem has been relevant for decades it also could be caused by other factors like debt buildup from other sectors before the crisis. (Virgiliujus Rutkauskas, 2015). Looking from the household perspective we must identity main reasons some people have strong financial cushioning and others have no savings at all. Of course, financial literacy has a strong influence on people's decisions while making purchases and allocation of funds to savings, investing, and lastly spending. On other occasions it comes down to personal emotional state and spending habits which might change on yearly basis as overall people with age grow their skills and earn more but also spend a lot more than they can afford. (Stephanie R Yates. 2019) Strong example of consumer spending on things they might not need could be amplified with maturing E-Commerce markets. These marketplaces create easy and personal experience for spending their funds on things they might be looking for but sometimes things that will be shipped and will stay in the boxes on in attic. Companies that are offering the brokerage for suppliers and consumers have created massive amounts of data that they use to even more expand on emotional and other biases of consumers to optimize their websites. (Tian, L., Vakharia, A. J., Tan, Y., & Xu, Y. 2018) This statement is further solidified with massive expansion of companies on selling side of the business, stock price of companies like Amazon, Ebay and others show that the model is effective and creates even further pressure on households to manage their funds in manner which leaves part of their salaries for savings.

One of the actions that the government could take was taken in 2008 Mortgage Crisis. As many banks in United States had lending problem in housing market. This all came down as global crisis as housing market crashed the same year and this left almost all banks with problems on their credit that was allocated to mortgages. Banks that failed that year were: Washington Mutual Bank, IndyMac, Silver State Bank and a lot more others. These banks were not priority of the government and that is why they did not receive government bailout. Other banks did receive the funds to stay afloat: JPMorgan Chase & Co., Citigroup Inc. Bank of America Corp and others. The bailout amounts go up to twenty-five billion USD for one bank. This shows that crucial measures could be taken at crisis, and this had some effects on the crisis itself, but it did not stop the spill out effect that spread to whole world. This measure raised a lot of questions as this crisis did form because of reckless lending from banks in the first place and banks got bailed out first and other industries were mainly left to fence for them self. Governments responsibility as governing body was overlooked in this example and this led to crisis in first place and shows how even one sector could have collateral damage to whole world. But strong measures also show that government bodies have the control over whole financial system and new regulation help to ensure that same mistakes are not created again. Risk management became one of the key points in current housing lending market. This has lead in to more stable lending and more stable overall financial situation for the future. (Chima, O. R., & Langley, P. 2012). Other examples could be found in Europe. Looking into Croatian government response to current crisis Croatian households even when dealing with higher risk of slowdown and job loss had disposable income because fiscal support aimed to prevent risk mentioned before. (HNB 2021). Central banks play major role in overall financial stability that is why it's important for them to follow Tinbergen's Law. This law states that for policymaker to be able to achieve multiple economic targets policymakers must have at least one of policy tools for each policy targets. One of examples would be Basel III rules adaptation on liquidity as it helps to prevent spread of moderate asset market bubbles. As policymakers, usually are central banks they have the responsibility from last economic crashes to ensure not just inflation rates but also overall economic stability and this leads them in to using other unconventional monetary policies. (Joyce, Michael, David, Andrew, Dimitri, 2012) As discussed central banks and governing bodies must use variety of tools to tackle issues that arise, they have option of monetary policies that if applied for expansionary reasons lead into more net worth of borrowers, that could be companies or other institutions which in return lend money to the rest of economy. This in turn leads into more spending and consumption. Of course, it comes with the risk but this risk could be addressed by financial intermediaries. (Miranda-Agrippino, S., & Rey, H. 2020) Monetary policies could be made by different means:

1. Quantitative Easing.
2. Forward Guidance.
3. Negative Interest Rates.

Quantitative easing is a monetary policy which is used by central banks in purchases of long-term securities in open market to increase the money supply and encourage lending and investment. Therefore, this leads into more funds in economy and lowers interest rates for fixed income securities. (Kapetanios, George, Haroon, Ibrahim, Konstantinos, 2012) Real examples of quantitative easing were shown during 2008 mortgage crisis when Federal bank started buying assets, 2008 -2010 purchases were directed towards bank debts, MBS and treasury notes. This “first phase” stabilized banks, other phase started 2010-2011 when bank purchased both short- and long-term treasury bills. Lastly “third phase” it made clear communication that Fed funds rates will stay at zero until the unemployment percentage will stabilize. Main objectives of this policy were to reach ether 6.5 percent unemployment or rise inflation over 2.5 percent and only when one of these requirements will be achieved it will stop quantitative easing. (Mukherjee, M., & Bhaduri, S. N. 2015)

Forward guidance is a policy that communicates to public about future monetary policies. As a result, this allows people and businesses to make plans for future investments. This leads into stability and confidence in markets. (Hagedorn, Marcus, Jinfeng, Iourii, Kurt, 2019) Good examples of forward guidance could be found in Europe, Sweden, Norway and other mature countries that have clear publishing channels and discuss in detail their decisions. Of course, main contributors to the interest rates still are major financial players like ECB but local players have influence over interest rates too and more information channels leaves public with wider range of forecast that create clear picture on what to expect. (Jakub Rybacki. 2019).

Negative interest rates introduced by central banks also lead commercial banks in to spending and lending more of their deposits. As a result, this makes for more effective markets and leads to growth in economies. (Liñares, José, Magnus.2021) Looking from the negative side there is clear indication that negative interest rates had bad effects on savers and banks with large reserves and now cannot reduce net interest margins. Also, there is catch that households holding their savings suffer from higher-than-expected inflation and cannot use deposits to combat inflation in risk free matter. (Jurkšas, L. 2017) The worst-case example could be seen in countries where people stopped trusting banking systems and start to withdraw all their deposits as price of savings would even add up with inflation leading with no point in saving in financial system this cash drain could lead into problem like liquidity risk.

As a result, policymakers like Central Banks have strong impact on financial stability even with unconventional policies. Main criticism of these policies is if done wrong this could lead into more damage than good. For example, fast overflow of money supply can lead whole economies to inflation as there would be more money in the system but same amount of goods. The inflation stability was one of the main concerns for Central Banks and this could directly contradict its goals. Also, Quantitative easing could lead into to grate expansion of Central Banks balance sheet which as itself is a risk and could lead into high risk and lastly high lending could lead in to purchases of risky assets. (Brigitte Young, 2019)

As mentioned in literature beforehand usually when we talk about financial stability, we take in account massive catastrophes like pandemic or housing market crash in 2008. But looking at the people who get affected by all regulation and financial policies are the people. In schools there are no classes about personal finances but when life starts of post school this skill becomes one of essential in life. As identified in research by Melin Emilsson, even on personal level different sexes could have significant imbalances in experience dealing with their finances. This could lead into lower pension and other problems if person is not financially literate. This affect could be seen in old study participants like a 75,5-year-old person who was financially stable was collage graduate and had worked as executive. This person when talking had a feeling like he is responsible for family finances, and this led into responsibility to deepen financial experience. (Melin Emilsson, 2016). Personal financial decisions do matter on financial stability, but recent studies find that people who had mandatory courses in school about personal finances do not show any better results than the people who did not have the courses. Research on connections of financial literacy and causes for crisis are mixed. This begs the question why people take on access debt and take risky financial decisions. Financial literacy has been always a point in economic crises as its one way to shift responsibility to others. (Cole,Shawn, Anna, Gauri, 2016)

When discussing financial stability, it is important to understand that on personal level. One of the most common ways to define it if person understands financial procedures is to categorize it to financial literacy. Spread of knowledge about finances comes from wide range of sources, central and state governments, financial regulators, financial institutions, educational systems. With high financial literacy comes efficiency in whole market and this leads into financial stability overall. (Upendra Singh, 2014) but definition of financial literacy could be explained in many ways, for example in articles it could be defined as ability to understand and effectively use multiple financial skills like budgeting, investing and financial management to find best and most suitable way to effectively use savings and other current assets. Financial literacy could also be compounded to three aspects: (Skagerlund, Kenny, Thérese, Camilla, Gustav, and Daniel, 2018)

1. Knowledge of inflation.
2. Numeracy.
3. Risk diversification.

One of the main problems that comes from simple saving is the fact that inflations have strong effect on how much person loses of his savings over time just by letting it sit idle. Definitions in literature define it as decline of purchasing power of given currency over time. To tie it with real prices it is good practice and helps to ensure prices are measured and check. This is best expressed in CPI or in other words tied to selected price level to certain basket of goods or services. By expressing this change in percentage, it is easy to find that overtime if there is inflation same amount will purchase less than before. (Boussard 1984) Good example of inflation could be seen in price of milk. In 1913 gallon of milk was priced at 36 cents per gallon but in 2013 same gallon of milk now cost 3.53 USD, also one observation is necessary to understand. Milk production only increased and amount of milk available also increased but the value of money did decrease, and this is prime example of inflation that happens almost every year.

Numeracy may seem like simple mathematical problem solving but this also means that person also must have ability to correctly interpret the numbers calculated. At current times computing power could be considered unlimited and ability to find calculators is easier than ever but the numbers and ratios calculated still must be processed by person who is trying to find correct answers. (Miranda, 2018) Good example of numeracy seen as problem is ability to read financial reporting and ability to collect sufficient data to make stronger decisions while investing. This happened during one which name was “meme stock” surge, when one person made compelling analysis of company which was in his opinion undervalued. This indebt analysis caught attention of large amount of retail investors and this turned out to be long lasting phenomena.

Risk diversification for personal financial stability could be defined as the old saying “don’t put all eggs in one basket”, but of course it is more complex than that. In general diversification could be achieved by mixing variety of investments in personal portfolio. Usually, the more distinct the assets are and the less connection there in between assets the less collateral damage it would make if one asset would fail. (Uchiyama, Yusuke, Takanori, Kei, 2019) Other good example of diversification is investing in foreign securities or stocks of companies that do not operate in main portfolio areas, investment in different kind of investments overall also help to ensure that failure of one sector does not mean whole portfolio loss. For smaller households also popular option is mutual funds as they provide single investment streams with diverse share in large amount of stocks. (Guercio, D. D., & Reuter, J. 2014)

Overall, all named aspects make strong impact to financial literacy. By understanding inflation, using calculations with knowledge what it shows and lasty investing in responsible and diverse assets leads into low risk of whole savings losing value and it boost overall economy in which most effective companies get most financing. (Skagerlund, Kenny, Thérese, Camilla, Gustav, and Daniel, 2018) If there is lack of investment opportunities ether ineffective companies get financing or investors lose trust in finance markets and overall start saving in passive way by hording cash and this creates no value to the economy and almost every player in economy loses. Therefore, financial stability must be evaluated from household perspective as it has influence at every economic level. Financial stability itself from household perspective should be considered a mix of understanding how to manage income, managing ways to combat inflation usually by investing in financial markets or commodities like gold and lastly by having understanding itself about finances and how it can make a difference between having cushioning and not having it at all.

Other major player in financial stability is companies and corporations which provide goods and services to households. One of the main factors that could lead into financial instability is unexpected loss events. These events could happen in any area of the company and could lead in capital shortages which lead into further disruptions. One of the common ways to solve this shortage is capital injections which help to stabilize company activity and bring back state that in which it was before loss. Usually, actions that could be taken there are two approaches: (Maria, Joanna, Monika, Anna, 2016)

1. Active approach.
2. Passive approach.

Active approach usually transfers risk to certain resources like existing reserves or insurance companies which could cover the need on the spot. In this example company will have less demand on new capital as it covers the losses on its own. And as borrowed capital might have large interest rate. (Belinskaja, Larisa, Veličkienė, Margarita. 2015) Also active approach requires specialist that know what they are doing as keeping reserves means keeping inactive hard cash which could be used, and this must be done with clear plan. When discussing reserves, the clear example could be identified in commercial banks as they must have minimal reserves to be able to payout any of their clients' requests. ECB minimal reserve requirements until 2012 January was 2 %, now the ratio is 1 %. Some banks in Euro zone do not even have reserve requirements like Sweden.

Passive approach means that company does not create reserves or other ways to cover for losses and restorations of activities to business as usual and this leads companies in need of external capital which is also harder to get because of disruptions that occurred in first place. (Maria, Joanna, Monika, Anna, 2016)

During crises there is also risk of shocks in the systems which might affect financial stability even in other continents. This raises the question if international funding dependency on international sources strongly increases risk of the financial shock transfer and is it a financial shock absorber or source. The research finds that banks with more international borrowing usually cuts down on lending in crisis times. This shows that banks which operate domestically do have better resilience to shock but also have high risk if they borrow from single supplier which also has great impact on how stable the bank can be in crisis. (Ongena, Steven, José-Luis, Neeltje, 2015) Again example of spill over shock has been seen with mortgage crisis which effected not only United States banks but the whole banking system as a whole and this led into global economic meltdown. Another key component of collateral show is seen with globalization and international companies which are affected by every market they operate in, companies like Amazon which mainly operates in United States but also has infrastructure in every inhabited continent. This shows that effects on main market, United states will transfer over to other regions.

Finding in literate about financial stability in companies shows that companies have wide range of risks to consider while operating in stable manner as even failures in one sector could lead into collateral damage to a whole system. One article on China problem with power blackouts sheds a light on problem which might be closer than ever before to Europe as prices of power are soaring. This review shows that even developed superpower like China experience power outages and this might lead into collateral damage in whole China's economy as almost every sector requires stable source of power to do its activities. (Yu, Qun, Na Cao, Qilin Liu, Yuqing Qu, and Yumin Zhang, 2020) Same problem could be seen in logistics required to ship goods from Asia to other continents as ports are experiencing large setbacks and lack of labor to operate their ports at full capacity. This strain on supply leads to price rise and overstocking when goods are available. One of the items affected by overstocking is semiconductors which are used in almost every product that require computing power from automobiles to smart phones. Z score model takes a deeper look into specific variables which were selected by observing other failing companies ()

As companies must consider a lot of variables like creating revenue sources, maintenance of working staff, countless legal responsibilities this shows that creating financial stability with sound plan and ways of measuring is almost impossible. One of such measures is z-score and distance to default measures. These measures help to create system wide evaluation of stability in company. These measures are effective at creating a score by which companies can act and understand if sustainability is achieved. (Altman, E. I. 2013) These measures have disadvantages as they do not consider other players like competitors into consideration as mentioned before few failures in same sector can lead to meltdown of the whole sector as it was seen in housing and banking sectors.

When talking about financial stability in global level in literature there mentions of global financial safety net (GFSN). This safety net has three main objectives, providing precautionary insurance against a crisis, supply of liquidity when crisis hits a country and lasty, incentives key financial players in global economy to use sound macroeconomic policies. (Sohn, Jeong-ae Choi, 2016) As this safety net is global it has a wide range of ways to help to sustain stable financial economy. Mainly there four ways to classify actions that could be taken by this net:

1. Self-insurance against external shocks.
2. Swap lines.

3. Regional Financing Arrangements.
4. IMF global financial backstop.

Self-insurance could be ensured by using foreign reserves or fiscal space at national level. As in some points crisis could lead into downward spiral. Usually, this method is used for countries that have their own currency and it starts losing its value rapidly or loses whole value. One of most studied and largest foreign reserves holder is China (Zhang, Zhichao, Frankie, Li Xie, 2012)

Swap lines could be concluded bilaterally among countries. Swap lines are usually also connected with countries' currencies and helps to maintain liquidity among central banks which in turn help commercial banks to sustain reserve requirements. (Medhora, Rohinton P, 2017)

Regional Financing Arrangements usually are made between group of countries which pledge to lend support to countries experiencing financial difficulties and, in this way, preventing economic meltdown of their regional economies. (ECB, IRC 2018)

International monetary fund global financial backstop usually is last resort to support failing economies with liquidity crisis. (David Pilla, 2020) If member of GFSN experiences shortages in crucial part of economy that member can rely on backstop which acts as short-term lending scheme to fill in the shortage for additional interest rate.

This information leads us to other point, are the reserves useful as some those counties that act in self-interest may be the problem and cause of some economic downfalls like United states banks during mortgage crisis. In current situation there are signs that smaller developing economies use developed economies willingness to maintain economic stability to their advantage. For example, large foreign currency liquidity helped to manage domestic impacts in those countries which require financial assistance during domestic crisis. (Fernández-Arias, Eduardo, Eduardo, 2012)

Financial stability in literature usually is covered by three main players, governing bodies, households, companies. Governing bodies have task to maintain stable inflation, strong predictions to future to ensure investors and setting standards for credit cost financial market. As this task is complex and takes best financial specialist it is usually done by central banks. Also, by introducing regulation on financial players governing bodies prevent past mistakes like financial meltdown of 2008 year. Households on the other hand have responsibility to use the available resources to further deepen financial literacy and understanding of financial markets to ensure stable finances. Overall literature is split on research if financial literature has big impact on overall crisis, it does when crisis happens but overall, financially literate people seem to be doing better with their accumulated wealth as they take less risky debt. Lastly when talking about corporation financial stability there are many ways to deal with this problem. From articles we can identify if company takes actions to mitigate this risk it is called active approach and if company has no plan for future cash flow disruptions it is called passive plan. All parties involved in this process are important in creating financial stability in economies.

1.2 Pandemic effects, tools and strategies to overcome the crisis

Pandemics are part of human history almost if homo sapience exist, the more people connect, the more people are close they are, and this is one of the main requirements for deadly and fast spreading pandemics. One of the most famous and most deadly plague that hit the world was the “black death”. As this plague caused around 30-60 percent of whole European continent population and only happening from 1347-1353 years. This means in less than 7 years this pandemic reshaped whole continent and its future forever. Not only this happened once but it is also suggested that plague also traveled to Asia and settled in China causing third wave of pandemic. It is hard to imagen how around 40 percent reduction in population would affect current situation in Europe and how fast it would spread with current population density and ability to travel (Spyrou, Maria A, et al, 2016). As mentioned in financial stability in literature households are directly connected not only with their financial stability but to whole economy stability.

One of the first truly global pandemics happened in 1918 it was first mentioned in Spanish newspapers that is why it got the name “Spanish flue”, as this pandemic happened in era when there were no significant governing bodies which would be dealing in global problems like pandemics this pandemic was super effective at spreading and causing massive damages to almost every country. In comparison the world war one caused only 9 million deaths and had devastating effects on male population and work force for waring countries and this pandemic killed around 20-50 million people. As the war was ended the same year populations were exhausted and more likely to get infected. The medications and food were scarce. The fact that soldiers that were in front also went home already containing this virus, even when virus itself does not cause death but it makes complications common which kill person. It is estimated that around 2 percent of people who got sick died. One of most devastating facts was that victims to pandemic were usually at their 15-40 and this meant that world was losing main economic contributors which lead into economic downfalls. (Tulus Warsito, 2020) Other fact did emerge from this pandemic, clear indication shows that people living in dense urban areas got hit harder as they live in close courted to each other. Pollution was also identified as contributing factor do people’s ability to recover and overall surviving this flue. (Efron, Nathan, Suzanne, 2020)

Pandemics even could be found in paintings like “sleep” 1923 Walter Ufer famous painting. It depicts suffering native American people. Influenza pandemic affected more than 100 million people and overall killed 20-50 million people. As much as 5 precent of Navajo nation people died of this pandemic. (Kryger, 2020)

After 100 years we encountered another pandemic but on global scale and under global attention. First infection was reported in Huanan Seafood Market which is in Wuhan state, China, 2019 December. As this virus had pneumonia symptoms and could spread in alarming rates, that is why it became focus of global society. Virus shown that it can spread from person to person it became clear that in few moths it will spread to whole world, first in other Asian countries and later to Europe and other continents. (Sheervalilou, Roghayeh, 2020) One of the first guidelines for people who got sick was to do isolation and only after two negative test results people could be free of Covid 19. Almost at the same time governments started using contact tracing as a mean to follow the virus spread and it was quite effective in certain countries like South Korea. (Kapa, Suraj, 2020) Also in general there were new guidelines on how to lower the risk on personal level like:

1. Wearing of mask, gowns, eye proception, gloves.
2. Social distancing.
3. Contact tracing.
4. Phone applications and barcodes.
5. Lockdown.

When talking about gear that could be used, masks became new norm and, in many cases, indoors became mandatory as this solution shown that it is not as effective as washing your hands, but it is measure that could be taken passively at any time, that is why it became new norm (Stone, Teresa, 2020) Currently almost all indoor places in Lithuania require even vaccinated persons to use protective medical mask but there is growing minority of people who still do not follow this mandate and still course unrest in public places.

Social distancing is one of the solutions to situation when there are no medications or vaccines available. As many studies have shown Influenza virus usually spreads through close contacts. As social distancing increases physical distance between people this leads into lower chance of person-to-person transmission. This mitigation action was also implied in previous pandemic and sown strong results. (Fong, Min W, 2020)

Contact tracing became more accessible as smartphones and their apps became almost inseparable with people. This method allowed governments to find people who potentially might have the virus and are unaware. This comes with high risk for people’s private information, as this may lead to information leaking, information missent and overall distrust in government. (Kapa, Suraj, 2020)

Phone apps like “galimybių pasas” became almost mandatory as every major supermarket, shopping center or even caffes require people to show their vaccination passport to be able to use public space to their desire. Vaccination app is required for people over 16 and people under this age can use their identification document to the allowed into indoor public spaces. As this requires inspection technology that allows fast checking of validity of passports became barcodes which with single scan can confirm data. (Eriksonas, L. 2021)

As one of last resorts countries might consider lockdowns on its people and companies. This measure in literature is usually overlooked as it is rare to see whole countries locking down the whole flow of its people because of threat. This measure is one of the most effective ways to slow down spread of virus, but it has devastating effects on whole economy. As this measure also stops people's ability to do activities outside their home peoples mental health became new problem for governments (Lastauskas, 2021)

As pandemics mentions before corona virus has already made big effect on overall population of people and their abilities to go business as usual. One of the main focuses in literature is on deaths caused by this pandemic and how much people are already affected directly, as technology is quite advanced from other pandemics accurate data is available on search in internet. This gave opportunity to people to focus on other countries ability to cope with this pandemic, countries that started testing early and had aggressive testing measures seem to have lower mortality rates, but it still leads with horrific statistic. (Dhillon, Paraminder, 2020) One of the main ways pandemic level crises are tackled are by finding most effective ways to combat it. After first major red flags at the begging of SARS-CoV-2 scientist started developing medication to slow and even prevent spread of Covid 19 by using vaccinations. Vaccination became one of main weapons against pandemics after it shown unquestionable effectiveness in curing polio disease. As this disease effects kids in their early years and cause from mild symptoms collapse of lungs or even death. One of the most iconic parts of this catastrophe could be painted by "iron lungs". This disaster lead into creation of many solutions including the one that is being used as main containment measure – vaccines. (Baicus, Anda, 2012)

As identified earlier SARS-CoV-2 vaccines were seen as a tool that will stop the spread of this disease but as identified in other literature there is high hesitancy in global population regarding this vaccine. Early studies show that in December of 2020 from 32,1 to 38,1 percent of Americans were sure that they would not get the vaccine on their own will. (Nguyen, Kimberly H, 2020) As data from literature is outdated do to fast roll out of vaccines current numbers show strong improvement in vaccinated population.

1.3 Effects of Covid 19 on economies

One of the most drastic and unexpected outcomes of Covid 19 was the lockdown of all non-essential businesses as this meant that only few companies were able to provide basic needs for people during the lockdowns. For example, policy makers in United States defined essential companies as: supermarkets, grocery stores, pharmacies, garbage collection, healthcare providers and banks. As only defying essentials is quite objective this was done by feedback mechanisms, this leads to most accurate picture of people's needs. (Storr, Virgil, 2021) This automatically leads in to even more questions as even simple creation of rubber gloves could take more than one company as it needs products, labor, packaging, logistics. This shows that even one action taken by government could lead into long term collateral damage to whole economy and as the fact that those strict measures are not that commonly used so these leads policy makers with little historic data on this subject. (Lastauskas, 2021) Other papers like Shehzad, K., Xiaoxing, L., Bilgili, F., & Koçak, E. (2021) have shown that areas that are relying on tourism, traveling agencies, hotels and airlines had the hardest hits to their customer base as those companies rely on free travelling and tight spaces to process its customers, this has direct spill over affect as countries like Greece, Spain, France heavily benefited from these sectors and now they are burden as they employ large amount of population. Other countries like China also have suffered as its GDP had felt by 4 precent. This shows that economic consequences of pandemic have direct effect on countries GDP, and it does not matter if country is exporter of importer of goods or services. One of the anomalies that was seen during the first lockdown was related with cure oil as its price became negative on April 20, 2020. In short run this crash became one of the most significant crashes in markets but over time the price of oil normalized and currently it is on rise as there is shortage of energy supply during winter. Mentioned sectors have a wide range of effects on households and the companies as these covers travel expenses and overall ability to spend available funds. (Shehzad, K., Xiaoxing, L., Bilgili, F., & Koçak, E. 2021)

One way to visualize countries response to pandemic is creation of COVID-19 Stringency Index. This index helps to understand how vast the measures are taken to curve the pandemic. Low index percentage indicates not strict measures and high percentage shows actions like lockdowns and closure of non-essential businesses. (Ma, Yan, 2021) Examples of strict policies that could be enforced by governments could be such like: school closures, travel bans, mandatory isolation terms. Looking from Europe perspective Germany and Greece had one of the highest indexes from the whole continent. One of the most lenient responses from governments were seen in Belarus and Sweden where in comparison with the strictest responses there was amplitude of index is from 19.44 to 84.26. This means that countries with more restrictions automatically had to suffer more economic turbulence do to the fact that businesses could not operate during the lockdowns, restrictions on personal freedoms created barriers from spending and from other households earning paychecks. On the other hand, countries with low restrictions have higher covid 19 cases count per 1 million people and this directly effected more people overall. Overall, German GPD dropped by 4.9 % compared with Sweden drop by 2.9 %. The question remains which country did it correctly and which did it more ethically.

On personal level usually literature expresses signs that people who had or are in higher chance to get covid experience higher stress levels as they fear that if they get covid 19 it could lead into uncertain health and this in turn would lead to unstable work situation. (Taylor, Steven, 2020) Like mentioned before in previous literature in the meantime world already was experiencing big economic unrest by Brexit in United Kingdom, United states trade war with China, but after the Covid 19 became pandemic all these major problems became just a small problem in overall economic slowdown because of all measures that were taken by different governments. At the beginning of the pandemic the main shocks happened in Asian companies, and it had negative impact on prices of large capital companies more than smaller ones. Of course, as capital markets are interconnected this impact got transferred to European and Us continents too. (Kanapickienė, 2020)

One of the main focuses in Covid 19 pandemic became ability to find resources and financial needs to take care of one's health as research shows that people's income directly affects people's health and longevity. As pandemic did not happen earlier in XIX century this risk could have been overlooked and the resources needed for unexpected health problems was overlook in low-income households. From research in United States, we can see that low-income households might be hesitant to have professional medical help as it would cripple their finances, and this leads to higher complications at times of accidents. (Avencena, Anton, 2021) This leads to other questions about inequality which been growing since early 2000. In the past during the Black Death period in Middle Ages the work force got killed off by pandemic in such short time that the inequality gap shorted because of shortage of working force to support the rich. As times have changed but the gap between rich and poor still climbs. As current pandemic with medical advances helps to curve the death toll and mitigates the spread this leads into shorter economic meltdown which from historical data points at even greater inequality between poor and the rich. (Scheidel, Walter, 2020)

Studies find that low-income households show significant loss in their income, study suggest that they seem to lose jobs 60 percent compared to high income households who report 40 percent loss in their employment. This study was conducted by ALICE which is acronym for Asset Limited Income Constrained, Employed. (PR Newswire, 2021) This also comes into perspective as United States government put out strong measures to combat job loss and overall support for people through government subsidies. Tools that US used to stimulate its economy:

1. Stimulus checks.
2. PPP loans.
3. SNAP program.
4. Unemployment Insurance.

One of the main tools to curve the poverty is stimulus checks of 1200 USD, this check was funded by overall US government decision to allocate 2 trillion USD. As this is given to every citizen it gives injections that help consumption and this in short term boosts consumption. (Papachristou, M., & Kleinberg, 2021) In other parts of the world like Europe one way of stimulating economy was to give tax relief on mortgage interest payments which not only leaves more space for households to spend that cut else were but also encourages new households to consider the house owning perspective and this in turn creates stronger financial stability as house owners do not have to consider rent in their expenses. (Vangeel, W., Defau, L., & De Moor, L. 2021)

PPP stands for Paycheck Protection Program, and it provides loans usually too small or medium companies to help fund their employment spending. Companies are determined if they are small or medium by how many people they employ, and PPP loans are available to companies with 500 or fewer employees. Government allocated 669 billion USD to this program. (Aaron Elstein, 2020)

SNAP is a program formerly it was known as Food Stamp Program. This program allocates food to the people in most need and helps them to feed themselves. This program’s main goal is to alleviate food insecurity in US. (Gundersen, Craig, 2019) Overall people receive around 127 USD a month, this program mainly targets households below poverty line, and these receive majority of the support, but it also includes households close to poverty line too. As this program quite large it raises questions how much of its spending comes down to actual support in food and the percentage is 92.3 precent is spent on food and rest on administration.

Unemployment Insurance is a federal state program that is financed with payroll taxes, as every state government has separate system under general guidelines from federal authorities. Usually, this insurance covers half of persons wage for 26 weeks after the working place is lost. As person is earning more this percentage can get lower. (RUGY, VERONIQUE DE, 2021)

This raises question as ALICE research still indicates that after all these programs still America’s poor still struggle to find funds to balance living expenses with their income. As many articles paint a picture of strong recovery from main downfall during lockdowns still this leaves people in poverty range in strong downfall and their recovery might take a lot longer than the rest of US economy. (PR Newswire, 2021)

1.4 Ways by which Covid 19 affects financial stability

As mentioned before Covid 19 has wide range of ways it affects the financial stability. One of the key points that government must identify before acting is to identify the root causes of the problems this pandemic courses. Financial markets volatility, supply chain disruptions, limitations on citizens movement, efficient vaccine rollout, corruption that could happen with allocated funds, loss of labor force willing to participate in high-risk environment and misinformation spread (Dey, M., & Loewenstein, M. A. 2020). All these key points pose direct threat to efficient systematic response to ongoing pandemic. One efficient way to identify how does the covid impact spreads is by using transmission mechanism of covid 19 impacts on specific financial players. Transmission mechanism is usually used for monetary policies as they have wide range of objectives to achieve and even wider range of parties that it affects. (Martins, N. M., Pires-Alves, C. C., Modenesi, A. de M., & Leite, K. V. B. da S. 2017) Other papers cover mechanisms that focus on information transmission during covid 19 and how it affects four separate channels by which it directly influences economies. Main catalyst of contagion, transmission of information via media, spillover effects on financial markets and lastly contagion through macroeconomic fundamentals. These channels create clear way by which information about the covid 19 have effects on selected elements and overall economies. The study focus is the economic impact and not the economic stability aspect of the information. One of the more interesting insights of this paper is that the Covid 19 crisis is unique as it has clear date of begging, and this created strong base for immense amount of research that could be done which studies effects this kind of crisis has on wide specter of topics including financial stability. In this aspect this crisis is unique and crates immense value in research. (Yarovaya, Larisa and Brzeszczynski, Janusz and Goodell, John W. and Lucey, Brian M. and Lau, Chi Keung, 2020).

As pandemic caries on strong to the 2022 amount of research related with transmission grows and papers like Intraday volatility transmission among precious metals, energy and stocks during the COVID-19 pandemic cover the effects pandemic had on metals and energy stocks. These studies use most traded US ETFs to find volatility connections with Covid 19 start and the stocks before the pandemic. As expected from global pandemic effects are significant and the spillover effects of the risk that came with pandemic created severe volatility in these markets. Such examples like gold price hitting all the high prices as expectations for recovery were pessimistic, negative oil prices that shook the economies all over the world and recent price recoveries and jumps to heights create strong insecurity for investing participants. Again, models that help to understand the effects pandemic creates give explanation for these anomalies which occurred during pandemic. (Saqib Farid, Ghulam Mujtaba Kayani, Muhammad Abubakr Naeem, Syed Jawad Hussain Shahzad, 2021) Papers like Mathematical modeling of COVID-19 transmission dynamics with a case study of Wuhan create models related with spread of the virus which helps to select appropriate solution for the problem as there are situations when one person can become super spreader and crate way more cases of covid than estimated average. The paper uses from classical models like SIR compartmental model in epidemiology and others more complicated ones. Based on models this paper suggests that elimination of Covid 19 is possible with substantial measures likes contact tracing, social distancing, and strong vaccination measures. This shows how mathematical analysis helps to create basis for hope. (Piu Samui, Jayanta Mondal, Subhas Khajanchi, A mathematical model for COVID-19 transmission dynamics with a case study of India, 2020)

Papers which were analyses beforehand shows clear value in diagnosing the transmission path by which Covid 19 has impact on certain study objects. This creates question by which paths does the Covid 19 affect households' financial stability as this pandemic created clear impact on household finances. Studies that are mentioned before help to paint the picture of transmission which happened from Covid 19 pandemic. Financial stability could be considered as a lack of changes in the way households have to deal with financial responsibilities. The pandemic had effects on at least four transmission channels. (Dey, M., & Loewenstein, M. A. 2020) It is also important to understand what main sources of concern for households are when it comes to pandemic. Main source of income for average household is from salaries which are further splinted to cover specific purposes like utilities, groceries, travel expenses etc. Other vulnerable path that Covid 19 touched is financial markets, housing markets which seen high volatility contribute additional risk to household's savings as these two are strongly connected with investments. These assets usually comprise majority of households wealth. For example, in Lithuania strong majority of assets are based on real estate and financial assets are usually owned by depositing in insurance/pension funds. Also, large amount of household income is allocated to food and utilities. (Bielskis, Karolis, & Čiginas, Andrius, 2020) Financial stability also is important from credit perspective as for average household to be able to secure a housing loan this person must have stable finances, this is measured by checking if household income has been consistent for 6 months and this for banks is defined as stable income which creates stability. These measures are taken to prevent manipulation but shows how important it is for households to sustain and maintain stable financial situation and the more stable personal finances are the more person can afford to use tools available. (Ozel, B., Nathanael, R. C., Raberto, M., Teglio, A., & Cincotti, S. 2019)

As pandemic directly affects all mentioned channels this means that government involvement is needed to curve the risk. Studies on stimulus in China has shown that there is connection with housing prices and stimulus if there are stimulus housing prices immediately reflect the change in households' finances. The effect is also has shown that even when governments put in contractionary monitory policy housing prices are less effected as expected and could cause even further volatility in housing prices. This volatility has been seen all over the globe as pandemic forces households to stay at houses and this additionally to stimulus gives further incentive to start owning a real estate. Especially in China housing market represents around 30 percent of its national GDP and this shows how important it is to stop market volatility.

(Yin, X.-C., Su, C.-W., & Tao, R. 2020) As mentioned before household savings are also affected by pandemic as more and more households expect or already suffered a job loss due to closure of businesses due to risk and lower available demand. Paper which covers a personal experience of an Indian household shows that during pandemic household income drastically decreased and lead to strong spending cuts which allowed to stabilize and allocate appropriate amount to retirement savings. This shows that during pandemic main pandemic effects usually are felt by risk connected with work security and ability to maintain same workplace. (Janetius, S. T. 2020)

Other transmission paths relate to healthcare as this is directly consumed by households and there is wide range of health care systems which cope with the pandemic in different manner. Two main systems are as followed public healthcare and private healthcare. Pandemic via this path directly effects households and creates longer lines for public healthcare systems as the number of infected can rapidly explode leading to overcrowded systems. Private healthcare systems are usually expensive and one of the strongest examples of inaccessible health care systems could be found in United States as insurance and private healthcare systems create high risk of bankruptcy for households if they get into serious health crisis. (Blank, R. H. 2012) As pandemic has shown the healthcare systems at the peak of virus spreads becomes more transformed into emergency assessment areas. This directly has shown that other patients who are not suffering from covid 19 also are impacted directly as staff and equipment must be repurposed for covid 19 patients. Usually, healthcare facilities do not have flexibilities to rearrange and change that much as there is verry little compromises that could be taken when dealing with the health problems. This extra strain has shown that this channel for covid 19 has the biggest impact for households because if addressed the situation only gets worse as medical staff must bear extra strain too for extended period. (Abu Hilal, M., Besselink, M. G., Lemmers, D. H. L., Taylor, M. A., & Triboldi, A. 2020)

To summarize transmission channels, it is important to acknowledge most vulnerable paths by which households could be affected. As mentioned, first and foremost household income is most important to take in consideration as pandemic could result in loss of workplace leading into situation from which there are necessity to make cuts to expenses to stay afloat. As countless articles have mentioned this pandemic did close public spaces and businesses related with tourism for extended periods, also service jobs like indoor dining were heavily restricted. This led to massive work loss and income instability for countless households. Other channel is housing, studies ranging from China to other major countries have noticed that prices during pandemic skyrocketed and renting expenses increased with unsustainable rates. This leads into more problems to households as this volatility might results to lower house ownership rates and overall lower wealth in populations. Lastly other studies show that extra strain on healthcare systems also create hazard in public as different systems like in United States may lead people to bankruptcy as they lose jobs and insurance with it. Also, in other countries hospitals do not capacity for fast peeks of waves that happen. Overall, these transmission channels could be considered one of the most important when examining financial stability for average households.

Companies are crucial in understanding how pandemic affected economies as these are usually creating working places for average households and have direct impact on whole systems. Some papers dive deeper at specific sectors like energy and have identified that companies which acted on Goodwill impairment suffered the most and recorded extremely high volatility. (Fu, M., & Shen, H. 2020) Main problems for companies overall during pandemic could be separated into transmission channels which were affected by Covid 19:

First and foremost is the customer/consumer volatility. As pandemic creates unstable environment this directly affects from energy sector to small businesses in small towns. One example could be seen with energy sector companies. These companies usually rely on stable consumers which are expected to consume electricity over long period of time. Pandemic spread in some instances lead to closure of factories which in turn forced this major consumer to cut its consumption. This directly crates high risk as energy sector has extremely high fixed costs. This risk creates direct stress on financing of these companies. Other factor that this sector must bear is that electricity is one of the most important aspects of modern life and it is expected to be available when ever needed. This expectation leads into stress on suppliers as well (Fu, M., & Shen, H. 2020) Other company types are more well-adjusted and have seen major success like ecommerce companies which have seen dramatic increases in new customers and support from the government. As more and more countries adopted social distancing, work remotely the more households had time to spend in their living places. This sector has shown that companies can take full advantages of pandemic and show strong performance even when the economies are shut down. This sector is deemed essential, and this allowed it to be open even when lockdown was in place. (Ungerer, C., Portugal, A., Molinuevo, M., & Rovo, N. 2020)

Table 1

Emerging tendencies from Covid 19 effects on economies.

Power consumption decrease	Ecommerce increase
As more and more consumers were shifting from working at workplace less power consumption was noted in travel sectors.	As more consumers had time in their homes bigger need was seen in home decorations and goods which created strong demand for such companies.

Source: Author, 2022

As noted in table one trends were created from Covid 19 and they were boosting some sectors economic output but on the other hand some sectors decreased at never seen paste and created new anomalies like negative oil price which has never happened before.

Second major channel by which Covid 19 affects business is labor supply specialty in sectors where direct contact with customer/consumer is required. Due to pandemic nature of spreading via contacts major sectors like restaurants, schools were closed for periods of time which led in to major labor volatility, the more restrictions were imposed the more people were affected. This dramatic shift puts jobs in food market in turbulence as it is extremely hard to change supply chain to cater new customers for example schools not only employ staff directly but effect food suppliers which rely on expected demand schools provide in consumption. Same situation is seen with restaurants as they also require stable supply of ingredients. This supply crunch leads to high volatility in farming sector and fast changes lead farmers with hard decisions to hire workers or not as demand is not stable and producing goods is expensive and long. (Larue, B. 2020) On the other hand, same restaurants are struggling to hire the same staff they fired during lockdown. As pandemic poses risk to health directly and the working place requires direct contact with high flow of customers this has lead service work undesirable, other factors as low wages are also considered as these sectors heavily rely on small salaries to maximize profits. Medical sector also suffered quite heavy blow as the risk which is associated with this work only increased during pandemic and the medical requirements that are imposed to medical staff create difficulties in creating new labor participants in this sector. (Poór, J., Antalik, 2021)

Lastly, changing regulation which could be changed in one conference and leads into full decline of the business model. As mentioned before almost every government took actions to curve the spread of covid 19. Some countries took more aggressive approach like China which has imposed one of the strictest measures to combat spread of the pandemic. This creates a strong challenge to businesses which are relying on free movement of customers. Measures like social distancing create problems in indoor spaces like shopping centers and markets. Other more severe restrictions like full lockdown create extra strain on businesses which rely on live interaction with consumer or workers who cannot access their workplaces. (Singh, J., & Singh, J. 2020.) As these restrictions are the law there are very little space for negotiation measures could be take in conferences and the set date businesses which operate indoor must require customers to show their vaccination documentation, this example could be seen in European countries as they adopted “green pass” which creates free movement for vaccinated consumers. This creates additional strain on businesses as they are responsible for checking and enforcing these measures in practice. (Stefanizzi, P., Bianchi, F. P., Brescia, N., Ferorelli, D., & Tafuri, S. 2022)

As mentioned before there are also measures such as z-score, Zeta model These models directly help to compare companies' capitalization and returns it also measures solvency risk. This model shows clear score and if this score is high than probability of company insolvency is lower than companies with lower z score. This model could be used for any kind of company as it takes measures such as profitability, solvency, operational cost and these could be identified in almost every company. (Ng, S. T., Wong, J. M., & Zhang, J. 2011) Risk with this model are quite clear too as this model does not take in consideration that data reported by these reports could be manipulated. That is why this model alone cannot be defying answers when defining financial stability in company. Other model that is used is Merton model, this model focuses on companies' ability to meet its financial responsibilities and overall ability not to default. This model heavily relies on the fact that if company has more liabilities than assets this would mean that company is going to default. (Afik, Z., Arad, O., & Galil, K. 2016)

As mentioned by other authors financial stability in banks are also directly affected as studies in 2020-year show that of Central Eastern South Europe (CESE) experienced increase of 12 percent of non-performing loans which automatically creates difficulties but also shows how resilient banks are to the crisis. Information from Sylwester Kozak papers show that smaller banks are better at keeping appropriate levels of equity but might suffer from higher chance of new riskier loans to keep non-performing loans index at stable rate which creates deceiving performance indexes. Other notable finding is that at beginning of pandemic stock indexes considered banks strongly affected sector as Dow Jones banks stock index dropped 35 precents and Standards and Poor's agency downgraded the index to negatives which created influence on the credit ratings for at least one third of worlds banks. (Kozak, S. 2021)

Table 1

Effects of covid 19 on households and companies from peer research.

Covid 19 effects for companies	Covid 19 effects for households
Companies experienced covid 19 through strict government measures which at Covid 19 peek in 2020-2021 forced full closure or partial closure of majority of non-essential companies creating large effects on companies profitability but also overall ability to continue business.	Large number of households were forced to work from home or stop working during 2020-2021 Covid 19 peek period showing that all non-essential workers were experiencing turbulence in stability of theirs main income source.

Source: Author, 2022

To summarize companies experienced severe effects of Covid 19. Channels by which effects are transmitted are quite like households as both parties are affected by the same pandemic. For certain companies were able to take advantage of this situation and expand their business ventures but most experienced high volatility which comes with high risk. Key player in business success are the customers as they consume the goods or services, but this pandemic has shown that even most successful companies might shut down because of government regulations to curve the spread of virus. High volatility in labor also proves severe strain on companies as labor participation in major countries has decreased. Already companies have reported losses due to vacant positions especially in service sector where the risk is high.

Starting of literature that covers financial stability shows that it is broad term which has wide range of topics it can cover from households' personal finances to overall economic situation. Peers define financial stability as a long-lasting period during which there are only small volatility in markets, where households see their wealth growing and companies manage their responsibilities and assets in stable manner. One of the major hurdles of financial stability are crises which usually happen in every decade. Financial stability definition also takes in consideration actions that are taken before the crisis to prevent overall meltdown of stability. These actions differ from levels by which studies are conducted. As nationwide financial stability means that there is as low as possible instability in governmental bodies, the environment for businesses is favorable and households can sustain their wealth growth. Governing bodies have variety of measures that it can use to sustain financial stability and absorb shock which is expected during crisis. Governments have two main action points that could be used during financial instability, fiscal policies and monetary policies, these two can create support that households and companies which are mostly affected require the most. Examples of such could be quantitative easing by introducing stimulus checks, recent examples of such were observed in United States. These actions create lifeline for households which lost their income or cannot sustain workplace. Of course, these measures come with risk of high inflation as supply side might not be ready for arbitrary boosted demand. Financial stability from personal level in literature could be defined as ability to withstand turbulence by understanding importance of risk managing, creating alternative income sources and also having alternatives in sources of income. Companies regarding financial stability have wide specter or difficulties to cover as these are responsible for average household income, also responsible for efficient channels by which whole companies' finances are distributed. Financial stability for companies is achieved by using sound plans and measurements like mentioned Z-score, Merton models which allow analysis in these measures to select appropriate action plan. Literature which is covered create clear path which can be used to achieve financial stability in every scope. All these measures are quite important as main idea behind financial stability is lack of turbulence like crisis which are expected to happen each decade. Exact crisis did come in 2019 as Covid 19 pandemic started and started global problems for everyone. As this pandemic directly creates problems for households with job loss, limitation of movement and high volatility in financial markets. Companies have new regulations to abide, stable stream of work might come to end as virus could stop production at factories. This new risk exactly matches definition of crisis which disrupts financial stability. Governing bodies have responsibility to manage new regulations with market expectations which might not be compatible like lockdowns and other measures that had to be taken to curve spread of the virus. Covid 19 has clear transmission channels by which it affects every key player in financial stability. For households this involves uncertainty in job security, volatility in financial markets, health risk, these channels which are affected by pandemic directly threat financial stability for household. Other factors which could be used to calculate households' financial stability could be availability of credit as this measure checks if household has stable income for more than 6 moths. Main financial instability channels for companies are as followed, volatility in demand, changing government requirements and legislation, unsecure labor supply, these main channels are directly linked to companies' financial stability as volatility in any of these creates high risk for company. Other measures which are used are like Z-score, Merton models which allow to calculate risk associated with specific financial statements. These are not only models which could be used as they do not take in consideration the fact that companies can manipulate their financial statements, or overall sector stability but are strong tools to check financial stability of specific companies. To finish of the review, literature shows that financial stability is broad topic which requires selection of specific selection of study objects as it might heavily vary from households financial stability to countries financial stability definitions.

2 METHODOLOGY FOR ANALYZING HOUSEHOLDS AND COMPANIES FINANCIAL STABILITY DURING PANDEMIC

Main purpose of research in this paper is to establish how Covid 19 effected both companies and households' financial stability. Collected data allows to test hypothesis which makes mechanism by which Covid 19 affects channels that directly are linked to financial stability. For tackling financial stability itself throughout Covid 19 pandemic there are separate ways by which this problem could be understood and analyzed as other peers manly use qualitive methods to analyze shares or other statements provided by companies. This creates need to hypnotize how Covid 19 risk and effects are transmitted. This leads to creation of mechanism by which pandemic reaches financial stability of households and companies.

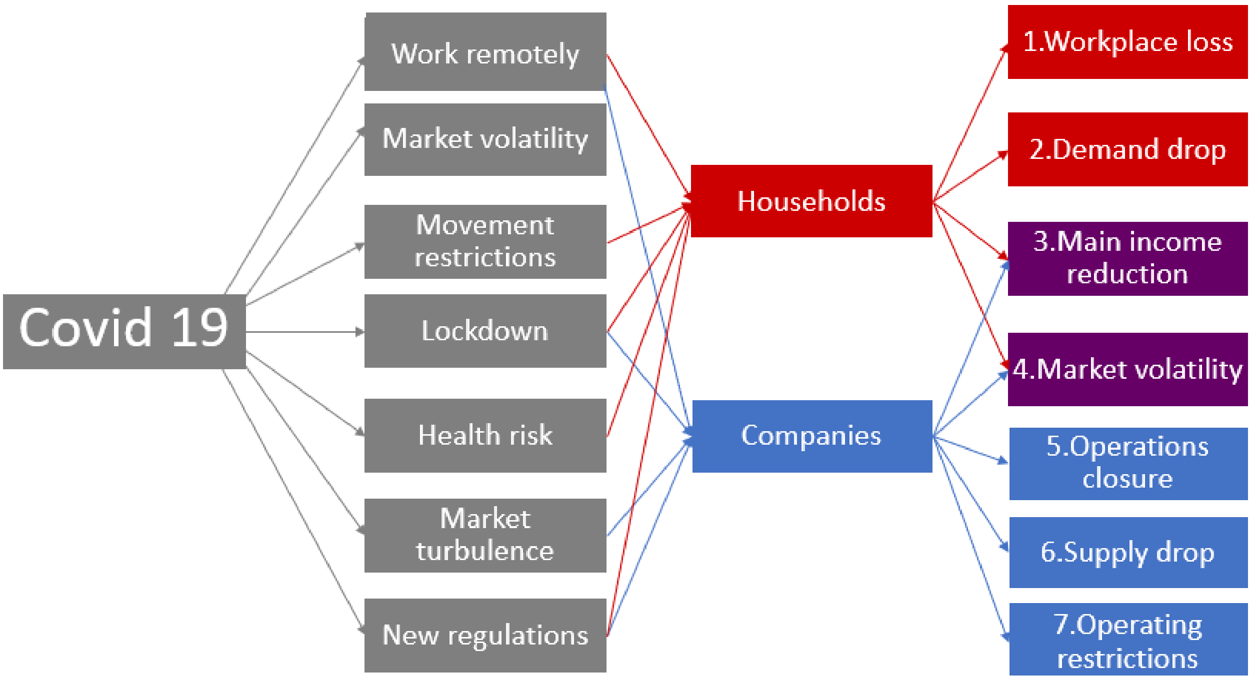

Figure 1. Covid 19 transmission financial instability channels to businesses and households

Source: Author, 2022

The figure 1 is separated in to four levels, first level is cause of the financial instability, second level is consequences of pandemic and channels by which financial stability spreads. Third level are the parties that are affected by these channels and financial instability which is created by covid 19. Last level is outcome of these effects on what effects relate to what parties. Figure 1 highlights the paths by which Covid 19 affects companies and households. Also, this figure shows by which aspects this transmission affects financial stability and what are the outcomes of these effects. Some of these transmission paths are interconnected like new regulations and lockdown measures which forces both the households and companies to experience financial instability. Financial markets volatility also affects both parties and this begs the questions how actually these transitions affected both parties. To ensure that this model represents reality it is important to analyze date related with companies and households. To do collect this information focus group interviews are selected. Each channel by which economic parties are affected is numerated to indicate from which literature source assumption was created:

1. Workplace loss – this assumption is based on 1.4.2 subtopic which discusses impacts and effects which loss of workplace may have on households financial stability. As person or family losses workplace this creates uncertainty which requires savings to overcome as workplace is usually main income source for average household.
2. Demand drop – Demand drop could be identified in same subtopic as financial stability become uncertain more households select basic needs such as food, housing dropping overall demand for other products or services such as tourism creating even further stress on most effected sectors.
3. Main income reduction – This assumption caused by covid 19 could be attributed to both companies and households as lockdowns could affect both companies and households ability to operate their main or secondary sources of finances. 1.3.1 subtopic covers how these additional risks create financial instability related to reduced performance for households and companies alike.
4. Market volatility- Market volatility assumption is based on research related with households and companies financial stability as both companies and households are affected by volatility, share markets and housing markets which are more related with households.
5. Operations closure- This assumption is created by reviewing government actions which highly effected companies ability to operate that is why it is more associated with companies and less with households. As companies under restriction got support from government usually companies managed to retain workforce for some period.
6. Supply drop- as covered by previous demand drop companies after some period of low market demand cannot sustain production creating lower supply and in this regard create financial instability as scaling up production is a lot more costly and is covered in subtopic of 1.4.2.
7. Operating restrictions- this assumption is based on that fact that even after fist peek of pandemic some industries have seen significant restriction on how much capacity they can operate. Restrictions like covid 19 vaccine passes also had effect on new expenses which rose from new workers. This assumption is based on literature covering government responses to covid 19.

Data which is collected by focus group interview is generally analyzed using two methods classical content analysis and constant comparison analysis. For this certain analysis as questions are open and quite wide classical content analysis is used but also constant comparison analysis is also present as prior context of whole research allows to understand how and why specific actions were taken and are effective.

With companies it is little bit easier as companies which are traded in stock exchange must provide financial statements for their investors and overall public. This information comes from directly from companies and would give a clear picture what were "normal" results during the business-as-usual periods and results during this pandemic. This information would come in quantitative form and would require indexes and formulas to analyze. Other side of this research requires information directly from households but there is lack of this information publicly available as personal information about people's finances is quite sensitive it is not as easy as finding financial statements from official sources. Such financial reports and financial soundness indicators are better understood with ROA ROE formulas which identify if overall sectors or companies have advantage over other horizontally aligned companies as they do similar or same activities but provide different results.

To tackle lack of real data about peoples finances this research finds fit to interview 7 professionals who are dealing with people's finances to ask them how this pandemic affected people's financial stability and overall performance of people's finances. As financial stability is concept that involves finances it only comes as natural to directly conduct interviews with professionals who work every day with people's finances to ensure that they are stable and growing. When dealing with focus groups it is backed by peer studies that it is good practice to have from 6-8 subjects. And this leads to 7 separate interviews about trends in households' finances and their stability. As data regarding people's finances is sensitive and different professionals could have highly different customers that they must analyze this means questions must be provided before the interview. As interviews will be done via online calls, they will be recorded, and answers will be logged to compare with other subjects. Interviews takes from 10-20 minutes as there re same number of questions and answers do not discuss specific examples. Questions regarding financial stability for professional finance managers are open ended as closed questions would leave out crucial information that mechanism highlighted in figure one did not indicate. Number of questions are same for every participant, as questions are specific there is no space for grater details but there is enough space to highlight key specifics about financial stability which was observed from customers. These questions are important to test figure one assumptions that specific Covid 19 effects are felt not only by companies but also by households. These questions also create true picture as personal reporting on this topic could create unrealistic situation as there is higher stigma to disclose that household has problems with financial stability but when it comes from third party there is no incentive to overestimate household's financial situation as it directly does not affect respondent.

To understand and select private bankers specific criteria must be met and are created to find managers which are collaborating with households finances, this helps to collect data which is relevant to thesis as main objective is to get direct insight on how pandemic changed households habits during covid 19 pandemic. This analysis poses need for requirements for focus group interview participants as that person must have significant practical experience in wealth management field to observe trends during and before covid 19 pandemic. Participation requirements are these:

1. Direct working experience in household wealth management.
2. Minimum working experience during period of 2019-2022 year.
3. Participants manager must provide approval for interview.
4. Participants must not disclose client's personal information.

First requirements are mandatory as this information is required to conduct research of household's financial stability, the main objective of this research and to narrow the managers experience as these could also manage entities funds. Second requirement is needed to make sure that interview subject has required time to provide pre pandemic trends, pandemic trends, and post covid rush trends which would help to create clear picture from firsthand experiences during this period. Third requirement is needed as these subjects work in highly ethical workplace and every information which is provided outside the bank must be approved by upper managers to secure clients and banks interests. Lastly specific client information does not help to create clear picture to overall view of situation during pandemic and could distort final conclusions every client might react with slight deviation but as wealth managers manage pool of clients this deviation would be avoided with large scale and less specific trends.

As focus interview requires specific questions to test the covid 19 effects on households' financial stability questions are selected to verify results of model which was mentioned beforehand in figure 1:

1. In your opinion, how pandemic affected average client's financial stability over pandemic duration?

To test figure one assumptions this question is designed to understand how overall pandemic affected clients financial stability showing if pandemic had effects on clients financial stability. Expected answer for this question should express that covid 19 had impact and clients wealth was at risk due to uncertainty.

2. Did on average high net worth clients wealth grew over duration of the pandemic, by which circumstances?

Second question is designed to ask if client experienced any growth how it occurred understanding sources it could be possible to understand which practices might be most effective. Expected answer to second question should be along the lines of pandemic did affect clients especially businesses owners which had to deal with significant government interference.

3. What were the main priorities for clients during pandemic and was there significant changes in their portfolios?

Main priorities question is asked to understand which of objectives are most important for private bankers clients, it can touch demand link in figure one. Expected answer to this question is, clients took priority in safe options to reduce risk exposure to the high volatility and in case of health problems assets would be used to support their personal health.

4. Did clients experience financial difficulties during pandemic if yes, what actions could be taken to assist client?

This question helps to understand if assumption that covid 19 can have effects on high-net-worth clients job security of reduction of main income source. What actions could be taken to reduce risk of financial instability. Expected answer to this question is, yes, as covid 19 took large toll on all sectors and mainly medical and pharmaceutical companies mainly benefited.

5. In case of job loss, what are direct actions that are taken during pandemic?

This question navigates job loss and main income reduction assumptions as these are directly related with financial stability. Expected answer to this question should sound like this, as clients are business owners government subsidiaries and supporting loans could be used to lower the chance of full job loss.

6. Have you noticed reoccurring new trends from beginning of the pandemic in clients financial actions?

This question tests demand correlation with pandemic as it helps to understand what were trends that helped to overcome financial instability. Expected answer to the question should name that client took on safer options during investing and took in consideration additional risk imposed by uncertainty surrounding pandemic.

7. What are expected actions that are taken by clients when markets are experiencing volatility during pandemic and before pandemic?

This question fully tackles assumption that volatility has significant impact on financial stability for household especially when it is created by unprecedented pandemic which was not foreseen by markets at all. Expected answer for this question should be, clients took additional steps to reduce volatility by diversifying and reducing exposure to markets which are more effected than others.

8. Any other insights on financial stability during pandemic

   Last question relies on private bankers to provide additional insights as some of the bankers might catch additional factors which affect high-net-worth clients ability to sustain financial stability. Expected answer to last question should name private bankers personal insights in to pandemic and financial stability.

This leads this paper with two types of data about overall same problem that everyone is experiencing. The companies' financial statements would we secondary data and the interviews would be primary data that this thesis would prove. Interviews would be done by me and would involve specialist from banking sector, directly from firm that proves to people that kind of services. Like mentioned before data that is going to be provided by professionals is quite sensitive as it directly involves clients that is why this method would provide general trends and not the specific numbers or client data. This approach would be ethical as it helps to paint the picture without using personal information and information provided would be strong as it would come from specialist that directly works with people's finances. This would also mean that data is valid and has background.

Transmission mechanism part which covers companies makes assumptions that Covid 19 effects like work remotely, lockdowns market turbulence new regulations might have negative impacts on financial stability and these factors are already incorporated into recent data which is provided as quarterly financial statements. Model also assumes that main income reductions might be expected during pandemic, market volatility because of pandemic also becomes more apparent and creates additional risk to creditors all these and other factors are considered when companies release financial statements to their investors, that is why these reports pose important role in analyzing financial stability for companies.

As publicly traded companies must provide financial information about their performance and overall financial statements even when they show downfalls this would be strong information that could be used for calculations and overall trends in companies which had to deal with novel Corona 19 virus. Some sectors dealt with this better and some worse like mentioned in literature review. As financial stability is closely related with banking sector and overall ability to deal with finances it comes as natural to analyze banks performances during pandemic and before it. As date is produced by external auditors this means that usually there are no false information in it and if companies perform badly, it is stated that way. The data range would be around 5 years as this means that information gathered would provide pre pandemic and pandemic performance of banks. As banks provide balance sheets with loan, financial products, overall growth and even trends this allows for common size analysis. For sample size Lithuanian Central Bank finds that only 11 banks have full license to perform banking activities and there are 6 affiliate branches in Lithuanian financial markets. This means that at least 3 main banks should be analyzed and one affiliate branch. Podviezko research has identified that Lithuanian economic sector is heavily relying on commercial banks to keep its stability. (Podviezko, A. 2013)

For banking sector financial statements analysis, it is important to find key elements of their balance sheets. As banks have wide range of assets some of those would not be affected by pandemic and could corrupt overall analysis of affects virus had on banks. As balance sheet information is simple, excel could be used to do calculations of trends and other observations. The information from balance sheets could be used in simple linear regression to see if covid cases had any effect on certain parts of balance sheets it allows to show if pandemic had any effects on certain parts of banks. Method by the name of z-size method which was highlighted during literature review would help to select statistically significant figures and would allow to check if company has worse measurements than before pandemic. Other peers have used credit ratings, financial statements indicators to understand financial reports and if there are any red flags of early crisis that might come from instabilities. (Desai, H., Rajgopal, S., & Yu, J. J. 2016), other factors are also used to analyze financial stability by peers like (Mikhailova Svetlana Gennad'evna, 2019) uses degree of dependence on investors, state of financial resources of enterprise, determination coefficients like multiple linear regression equation are used by authors like (Natocheeva, N., Borodin, A., Rud, N., Kutsuri, G., Zholamanova, M., & Namitulina, A. 2019) these indicators use averages found in relevant in regional levels and create valid variables to compare with competitors in order to find if company is underperforming and also has financial instabilities.

When tackling this complex problem, it is important to find a way to analyze both parties which had to endure pandemic that affects everyone. Information about companies is readily available and could be used for calculations but then there is main problem why should these companies matter for financial stability for whole economies. As banking sector is responsible for stable cash flows from households to companies vice versa, they also do provide vital services to the whole economies. Balance sheets of these companies are provided by third parties of auditors who ensure that the information about their financial statements is true and absolute, and this means that this data is reliable and could be used to understand overall trends in banking sector capabilities to deal with this pandemic. Other measures like share prices could be used to find if the company is dealing with the pandemic in strong manner but this number could be affected by more factors other than pandemic.

Other papers do cover financial stability in more complex calculations, and this results in data with strong results, but all calculations do not take in the fact that pandemic happened, and it affected every aspect of financial stability in banks and its customers, and this leads a gap in research to uncover how did the commercial banks cope with the extreme shock of unexpected pandemic. Also, other papers look at overall effects pandemic had on whole economies, and this mashes banks into player role in bigger picture. As identified in figure one pandemic has variety of paths by which effects are spread and data from financial statements allows to find connections in analysis.

It is also important to highlight that Covid 19 pandemic was most visible and effective during end of 2019 and begging of 2022. Such timespan allows to analyze all countries as whole world was tackling pandemic. The start of pandemic highlights speed by which pandemic spread and how initial respond looks like. Pandemic end happened with start of war in Ukraine when Russia invaded Ukraine, media and government attention was moved from pandemic and restrictions and other measures were lifted allowing for full freedom of movement, economic activities and other.

3 RESEARCH FINDINGS FROM HOUSEHOLD AND COMPANIES' PERSPECTIVE ON FINANCIAL STABILITY

As mentioned in literature review and in methodical part financial stability is analyzed in specific sectors which for this thesis are households and companies. Overall financial stability is identifiable in reports of international monetary fund research which will be used to do quantitate research of both firms and households indexes which create broad view of situation in Baltic states. For additional data Lithuanian Central Bank data will also be used to establish specific factors which had effects on financial stability. Other part of empirical research will be conducted via focus group interview which includes private wealth managers from banking sector which will provide their insights answering questions in interview. This part creates qualitive research which would be associated with households financial stability and trends which are created during pandemic. Lastly as part of companies financial stability part financial statements of three biggest Lithuanian banks would be analyzed using z-size model, linear regression model, and other models to create full picture on how banks were affected by novel covid 19.

3.1 Financial soundness indicator in Baltic states analysis

First part of research is conducted analyzing financial soundness indicators of three Baltic states which were dealing with covid 19 related problems. FSI indicator has been recorded by international monetary fund since 2001 June and this allows to perform dynamic statistical, comparative, graphical analyses. These recorded documents help to understand how in a sense financial stability changed in selected period and allows to compare separate countries with same indicators that is why in this part it is important to highlight specific measures that allow to understand changes. Financial soundness indicator focuses on all slices of economies and records data that is related with all sectors allowing users of this data to understand how overall economies manage their financial security. As Baltic states are all post-soviet era countries which gained independence at same year, they had same amount of time to develop and create their economies. This creates grate comparisons for each other and to identify if their strategies to tackling pandemic are effective.

First figure indicates how three countries during pandemic managed to lower their non-performing loans percentages, countries are indicated by different colors. Grey color is used for Latvia, Orange for Estonia, and Blue for Lithuania. These numbers are expressed in percentages.

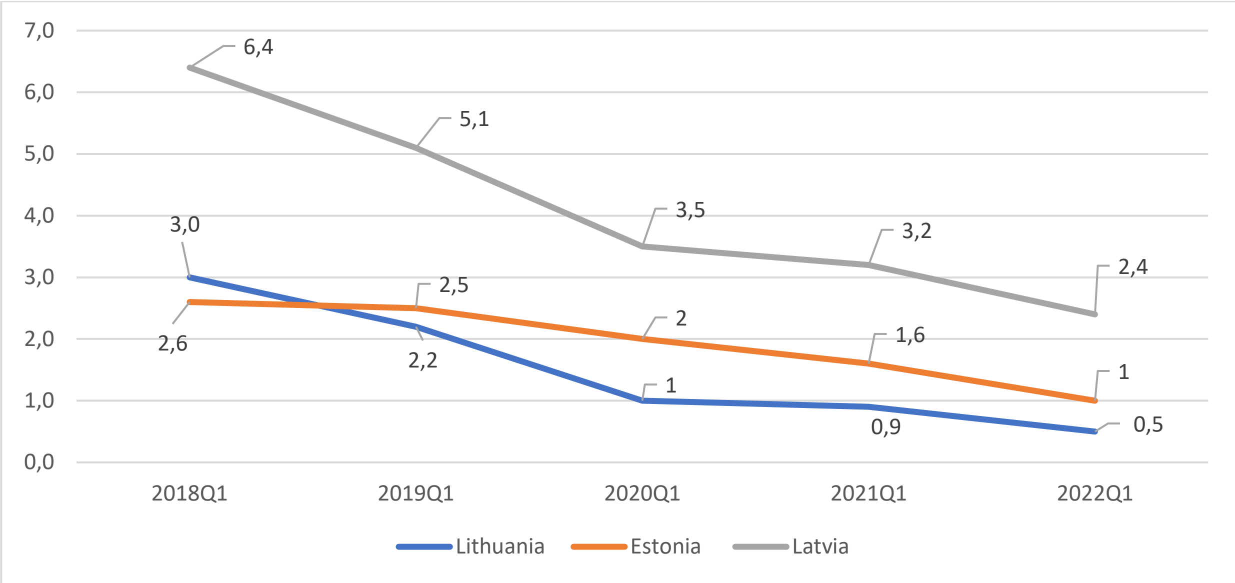

Figure 2, Baltic states nonperforming loans to total gross loans percentage, International monetary fund 2022

From this figure it is possible to identity that two out of three Baltic states managed to lower their non-performing loans by significant margins. Biggest change happened in Lithuania as Lithuania lowered nonperforming loans by 83,33 precent. Latvia also lowered their nonperforming loans by 62,5 precent which is also significant taking in consideration that covid 19 took place and had most restrictions for 2020 year. It must be highlighted that ECB and other local authorities created significant support lines for companies which were experiencing financial difficulties and this action had effects which we can identify in this figure. This clearly indicates that climate in financial markets as well as other sectors was favorable for improvements in financial stability.

Other selected index is return on assets which were recorded by International monetary fund. This index helps to identity what was the base return and which country had better return overall. This has significance as returns on assets means efficiency in overall companies. As companies had adopt to the restrictions it should have effects on ROA and this could be identified from Table 3.

Table 3

ROA, ROE of companies in Baltic states during 2018Q1-2022Q1 period

Country	Estonia		Latvia		Lithuania	
Date	ROA	ROE	ROA	ROE	ROA	ROE
2018Q1	2,2	11,0	1,2	10,3	1,4	13,4
2019Q1	1,6	9,5	1,3	11,3	1,5	15,6
2020Q1	1,3	8,3	0,3	3,2	1,1	12,1
2021Q1	1	7,5	0,9	9,0	1,0	12,2
2022Q1	1,1	8,8	0,9	9,0	1,1	15,3

Source: Financial soundness indicators, International monetary fund 2022

From the table 3 it can be identified that highest ROA was recorded before pandemic in 2018 meaning that companies were quite efficient with their assets as this drop in effectiveness could also be identified when look at whole period. This is especially clear in Latvia as this drop was over 30,77 percent compared with 2019 years heights and it was gradually dropping. This was showing that overall pandemic effected assets returns in This country. Overall, on average during same period Lithuania and Estonia managed to equalize returns on assets but when looking at return on equity Lithuanian managed not only to keep high returns but also grow them by 14,27 percent. This creates a clear picture that Lithuanian companies were taking more advantage of uncertainty and were able to payout bigger dividends to their shareholders. This might have effect on overall economy as from all Baltic states Lithuania has the highest inflation period.

It is important to identify how many of loans overall are allocated towards companies and how much are for residential ones. As mentioned before overall companies which have been suffering because of pandemic are able to apply for subsidized loans which have significantly eased requirements starting with cash for paying workers salaries to the commercial real estate loans which are used by same companies. Understanding how many of those loans could be subsidized helps to better understand how widespread government support could be. In table 3 data is presented about information of each Baltic state and how much of loans are allocated for what sectors.

Table 3

Loans distribution by total amount of loans in country

Country	Lithuania		Latvia		Estonia	
Date	Residential real estate loans to total gross loans	Commercial real estate loans to total gross loans	Residential real estate loans to total gross loans	Commercial real estate loans to total gross loans	Residential real estate loans to total gross loans	Commercial real estate loans to total gross loans
2018Q1	29,20	18,45	21,12	16,71	37,38	23,51
2019Q1	20,40	13,41	23,23	19,76	39,70	22,38
2020Q1	20,48	12,08	23,78	19,32	41,40	24,33
2021Q1	19,50	10,60	22,36	19,85	42,31	24,62
2022Q1	19,23	10,50	22,89	18,29	41,70	24,72

Source: Financial soundness indicators, International monetary fund 2022

From this Table it can be identified that Estonia has significantly more real-estate loans compared with overall loan pool, same could be identified with businesses as these also are highest from Baltic states. What is notable that Lithuanian companies loans even with support from government dropped by significant numbers from start of selected period. This drop is quite notable as these leads into businesses closing their shops, workplaces and other customer contact areas creating more financial instability. From quarter one of 2019 to overall 2019 it can be identified that drop was gradual but continues to 2021 first quarter. Latvia and Estonia on the other hand can be seen increasing loans to businesses for commercial purposes. Loans for housing mostly increased in Estonia as this percentage to all loans only grew and reached its peak in 2021Q1 with 42,31 percent.

To summarize financial soundness index, it is important to note that Baltic states did get affected by Covid 19 induced financial instabilities. Loans regarding housing sector did grow by small margins two out of three countries. What is even more notable Lithuania was mostly affected by covid 19 as from 2018 all selected sectors regarding loans for commercial or private real-estate dropped by significant percentages. Same could be seen with ROA and ROE these indicators show how efficient and profitable investments in companies and companies themselves are. From 2018 to current time all Baltic states had reduced their returns showing that companies were affected by situation created by covid 19. Now testing assumptions by methodology that supply was lowered it could be attributed to the drop in these indexes as companies had to close for periods of times, main activities were restricted. This has the power to effect how companies operate, take out new loans to expand. For households this also could be identified as volatility in housing market creates uncertainty that hinders on households trust in certain markets such as housing market. Closure of businesses directly involves households main income as many businesses which had to shut down are employing same households and in chain event create financial instability for almost all participants in economies.

3.2 Analysis on financial stability in Lithuania

As financial stability is one of key responsibilities of central banks Lithuania Central Bank has extensive date related with financial stability in Lithuania, data related with loans performance for companies and households, price changes on household and companies essential elements like housing price and its changes. Based on these observations Lietuvos bankas has created many tables which help identity key changes during pandemic. First figure that captured attention is indicating how did loans distribution changed during specific period. Data which is used starts from 2019 start and ends in 2021 first quarter as no more data is available but still this information allows to see trends which indicate how pandemic affected overall markets by looking at how parties borrowed at beginning and further periods of pandemic. Data on covid 19 cases in Lithuania only starts at 2020-03-01 day with first registered case but overall panic started even earlier. Overall peek restrictions happened at end of 2020 with further rollout of vaccines and strict restrictions. Here is figure highlighting effects of restrictions.

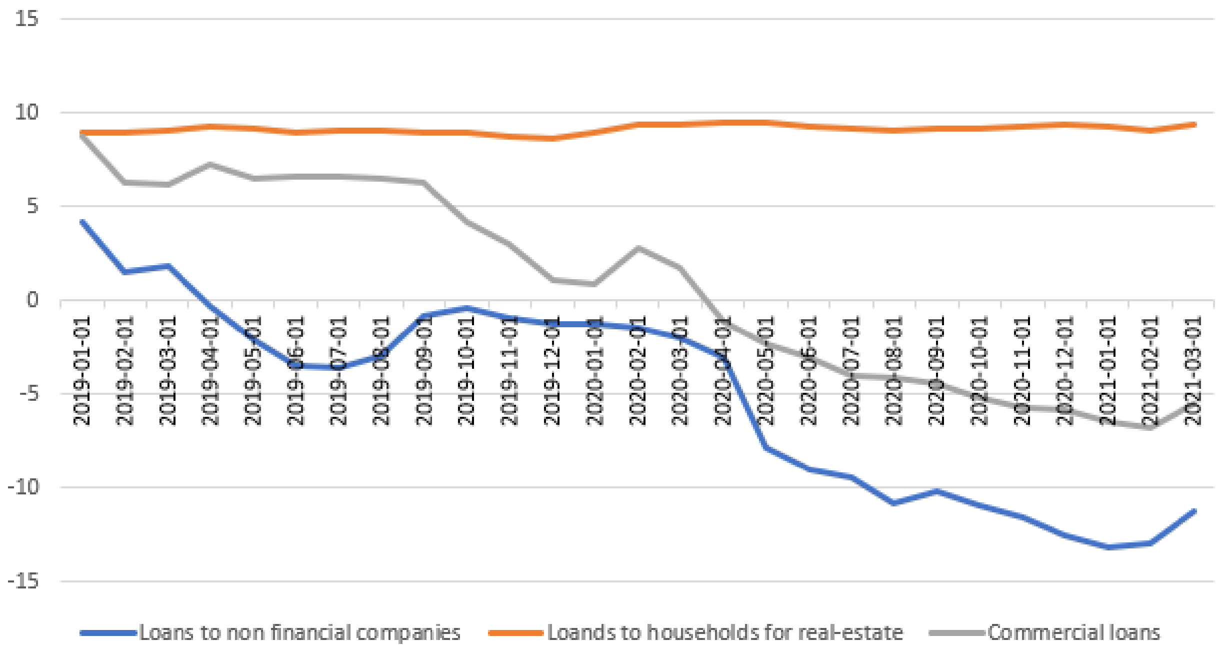

Figure 3, Loans distribution by percentage for three types of loans, monthly change 2021 Lietuvos bankas

From this figure banking sector did see significant shift in loans as it is noted during pandemic work from home became new phenomena and this shares the light on fact that people invested in real-estate and decided that even with pandemic uncertainty companies did not take loans as it was risky considering that entire businesses were limited in their ability to take actions. It is significant that looking at data about covid 19 in Lithuania first case was noted at 2020 March showing that overall people decided to take out less debt related with consumption and focus on housing. Companies also identify that their ability to grow was impaired with restrictions and overall lack of certainty.

It is important to highlight those loans for housing can only be done with housing available and in this instance Lietuvos Bankas has indicated that vacant house also shrank analyzed period as over three years more loans were given out and more people saw need for housing more of houses were sold.

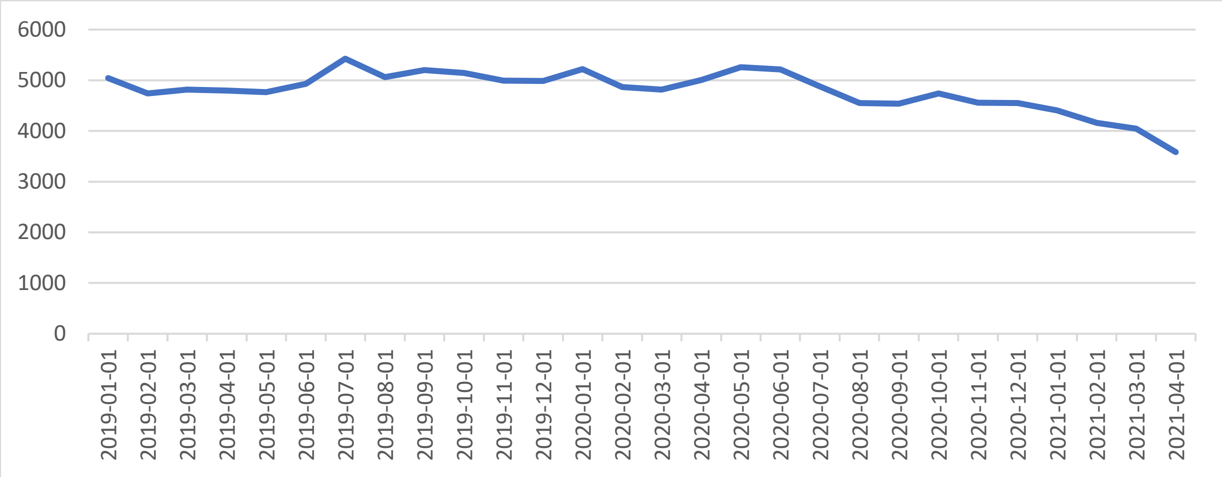

Figure 4 Unsold apartments in Vilnius over period of 2019-2021 years, Lietuvos Bankas 2022

From this it can be identified that apartments overall were occupied more than twenty-nine percent more than at start of 2019 showing that overall shift to more loans and shift to working from home created incentive for people to purchase more apartments and this created considerable increase in housing price but also filled previously unwanted houses which were not used. It should be noted that one of the most significant factors for financial stability is stable housing and this shows that households focus was on housing.

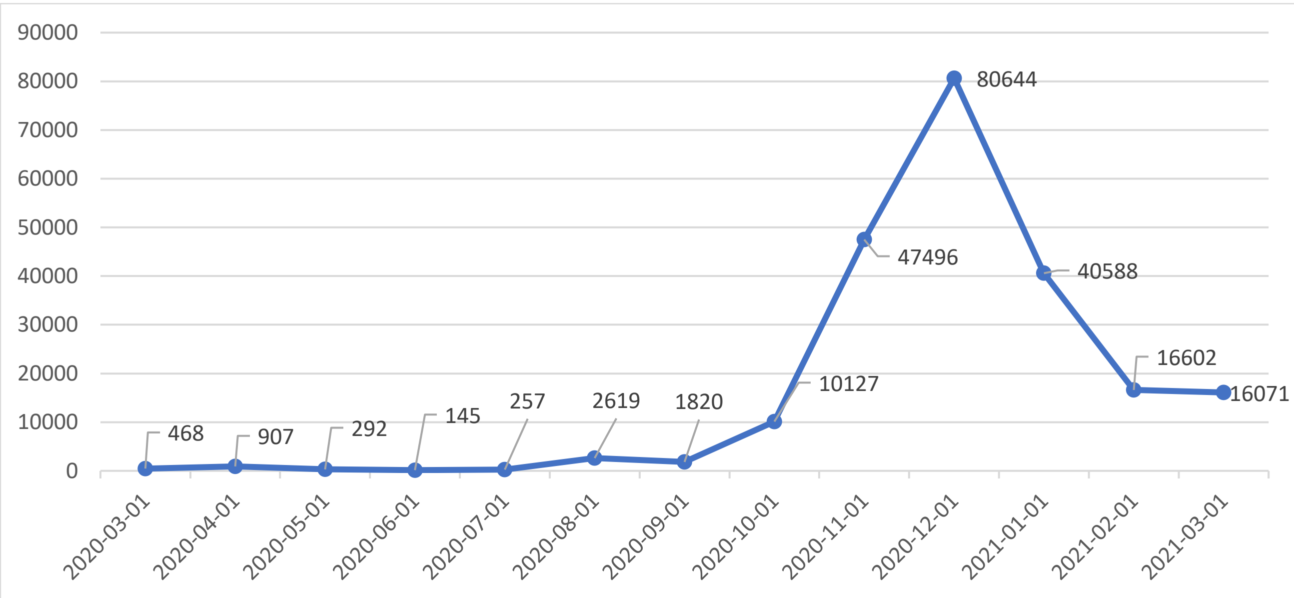

Figure 5 Covid 19 cases peek staring first month up to 2021-03-01, Our world data 2022

From this figure we can clearly identify that covid 19 cases did have impact on specific sectors including non-financial companies and consumer credits which indicate that people did not spend as much as they could considering prior periods like in late 2019 when these loans were climbing value and expanded. The only outliner is housing loans which have strong explanation as these were essential as increased people had to stay at home even during working hours. Correlation between monthly covid 19 cases and decreasing percentages is this. For monthly non-financial companies loans covid 19 cases corelate with -0.54, for housing loans its 0,17 and lastly for consuming loans correlation is -0,55. For both companies and consuming loans it is identifiable that correlation is strong meaning they have similarities. These findings assist in finding that both companies and households did experience changes in their loans habits.

Other indicators are also used to understand how covid 19 affected peoples financial stability, from data found about overall financial stability of Lithuania Lietuvos bankas indicates that companies and households had doubts in financial markets and chouse one of the safest options to invest which are bank deposits.

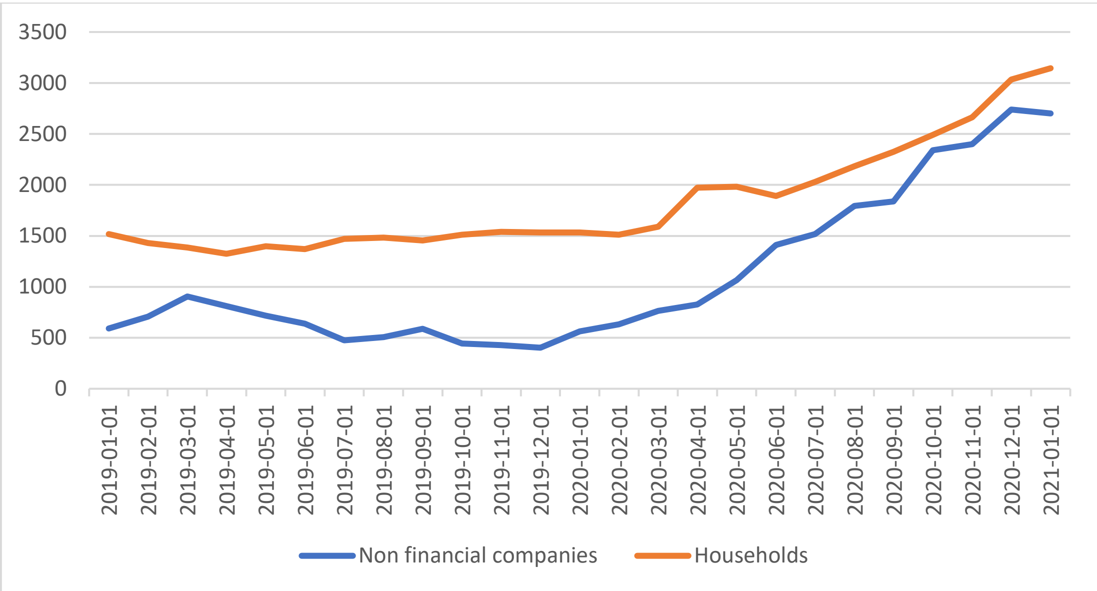

Figure 6 Deposits in banks during 2019-2021, Lietuvos bankas 2022

From this figure markets were experiencing distress and more people decided to invest most significant increase is identified in companies as these prior outbreaks in Lithuania shrank their deposits by 4,45 precent at same time households were more cautious and since 2019 increased it by 10,67 precent in 2020. It is known that after 2020 March first outbreak started and both companies and households started increasing there share in banks deposits by incredible margins. Companies deposits rose by 379,34 precent which shows that they ether got extremely more available funds, or they were expecting significant restrictions and wanted to use these funds as cushioning to ensure that funds would be available but also would give at least minimal returns. After 2021 deposits returns are set to 0 precent meaning companies after 2020 had ether to move or outright takeout their deposits as this would not lend any returns. When checking for correlation companies deposits have strong correlation with 0,6906 index and households deposits have extremely high correlation with 0,9261 index meaning that both new cases and deposits had similarities in their growth.

Lietuvos bankas also has provided percentage of companies in specific sectors who have suffered from financial instability and results from this chart indicate high rise in financial instability with first cases of covid 19 found in Lithuania at 2020 March. Financial instability could be defined as interruption in ability operate, logistics problems, restrictions on operations, closing of operations by force (due to lockdown). Data from this figure highlights how rapid was the change after first case of covid 19.

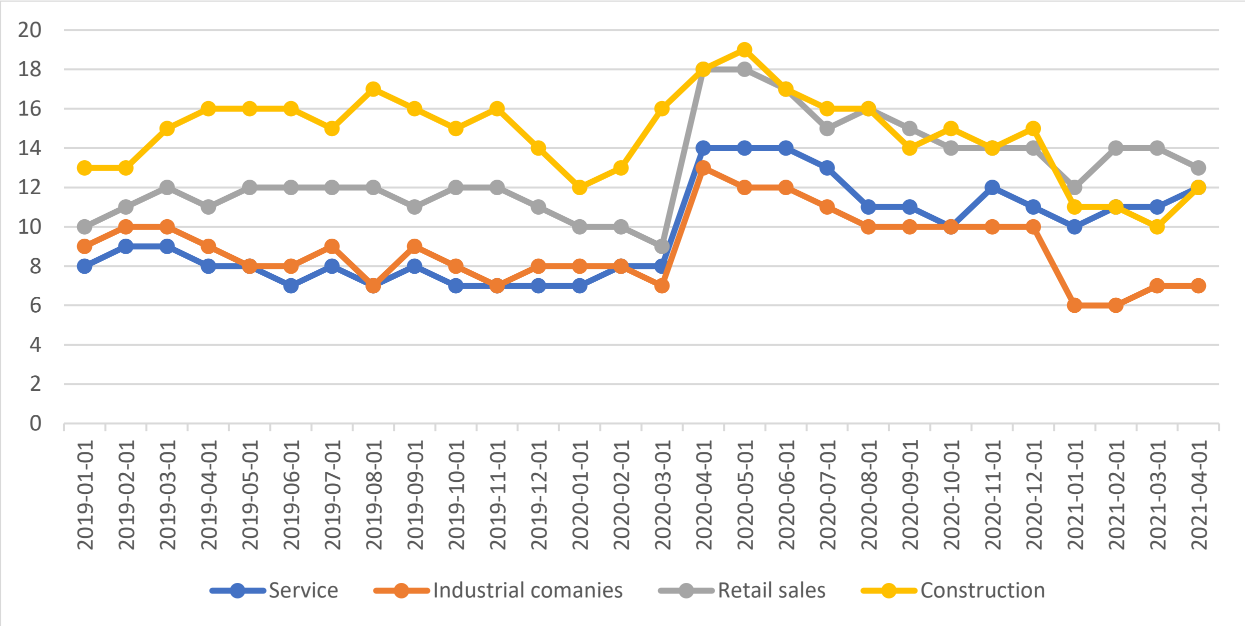

Figure 7 Companies by sectors which experience financial difficulties, financial instability

From this figure critical point in significant increase is 2020-03-01 day which was the first month at which covid 19 was detected in Lithuania, actions to curve this outbreak were extreme and this created lockdowns, working from home by force or even closing of specific sectors. Looking at monthly change of each sector it must be noted that retail sales companies have highest increase in financial difficulties which from month 2020-02-01 to 2020-03-01 counts as double the last month showing that this sector from observed ones had the strongest impact with restrictions. Other notable findings show that even toe construction companies already are most risky and unstable sector still they experience lowest jump during the first case detected at only 23,1 precent change from last month showing that already it was high and restrictions on operations did not show meaningful change. Last observation from this chart indicates that companies which overall suffered most financial stability starting 2019 and ending at 2021-04-01 were service and retail companies which overall show that these sectors were most reliable ones industry companies seen 33,33 precent increase in financial stability and construction companies managed to improve financial stability by 8,7 precent since start for 2019.

It is notable that during the whole targeted period annual inflation did reach peek at heights in 2021 with 4,6 precent which is twice as much as European Central Bank sets to be a normal inflation rate. It is notable as even with logistical and governmental restrictions. From other graphs some businesses and households did not spend as much on other goods, and they still had available funds to spend on necessary goods. Also, it important to take note that over the period covid 19 did shut down certain companies from operating and leaving others with notes that they are essential to operate.

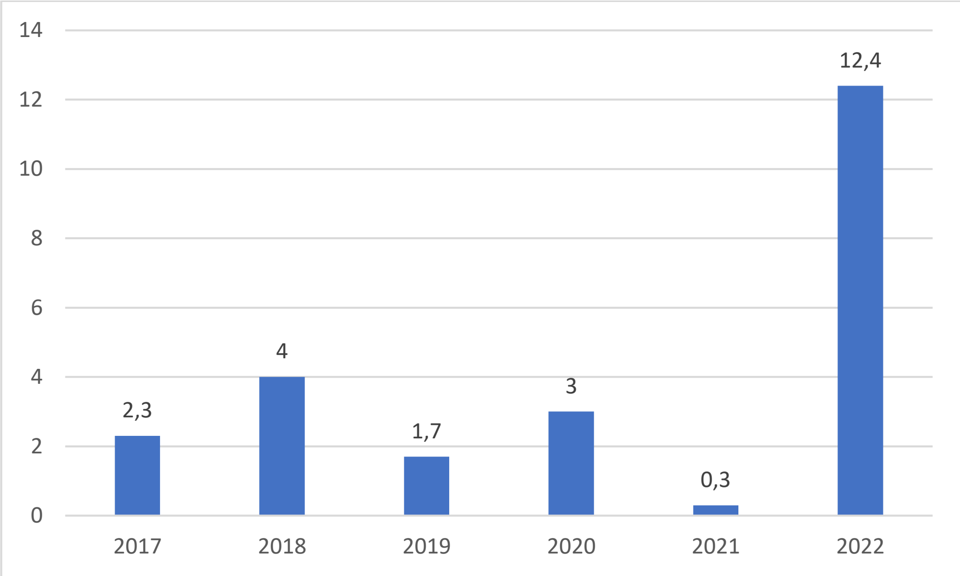

Figure 8, Lithuanian annual changes in inflation, Official statistics portal, 2022

From this chart it can be identified that there are only three years in which covid 19 happened and at the highest point of restriction inflation almost hit the lowest point in five-year point. Also, notable that after lowest points inflation hit the highest point too, this was after the biggest restrictions were lifted and life started to get back at old tracks as more people got vaccinated and businesses were opening back. It shows that even during the pandemic economic indicators show strong economic performance, as soon as Ukraine Russia war started this indicator jumped to rarely seen highs as covid stimulus was ended and additional hardships added with supply of hydro carbons and oil.

In conclusion financial stability supported by Lietuvos bankas data shows that covid 19 did show sights in peoples and companies attitudes towards loans and what were priorities for 2019-2021 period. Strong correlation between covid 19 and specific changes do suggest that with rise of pandemic actions which were taken to curve spread had significant effects on economies both from households perspective but also from companies side. Sectors like real-estate, construction, industrial ones did see weaker effects of pandemic as indicated in figure X, as for other sectors like service and retail marketing the increase in financial instability for monthly changes reach doubling. As almost all sectors got effected by these financially unstable companies also households fall under same category as theirs working places become unstable. Again, it is notable to highlight that housing loans were the only loan category which was no effected by pandemic cases and this has clear indication why, households had to spend more time in homes and real-estate is seen as strong investment during crisis as it is tangible investment.

3.3 Financial stability analysis for households using focus group interview

As there are seven subjects selected for focus group interview it is also important to note that one specific bank is selected to find these subjects and it is Danske Bank, large multinational bank with pool of around 5 million clients. As mentioned before approval from manger must be obtained and seven managers were selected for this focus group interview.

As seven private bankers have answered the survey, they created several key points which are highlighted by all of them. Workplace loss risk for high-net-worth clients was minimal at best as they are ether senior age, or they have established positions which only would close with whole company. Demand drop is also not affected as clients of private bankers have large savings which allow them to overcome cutdowns. Main income also did shrink only for clients who are operating businesses like hotels and tourism industries as these were indicated by private bankers as must affected areas by Covid 19. Lastly last assumption of methodology for households mentions volatility which was also tackled by questions in survey, and it must note that all private bankers mentioned that clients if they have resources and do not need funds, they will wait it out before taking actions as stocks especially during Covid 19 experienced high volatility, but clients managed to gain high wealth gains from old positions.

Now to analyze every question in detail all answers are sorted to table by participants row. Participants chouse to be anonymous as higher management did not want to release their names. Participants are numbered from one to seven. In third table is first question which covers how did covid 19 affect clients financial stability. Answers warry but clear trend could be indicated as all of them mentions one fact.

Table 5

First question on high-net-worth clients financial stability

Based on fact that these are high net worth clients I have not seen any significant shifts in financial stability during pandemic. It is notable that usual customer of our team services are older people with already	Clients financial stability improved, clients experienced high wealth increases during pandemic period, and this was seen in majority of clients' portfolios.	First few months of pandemic did create some difficulties and instability but after some time financial stability on increased and clients did	Clients experienced mixed effects of pandemic as at beginning markets were uncertain how to react but over time clients became even more stable than before	Clients financial stability during pandemic did increase, this might seem counter intuitive but with advice from us and large starting capital clients experienced	Clients financial stability during pandemic did increase, this might seem counter intuitive but with advice from us and large starting capital clients	financial stability fluctuated, begging year was hardest as stock markets were not as stable, harsh restrictions on businesses affected few clients. Other periods created better financial stability as clients

established wealth.		calm down.		strong results.	experienced strong results.	experienced surge in stock prices.

Source: Danske Bank private bankers survey, 2022

From table it could be identified that private bankers noted that clients financial stability grew during pandemic period. This growth could be attributed to one main factor, this factor is financial stocks strong performance which lead clients with positions in financial markets a lot more stable and well performing than those who do not have stake in stock markets. Overall, on average private bankers also not that high-net-worth clients did not experience effects of pandemic on their business-as-usual workflow. This can be compared rest of population which experienced changes as more people had to chouse other options and could not sustain normal flow as consuming loans were decreasing at high rate in whole loan market.

Second question covers the question if clients wealth grew by which factors were key to this growth and how did it impact clients overall wealth. As these answers come from 7 different private bankers it was expected to see variety of answers but again one fact was found almost by all participants. Almost all clients managed to grow their wealth during pandemic which shows difference comparing it to people who did not have high wealth prior pandemic. Senior aged people with high net worth could be indicated as group of people that are in risk zone as pandemic is most dangerous for this group of people, but high wealth prior pandemic show significant risk reduction as they do not need to participate in conventional work which requires contracting other people.

Table 6

Second question on high-net-worth clients financial stability

Looking at net worth it could be said that clients wealth did the opposite of expected. Due to prior	As mentioned in last question, clients wealth grew	Clients wealth grew and key driver of this growth was	People who use private bankers are usually wealthy and have wide range of assets	On average by large amounts, clients had prior stakes in	Yes, clients wealth grew as they have high stakes in well performing	Yes, it did grow, and this growth was sustained for long period as

exposition to shares in companies clients wealth has seen substantial growth. Looking at 2022 there are some indications that due to same reason there are some losses.	mainly because of high increase in assets which were holed prior of pandemic.	equity returns which were extremely generous. This growth was highest after initial panic.	that they need assistance to manage, in this situation as financial markets grew, and stock prices overall grew clients experienced significant increase in their net worth.	financial markets and booming share prices created large profits for clients.	companies. Majority of stocks they have been rising ever since first few months of pandemic.	recovered and skyrocketed. Like mentioned before few clients did have to use savings to sustain their businesses so their wealth shrank.

Source: Danske Bank private bankers survey, 2022

Looking at results of this survey clients overall experience significant boost to their wealth as stocks which were already held seen volatility but overall grew with rates which are unusual even at stable times showing that high stakes in stock market again created strong trend which assists to stay stable during unstable times. The only group of clients for private bankers that did experience hardships were business owners who had to use their savings to stay stable during tight regulations of governments to curve spread of Covid 19. Yet again savings did assist these clients as it helped to fund their operations and with closing of strict restrictions businesses again started to see high returns with even bigger flow of clients as these were ready to spend their vacations in hotels and tourism locations.

Moving to third question it is important to cover what priorities for clients during Covid 19 as this area could impact their decisions during investing or withdrawal of their investments for other uses like medical payments and vacations in less effected places. Other part of the question covers how new priorities effected their portfolios. This allows to understand which actions were considered most effective to tackle Covid 19 effects for private bankers.

Table 7

Third question on high-net-worth clients financial stability

No change in clients habits, they kept their current strategies.	No clients did not experience financial difficulties during pandemic. In start of pandemic for around 3 months clients highest priority was the health and clients did take into consideration spending more on safety.	If clients were able to wait out turbulence, they did not change strategies, and this meant that they kept their portfolios without meaningful changes. This stay also could be attributed to private bankers as clients listen to our advice	On average no big changes happened to clients' portfolios as they kept being successful even peek pandemic period.	There were no significant changes in portfolios, clients had prior expectations to grow their wealth.	Some clients with higher risk tolerance did buy companies shares which were expected to recover and with pandemic restrictions removed this was a successful move growing clients wealth	Safer options for investments as still none knew how long pandemic will last. No significant changes were made to clients' portfolios.

Source: Danske Bank private bankers survey, 2022

As noted by private bankers clients on majority of cases did not need to take additional actions to overcome financial difficulties which might arise with Covid 19 as no actions were taken on majority of cases. Only few selected clients had to take actions as they had their own businesses which required additional funding from owners side to stay afloat. The only time that clients did change their portfolios in meaningful way was at start of pandemic when some clients did take more safer approach by investing in safer options and mentioned that in case of their health was at risk, they would prioritize that.

Moving on to the fourth question which analyses have clients overall experience financial difficulties and here private bankers shown two major trends which are, ether clients did not experience financial difficulties at all, or they had some as their businesses required additional support.

Table 8

Forth question on high-net-worth clients financial stability

On average clients did not experience significant financial difficulties, especially clients who	In start of pandemic for around 3 months clients highest priority was the health and clients	Some of clients did experience financial difficulties, mainly clients with hotel and restaurant	For my clients financial difficulties did not occur as they have significant portfolios	Like mentioned majority did not experience financial difficulties but small portion did	They did not experience financial difficulties, but they did see some losses in	Yes, not all but few did experience difficulties as tourism and service businesses had seen hardest

had more shares in companies. Clients with personal businesses did experience difficulties, some had to use savings and cut down on staff.	did take into consideration spending more on safety.	businesses. These financial difficulties were mitigated by providing loans to them to stay afloat until they can continue their businesses.	and stocks during pandemic performed well.	as they had stakes in tourism equity. Actions that were taken: new loans with government support, usage of savings.	their portfolios as mentioned due to stock market volatility.	restrictions and these businesses require staff which is not easy to replace of cut down. Main assisting tool was loans to sustain businesses.

Source: Danske Bank private bankers survey, 2022

Looking at this table it is notable that businesses which are identified are: Hotel and tourism related enterprises like restaurants showing clear trend that only portion of clients have active businesses but also mainly these two were affected the most. As from literature review it could be noted that restcrictions on movement, social distancing and even quarantine after travelling did impose significant hurdles for these businesses the hardest. Looking at rest of the clients from private bankers answers it could be identified that only in 2022 as stock prices got more volatile and growth is slowing down meaning that main growth factor is also becoming less stable, but overall clients still managed to secure financial position.

Moving to the next question which covered what happens if clients lose their main income source of it gets reduced majority of participants did find that clients were not losing their main income sources as factors like their age seniority, owner positions in businesses, large savings created strong buffers to insure them with stable source of finances.

Table 9

Fifth question on high-net-worth clients financial stability

I did not experie nce that in my custom er base on a wide basis.	No workplace loss occurred as majority of clients are seniors who already have moved to retirement or already are in established positions.	No clients did not lose jobs and, they have significant savings that they could use in case of emergencies.	All clients of mine did not suffer job loss and this is rare for people using our services.	For clients no workplace loss occurred but they had to lower their costs by reducing staff in certain businesses.	Clients have established workplaces which are able to adopt so to this question no job place loss took place.	Financial bankers clients are usually people with significant savings and in this instance these savings even for business owners managed to assist to overcome job loss.

Source: Danske Bank private bankers survey, 2022

From table relating to this question, it could be noted that clients of private bankers did not suffer from pandemics grip on work markets as they are mainly seniors which already have established positions or are already in retirement. The only clients who significantly had to adapt were the ones with businesses. These clients had to use their savings to keep businesses going and to overcome restrictions which had effects on their ability to organize work. Actions which Danske Bank did offer by private bankers was loans with government subsidies which assisted to retain works and not to laydown to much staff to lower operating costs. These notes by private bankers create clear picture that high net worth clients had other tools not only the private banker advice which assist with financial stability.

With this question it was important to establish what new trends formed during pandemic. Actions like investments to new ventures, more safe approaches towards risk could be noted as solutions when there is uncertainty in markets. Other notable thing is that from previous questions it is seen that main trend to tackle Covid 19 was investments in stock markets.

Table 10

Sixth question on high-net-worth clients financial stability

Like mentioned before, no significant changes in clients financial habits.	Yes, there are changes. Clients priorities doing their dreams now instead of laying it off to further times. Mindset of do it now formed.	No changes except for one. Clients did invest in more holiday houses which also increased in price significantly in recent time.	High confidence in financial markets which lead into high increases in net worth.	Fast integration to new normal.	Clients were also intense in buying real-estate as it seems to be still growing.	Yes, new trends formed, clients were more willing to diversify, and some started to invest in real-estate.

Source: Danske Bank private bankers survey, 2022

No strong majority on this topic as some have mentioned that clients invested in holiday homes others mention that these clients did diversify in some other less risk related stocks which might get affected by volatility. As housing market still sours and prices skyrocket it shows that real-estate which was bought prior the 2022 rise was strong investment to defeat inflation and get good markup.

Last question for private bankers touches situation when clients stocks or other investments are affected by volatility which might create sharp losses in short term but over time usually restores its value. What is notable that almost all private bankers have the same answer to this question. Volatility is one of the main factors mentioned in methodology when dealing with households financial stability, solutions for this risk are quite complicated but one of the main ones identified in answers by private bankers is holding of position.

Table 11

Seventh question on high-net-worth clients financial stability

Generally, clients stay calm and stay in the markets (hold their shares). As these are high net worth clients it must be said that they have reserves on which to rely.	Clients only take out capital out of investments if its emergency and they need funds as soon as possible. In other situations, clients wait out volatility in markets.	These clients do not sell their positions and stay in market. They tackle volatility by waiting it out.	Majority of clients took advice of holding positions.	As clients have strong stake in financial markets, they tend to hold their positions.	Usually, clients stick to their strategies if prices drop, they wait for it to recover.	In general clients chouse to wait for storm to pass and this during pandemic did help. Clients without businesses especially focused on holding their positions.

Source: Danske Bank private bankers survey, 2022

From table it can be identified that private bankers suggest their clients to hold positions during high volatility and when talking about volatility related with Covid 19 this strategy seems to be working as overall stocks such as S&P 500 gained more than 800 USD per share showing that overall, even with volatility included stocks performed well. Usually when clients do no need quick funds private bankers advice their clients to hold their positions overcoming volatility. Clients such as restaurants and hotel owners did have to draw some of the funds out of their savings to sustain their businesses but even this was mitigated as volatility in owning their type of businesses also stabilizes.

As there is one more question in regard to overall insights from private bankers and what they have identified other the questions they were presented participants chouse not to answer it and that is why the last question is not presented in this research as it has no significant insights to the overall high net worth households financial stability

Inoculation of high-net-worth clients financial stability. Strongest factor affecting these clients financial stability is volatility. Financial markets did fluctuate significantly especially during first outbreak of Covid 19 but over longer period financial markets grew and this created significant boost to private bankers clients as they had significant positions in stock markets. Factors such as job loss did not affect majority of people with high net worth as they are senior age people with established positions which depend on themselves like owning a company or being retired. This created resilience to changes such as working from home or overall closing of specific sectors. The main problem for handful of clients was that their businesses were the most effected such as restaurants, hotels, and other tourism related businesses. Solutions as mentioned for these clients were mainly loans or their own savings to continue operations without closures or reduction on operations or staff. Demand drop was not that significant for these clients as they had strong channels and managed to sustain their wealth grow meaning that they had more funds to spend and were able to take on their wishes more. This conclusion indicates that high net worth people did not suffer significant volatility in their financial stability quite the opposite as majority of people seen their wealth increase leading to conclusion that these people did overcome covid 19 related difficulties better than average household.

3.4 Financial stability analysis in three major Lithuanian commercial banks

As banks are one of the key players in creating efficient economies these companies have responsibility to effectively support economies during critical times. Lithuanian Central Bank has noted that in Lithuania commercial banks have key role in financial stability. This raises questions on how did these banks themselves managed pandemic and how did pandemic affect their financial statements.

Main data for this analysis is in Lietuvos bankas website as this central financial institution collects and oversees almost all Lithuanian financial sector participants activities. As banks in Lithuania have key role the sample for analysis is created from three majority holding banks financial statements. Data for such banks is not available for year 2022 but data from year 2021 4 quarter is available, and this allows this thesis to analyze newest quarters for these banks. As pandemic started in 2019 last quarter it is important to note that more years is needed to create full picture about financial stability of these banks that is why year sample is 5 years, to create averaged base statements for comparison with related numbers which were generated during pandemic.

It is also important to note that during this 5-year period top 3 Lithuanian banks were volatile and this top 3 spot had different banks during specific years that is why it is also important to note that these three banks are selected based on current 2021 01 01 date top 3 bank list indicating that these are:

Top one bank: Swedbank with share of 39,2 precent of share in Lithuanian banking sector, during selected period this bank managed to secure its first place.

Top two bank: SEB bank which also has been stable in second place holding 25,8 precent of share in Lithuanian banking sector, during the years it created strong competition for Swedbank.

Top Three bank: Šiaulių bankas which only recently claimed third place as other competitor lost its full banking license and became foreign bank branch. This bank did not claim this position during majority of this period but will be analyzed as its Lithuanian capital bank and has seen strong growth with 9,2 percent market share in Lithuanian banking sector.

Notable mention in Lithuanian banking sector is Luminor bank as mentioned before this bank lost its banking license in Lithuania and that is why even when this bank had almost 25 percent share in Lithuanian banking sector in 2018 this bank is not selected as Lithuanian banking sector top 3 bank. This shows that Lithuanian banking market has few strong banks, and they dominate whole market but in recent years there was notable shift as more small banks gained banking licenses but big four still has majority hold. Cumulative precent of these banks accounts for around 92 precent of whole banking sector creating strong data to base assumptions that if these banks have significant trends this would mean that whole Lithuanian banking sector was impacted in almost the same way. Percentage without Luminor bank which is named as foreign bank branch accumulates to 74 precent again showing strong majority stake in Lithuanian banking sector.

Data provided by Central Lithuanian Bank shows that banking sector did not slowdown in growth even during pandemic overall wealth of the banks shows significant increase provided in this table, sums are written in millions.

12 table

Banking sector beginning of 2018-start of 2022 years

Period	„Swedbank“, AB	AB SEB bankas	AB Šiaulių bankas	Banking sector
2018	780,69	686,95	199,00	2732,56
2019	933,08	785,95	222,17	2860,98
2020	1052,56	854,13	246,98	3066,91
2021	1398,15	1023,57	377,89	3770,89
2022	1673,09	1106,77	391,95	4277,48

Source: Bank of Lithuania, Main indicators of banking sector activities, 2022.

Key insight from overall table is that banking sector during 5-year period increased in size almost 1,6 times. Also top one bank Swedbank has raised its influence in Lithuanian banking sector over the years cementing it as leader and trends creator during selected period. In numbers Swedbank increased 2,14 times, SEB bank 1,6 times and lastly Šiaulių bankas increased around 1,97 times during 5-year period. All banks and banking sector itself had most growth at the height of the pandemic in 2021 which highlights that banking sector high importance during pandemic. As expected from the biggest banking sector player in 2021 Swedbank had the highest growth of 32,8 precent in its general wealth.

To better understand value creation in banks it is important to note which parts of the bank were growing to show how these companies achieved financial stability during pandemic and how it was possible to create such wealth increase. Table number was selected to highlight these changes.

13 table

Banking sector growth drivers during beginning of 2018-start of 2022 years

Period	Key value drivers	„Swedbank", AB	AB SEB bankas	AB Šiaulių bankas	Banking sector
2018	Loans and other leases	459,11	573,91	120,12	1845,26
	Customer deposits	692,76	541,68	165,80	2007,27
2019	Loans and other leases	521,05	628,05	139,82	1967,93
	Customer deposits	841,16	628,98	182,81	2232,36
2020	Loans and other leases	584,78	626,67	167,27	2025,39
	Customer deposits	955,12	701,71	202,17	2499,87
2021	Loans and other leases	586,87	582,85	175,14	1934,23
	Customer deposits	1226,65	858,42	239,4	3188,08
2022	Loans and other leases	652,44	629,87	210,09	2222,27
	Customer deposits	1414,45	978,3	269,82	3511,94

Source: Bank of Lithuania, Main indicators of banking sector activities, 2022.

Compared with overall wealth Banking sector key growth value driver loans had significant slowdown at beginning of 2021 showing that overall banking sector suffered loss of 5 percent of overall loans to every sector. This drop came from loans to non-financial institutions highlighting correlation with covid pandemic height. Looking at the same year for deposits it is seen that it got highest rise showing that people had significant interest in safe alternatives to put their wealth practically for free. From further analysis of these numbers, it could be noted that loans are separated in to three main categories, loans to financial institutions, loans to non-financial institutions, households. With number one and number two banks it must be noted that Swedbank has significant focus on household loans and SEB bank has focus on non-financial companies which are focus of this bank. This lead SEB bank in losing 7 percent of their loans at beginning of 2021 year, showing that companies have been more effected by pandemic.

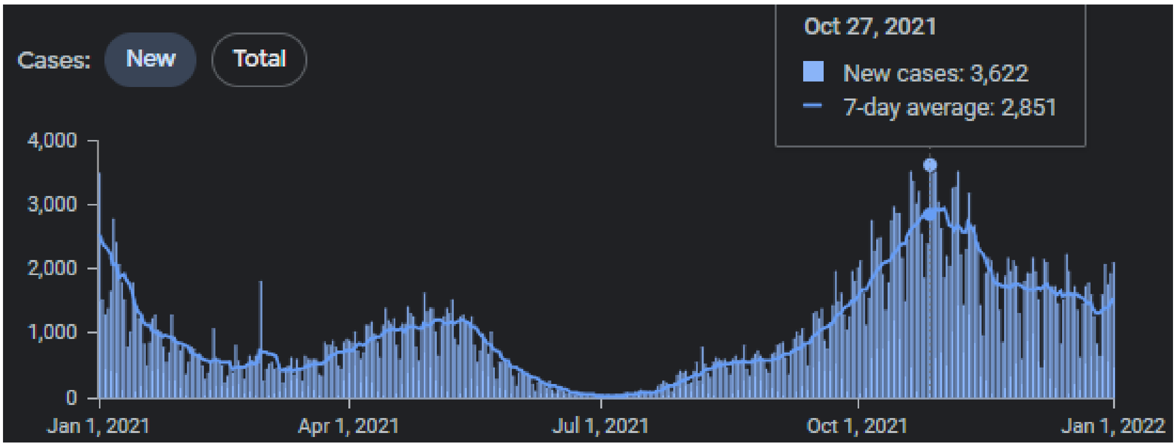

Figure 10, Covid 19 cases weekly count of new cases 2021-start of 2022.

As seen in figure covid 19 cases had spikes but it was not the highest in 2021 but covid 19 restrictions were taking toll on businesses and their ability to expand as uncertainty about covid 19 duration was unclear. As soon as restrictions on companies has been eased loans for companies from figure 2 indicate that increase was observed instead of further contraction. Other interesting observation comes from combining both figures two and second table as it clearly shows that household loans were stronger driver during pandemic as need for mortgages surged even for such bank as SEB bank as it has higher focus on business clients loans to physical clients expanded by 5,6 precent.

Other good indicators which highlight changes in banks are ROE and ROA, these calculations highlight how banks create value out of their assets and equity. Strongest part about banking sector is that it has mark to market accounting and this creates most accurate ROA valuations in compared to other sectors. As these banks are operating in same markets, they take on same competition and can be directly compared. Other shortfall of this method is covered as these companies are in same business field ROE also is calculated from identical balance sheets. Table number 3 highlights efficiency that the smaller banks have over largest financial players in banking sector. Generally, these calculations are used to find how efficient companies are. ROA of over 5 precent is good and ROA of 20 precent is excellent.

Table 14

Top 3 Lithuanian banks ROE, ROA indicators at beginning of 2018-2022 years.

Period	Key value drivers	„Swedbank“, AB	AB SEB bankas	AB Šiaulių bankas	Banking sector
2018	Return on Assets	1,34	1,23	1,62	0,85
	Return on Equity	13,68	12,02	16,48	
2019	Return on Assets	1,24	1,33	2,52	1,20
	Return on Equity	13,47	13,51	22,53	
2020	Return on Assets	1,09	1,44	2,26	1,1
	Return on Equity	13,09	15,22	18,3	
2021	Return on Assets	0,73	0,99	1,58	0,8
	Return on Equity	10,03	11,29	12,92	
2022	Return on Assets	0,49	1,09	1,62	0,79
	Return on Equity	7,7	12,75	14,68	

Source: Bank of Lithuania, Main indicators of banking sector activities, 2022.

Based on table 3 it could be observed that the smaller bank it is the more ROE it has. This highlights the efficiency of the bank, and it also allows to determine what is the advantage of the smaller bank, it was smaller chain of command and must make sure every invested capital is directed as efficiently as possible as it cannot compete with other top one and two banks in other sectors where size matters more. It is important to note that based on yearly change of ROE Šiaulių bankas had the highest and the lowest change of the three banks with rise of 36,71 precent and drop of the 29,36 precent at the peak of covid 19 in start of 2021 year. It is also notable that at start of the 2021 year all banks had drop in their ROE. Volatility for Šiaulių Bankas was highest counting at 0,312 as for other banks who have more established capital this measure respectively was 0,126 and 0,192 indicating that the bigger bank is the less volatility it experiences. It is also notable as Swedbank significantly grew from start of 2018 to 2022 it returns on assets and equity only dropped for whole time.

In conclusion of Top three banks of Lithuania analysis in business-as-usual situation usually banks grow their overall size each year, these trends are visible in 2018-2019 years beginnings but as mentioned before at start of 2020 first effects of pandemic are visible from figure 2 which indicate that active measures were taken which were discussed in theoretical part. The strongest indications about distress are visible in beginning of 2021 as at that time pandemic uncertainty was high, even when vaccines were rolled out pandemic did not slowdown requiring active response especially for companies which was highlighted and indicated from SEB bank's loans spread, which show high focus on companies' loans and that same bank lost highest percent of overall loans of bank during that period from three banks. It is notable also to indicate that even when banks main income sources were affected banks further increased their capital and have shown ability to adapt. Methods for this analysis were horizontal, vertical, ratio and trend analyses.

3.5 Practical analysis findings conclusion.

Firstly, from financial soundness indicators it must be noted that both households and companies were affected by covid 19. Indicators such as ROA and ROE were selected to indicate how efficient investments in these Baltic states economies are and it paints picture that all countries during pandemic were experiencing difficulties. Other peers are also noting that financial soundness indicators are strong predictors of upcoming distress. Authors such as Pietrzak, M. (2021) indicate that faltering indicators show 4 out 12 quarters lead to emerging distress. Percentages for these indicators dropped significantly not reaching peek which happened prior Covid 19. From second table in financial soundness, it must be noted that only Estonia had significant boost to real-estate for households loans, other two countries did not experience boost. Looking at perspective of companies expansion it must be noted that companies did more spare capital to expand as indicated by loans for commercial real-estate companies only reduced their loans for expansion which could be explained as majority of companies had to experience reductions in their operations by government policies which closed all non-essential companies. Other restrictions as hiring new staff to enforce covid 19 rules and other new costs also plays role in companies financial difficulties. As mentioned in this research companies did get significant relief funds to continue their operations from governments including Lithuania, but these actions seem to be less effective as intended as continued downturn in almost all indicators proceeds.

Other part of research covers Lietuvos Bankas financial stability indicators which allows to create picture on financial stability for both parties in Lithuania. Key findings from this data includes those loans for house purchase were key focus for residents of Lithuania, other loans such as consumption loans for households and non-financial companies loans dropped by significant margins showing that both companies and households experienced changes in their financial habits. From companies side these findings could be collaborated with financial soundness index findings showing that companies had less prospects to loan more funds to expand and only had interest in borrowing to sustain their own businesses. Other authors like Nigmonov, A., Shams, S indicates that other financial institutions picked up initiative during pandemic and filled gaps which were formed by dropping demand for specific loans. Nigmonov, A., Shams, S. (2021).These trends are also expanded on with sectors which experienced financial difficulties, data from this figure indicates that companies had significant spikes in difficulties leading into more layoffs and workplace instabilities for households. Most affected sector is retail companies which percent of financial difficulties more than doubled because of covid 19. Other parts of research indicates that households were more desperate for new real-estate and from figure shows that even previously unsold apartments were selling increasing overall housing market price.

Third finding method illustrate trends created by high-net-worth individuals whose finances wealth is managed by private bankers. Findings from this focus group interview creates clear picture testing methodical part on this thesis. High net worth clients financial stability has direct link with performance of stock market. Authors like Sun-Yong Choi which analyzed market during pandemic note that some markets were more efficient other were less but stock market itself was performing at record pace. This indicates that investments during pandemic were performing well. Sun-Yong Choi (2021). Assumption from methodical part create link between covid 19 and financial stability through workplace loss, demand drop, volatility. The main factor that affects these households is volatility as like mentioned their main part of investments portfolios are tied with stock performance. Volatility in pandemic was significant but overall had led to strong growth in wealth of these clients. Only small minority of wealthy households experienced financial difficulties regarding covid 19. These individuals have businesses which did suffer hurdles with strict restrictions on operations, loss production and overall layoff which had to be done due to operations closure. Main factors which assisted in overcoming these financial difficulties are identified. Large financial savings, loans from banks with significant compensation from government. Businesses like restaurants and hotels were indicated as most workable businesses which affected high net worth clients financial difficulties. Considering all factors from these findings it can be stated with confidence high net worth people did take advantage of pandemic instability and on average managed to overcome risks that could be associated with pandemic. These people had resources and time to grow their wealth even further.

Last research directed towards financial institutions also creates picture how banks were affected by covid 19 differently than other institutions. Overall ROA and ROE for banks followed similar trends as ones seen in financial soundness indicator. Only smallest bank out of three was able to retrain strong ROA and ROE returns which shows how efficient and quicker to adapt can smaller capital banks. What is also important to note that these banks have information not only on how they are performing but also overall paint a picture how whole Lithuanian economy works as these banks are main source of financing for fordable loans. Factors such as deposits in bank indicate that households are not certain about future performance of markets but also allow to address the fact that people have more liquid assets which on a recession could be used to overcome financial difficulties as these deposits up do 100 thousand euros are insured by government. As there are increasing amount of deposits with time banks are reducing returns on deposits and these returns have hit 0 percent at middle of 2022 showing that markets are full of liquid cash and less safe investments. Overall banking sector itself including top three banks been growing each year and their share of banking sector only grew. Authors like Asli Demirgüç-Kunt, Alvaro Pedraza, Claudia Ruiz-Ortega, indicate that central banks and other institutions allowed banking sector to overcome all difficulties by introducing extremely favorable conditions proving that banks can withstand Covid 19 induced problems Asli Demirgüç-Kunt, Alvaro Pedraza, Claudia Ruiz-Ortega (2021). This shows that banks even at covid 19 surge managed to overcome difficulties and can use opportunity to increase their reach and share in overall markets. All changes in these top three banks figures are corelated with covid 19 cases which indicates that these spikes do have impact in their operations but given the fact that these banks grew banks outperformed large part of other businesses.

CONCLUSIONS AND PROPOSAL

To finalize this thesis, it is important to state limitation which were indicated during creation. Main limitation for this research is the fact that information on households and companies financial statements depend on specific sectors for companies. Research on high-net-worth households has seven private bankers which do create general trend to base assumptions, but further sample size would highlight more nuance problems that these households have. Households are also affected differently depending on specific regions and data varies significantly even at one country. This creates generalizations which might reflect some trends more significantly like touring closure reducing overall countries financial stability but also can boost other regions as real-estate sectors become more elevated than the rest of the country. Other limiting factor is that information low to mid households financial stability can only be estimated in general sense as data about income for these households is inaccessible. Further research could be conducted to include changes in average net income of households in Lithuania to further cement findings that are made in this thesis.

1. Main factors that took effect on financial stability in literature must be split to multiple categories as financial stability is broad term. Parties which have effects on financial stability from literature review are, government bodies such as Lithuanian government, Lithuanian Central bank other governing bodies which have authority to issue guidance, restrictions, financial easing policies, and other instruments to tackle escalating problems on nationwide scale. Financial stability is shown in companies which create working places, create production, services, and other key components of functioning economies, with efficient companies comes stable financial markets allowing stable funding for further expansion of same companies that help to create financial stability for nations. Last notable party in financial stability which was noted in literature review are households. These players are responsible for workforce which is needed to operate companies but also have their disposable income which is used for same companies to draw main cashflows. Literature review overall has indicated that main factors that are important for financial stability are stable income for both companies and households, positive policies, and regulations to keep households from spreading virus and stimulus for both to spend and create healthy flow of funds. Effects that are created by lack of financial stability from literature review are these. Whole economies take a significant hit when companies have restrictions, ether ability to operate at full capacity or overall shutdown of whole operations create high volatility which itself creates less trust in financial markets. Less trusted financial markets create less efficient investment distributions halting expansion and no

workplaces creations. Previously operating companies scale down leaving more households without main income and this in return creates even further financial instability.

2. Methods selected to systemize and analyze findings for this thesis are as follows, analysis of financial soundness indexes using Baltic states as base countries. These countries allow horizontal as well as vertical comparison of similar economies which had to overcome same pandemic issues related with financial stability. Analysis of financial stability using in Lithuania analyzing data related with both companies and households performance. These data points are analyzed using visual characterization of trends that could be seen in data and horizontal, compering analysis which assists in identifying changes which occurred over pandemic period. Focus group interview which identifies high-net-worth private bankers clients, their financial stability over period of covid 19, their abilities to mitigate financial instability, actions which lead to successful wealth growth even during high volatility. The answer for from this focus group interview are analyzed using classical content and constant comparison analysis as this method allows to identify trends, certain words which create clear picture about high-net-worth households financial stability. Lastly to understand how some companies managed to overcome financial instability banking sector is selected and specifically top three Lithuanian commercial banks. These banks are analyzed using Lietuvos Bankas data on banking sector as it has summary of whole sector and creates wider picture on banks performance during pandemic. Data from these data sets is analyzed using vertical and horizontal methos, key value creating points are selected to pinpoint how much pandemic correlates with specific changes in banking sector.
3. To summarize findings, it is important to state that financial stability and covid 19 had correlation in findings. Methods used while analyzing financial soundness indicators show that covid 19 cases spikes created with waves had strongest effects on Lithuania, other Baltic countries had less severe drops in real-estate loans for commercial use and housing that Latvia and Estonia. Returns on investments also dropped from initial 2018 peek. These findings show that especially companies did not have high confidence in expansion during pandemic and this created more hesitancy to expand know the risk that it posses with possible further escalations slowing down businesses. Second part of research in financial stability involved financial stability in Lithuania overall. Data selected for research is created by Lietuvos Bankas and is posted yearly. Loans for consumption did see significant drop as more households selected other ways to spend their available funds indicating significant shifts in their habits. As for companies same trend was identified, loans for non-

financial institutions dropped and only loan sector remained growing, housing related loans. Other indicators also note that overall, all sectors were hit as of begging of pandemic showing significant increase in companies in selected sectors showing financial difficulties. Most effected sector with most financial difficulties is retail markets which doubled in percentage at start of covid 19. Third method highlights that high-net-worth households managed to overcome financial instability. Main factor which allowed majority of these people to overcome difficulties was high stakes in financial markets which had significant volatility but overall seen unprecedented growth during pandemic. Wealthy households only had financial difficulties if they were involved in businesses which got affected by government response to covid 19, such businesses are mainly restaurants and hotels. Private bankers note that key strategy in overcoming volatility for these clients was decision to hold their positions and this so far proven to be successful growing these households significant wealth increase and stronger financial stability than prior covid 19. Lastly analysis on companies that are expected to overcome unprecedented risk events, banks indicates that these financial institutions managed to grow their wealth even peek covid 19 surges as growth of top three selected banks remained for whole selected period. Other notable point is that clients of these banks significantly increased their deposits showing that public had less trust in financial markets as high volatility was expected to only increase.

Proposal is based on all research and is formed like this. To sustain financial stability households and companies must retain stable sources and consider actions which could be taken to mitigate risk related to loss of main income source. For households such action is investment in financial markets as they were strongest performing aspect of stability. Other actions which were used by banks is strong reliance on governing bodies for assistance. Financial stability requires not only short-term solutions but also long-term steps by which worst case scenarios can be evaded. Governing bodies might aid companies and households, but these might not be available at critical moment. Also, it is important to identify performing sectors during pandemic and take active actions to take advantage of created opportunities.

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THE IMPACT OF THE COVID-19 PANDEMIC ON FINANCIAL STABILITY

Dominykas Visockas
Master Thesis
Finance and banking (English)
Faculty of Economics and Business Administration, Vilnius University
Supervisor Doc. Greta Keliuotytė-Staniulėnienė, 2023

SUMMARY

72 pages, 15 charts, 11 figures, 85 references.
The main purpose of this master thesis is to determine households and companies' financial stability during Covid 19.
The Master thesis consists of four main parts: the analysis of literature, methodical approaches analysis, research analysis with conclusions and recommendations.

Literature analysis reviews overall financial stability question, how it is understood in peer research and what was covid 19 for financial stability, how pandemic can affect economies on macro and micro levels. Ways by which households and companies tackled these difficulties.

After literature analysis four types of methods were selected to tackle financial stability question. Data analysis from Lietuvos bankas and IMF, focus group interview analysis of high net worth bank clients, financial reports analysis of three major Lithuanian banks. Correlations were also used with covid 19 cases which allow to find direct connections to pandemic. Main assumption from methodology is formed by author with figure 1 which assumes causes and effects of covid 19.

The research followed with such findings covid 19 had tangible effects on almost all economies which experienced spikes in covid 19 cases. Economic sectors such as retail sales companies experienced strongest volatility in financial difficulties as there were forced to close due to fact, they are not essential. Other notable facts were identified such as financial stimulus to economies was effective at stopping non-performing loans spiral from start to end of covid non-performing loans amount only decreased and it was most notable in Lithuania with 83,33% decrease since 2018. Focus group interview indicates that high net worth households heavily benefited from financial markets turmoil invested in stocks and real-estate and holder their assets during market downturns overcoming volatility. Their financial stability mainly improved even further.

The conclusions and recommendations were identified by author with these findings, as it was noted in literature every aspect of economies was affected by pandemic but not all sectors were suffering from it, households and companies which identify these opportunities could benefit from this strong performance but also to create plan in such unprecedented situations.

COVID 19 PANDEMIJOS ĮTAKA FINANSINIUI STABILUMUI

Dominykas Visockas
Magistrinis darbas
Finansai ir bankininkystė (anglų kalba)
Ekonomikos ir verslo administracijos fakultetas
Vadovė Doc. Greta Keliuotytė-Staniulėnienė, 2023

Santrauka

72 puslapiai, 15 diagramų, 11 lentelės, 85 literatūros šaliniai.
Pagrindinė šio magistrinio darbo esmė yra nustatyti namų ūkių ir įmonių finansinį stabilumų Koronos 19 pandemijos metu.

Magistrinis darbas sudarytas iš keturių pagrindinių dalių: mokslinės literatūros analizės, empirinės tyrimo metodologijos, empirinių rezultatų analizės ir išvadų su pasiūlymais.

Mokslinės literatūros analizė žvelgia į finansinio stabilumo klausimą, kaip kiti moksliniai straipsniai identifikuoja Kovido 19 poveikį finansiniai stabilumui. Šioje dalyje išskiriama kaip ekonomika yra paveikiama makro ir mikro lygmenyje. Būdai, kuriais remiantis namų ūkiai bei kompanijos tvarkosi su šiais iššūkiais.

Remiantis literatūros analize autorius išskiria keturis empirinius metodus, kuriais remiantis buvo išanalizuojama finansinio stabilumo tema. Duomenų sisteminimas remiantis Lietuvos Banko bei tarptautinio valiutos fondo duomenimis. Koreliacijų identifikavimas, kitų finansinių rodiklių analizė yra nustatoma metodologijos dalyje. Iš šių metodų yra keliama hipotezė Kovido 19 efektai ir pasekmės ekonomikai.

Iš autoriaus atliktų empirinių tyrimų buvo identifikuota, jog Kovido 19 pandemija turėjo labai stiprią įtaką finansiniui stabilumui visuose šalių ekonominiuose sektoriuose. Sektoriai kaip prekyba patyrė vieną didžiausių sunkumų įsigaliojus apribojimams. Šie apribojimai buvo stipriausiai nes šios įmonės skaitėsi ne būtinos. Kiti tyrimai autoriaus tyrimai parodė, jog kiti ekonominiai rodikliai gerėjo, neveiksnios paskolos visais Kovido 19 pandemijos metais mažėjo ir tai aiškiausiai pasirodė Lietuvoje su 83,33 procentų sumažėjimo žiūrint iš 2018 metų perspektyvos. Fokusuotos grupės interviu metodas išskyrė aukšto finansinio lygmenio namų ūkius, kurie ne tik išlaikė finansinį stabilumų, tačiau ir išaugino savo turtą pandemijos metu. Investicijos į akcijas, nekilnojimą turtą sukūrė daugiausiai vertės šiems asmenims.

Autorius išskyrė šias išvadas ir pasiūlymus, kaip ir buvo identifikuota literatūros sąraše, pandemija turėjo įtakos visiems ekonominiams sektoriams. Tačiau ne visi sektoriai patyrė finansinį nestabilumą. Autorius rekomenduoja namų ūkiams ir įmonėms identifikuoti sektorius, kurie efektyviai naudojasi pandemijos situacija ir galimybėmis bei sukurti planą nutikus netikėtumams.