



## COMPETITION LEVEL ANALYSIS FOR THE FINTECH SECTOR IN TURKIYE COMPARED TO GERMANY

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### ABSTRACT

**Purpose-** This study's objective is to observe Türkiye's fintech market structure by their competitiveness results. To get a better observation Türkiye compared with a fintech-developed country as Germany. The inconvenient definition of fintech caused this study to examine 4 massive fin-tech sectors. Especially current situation of the financial-technology market there are several branches. The study refrains from the engineering-intensive branches to serve its purpose. The study includes; Payments, Lending, Personal Finance, and Insuretech branches. We expect to observe the competitive dynamics for several branches.

**Methodology-** The study selected the "entropy index" as a method. The entropy index shows the market depth for related sectors. It can be defined as a density analysis. We can make the index with at least 5 observations. However, the increase in the observation level causes the low-variance level index results.

**Findings-** The study made its index by the top ten firms by their sales revenue level. The study observes the market in 5 branches. The conclusion part supplied 5 different density results. In that situation, observations can be seen more specifically for the market. The study used the entropy density index to observe the competitiveness level of the market. Results were multiple because the branches were divided from the sector. Every branch has its dynamics. On the Türkiye side, we expect fewer companies than in Germany. However, in the personal finance sector, we can observe the competitiveness levels are close. However, in this study, we can also observe high gaps between the sectors of insurance tech and lending. This study did not have the purpose of determining the factors behind them but the study tried to give political suggestions.

**Conclusion-** The density level for lending and personal finance sectors can be compatible with a high-fintech level company. For the insuretech side, companies value and numbers are lower. The payment sector has more technology than the other sectors but the number of firms are lower than in Germany. We were expecting the competitive structure are not improve in Turkey because of the low-quantity firms. At some branches, we obtained the results that support this expectation. However, the view of the study observed that some branches has low competitive market structure when compared the Germany. But at some points, there are massive cliffs between the two countries. We can attribute the situation to the habits. The habits of technology meant. Especially on the insurance side, Turkey should improve itself. Türkiye should be getting more investment, subsidies, etc. in the sector of insure-tech and payment sector. Because their competition level is a risk to the country's market structure. This study includes no detailed politics but suggests to subsidies and incentives from the government side. Government should support and encourage the new-entry firms or entrepreneurs for the sector of fintech.

**Keywords:** Fintech, fintech demand, fintech factors, tech fin, technological progress, behavior finance

**JEL Codes:** F65, G15, G22, L11, L22

## 1. CONCEPTIONAL FRAMEWORK OF FINTECH

At the anthropocene age technology had the incredibly motion shiftwards. That technology affects the real sector which, industry, agriculture, services sectors etc.. After the affections for real sector, financial tools has affected for after all that technology. Evolution says the weaks eliminate by strong. This elimination for economy is clearly technology. When this technology combine with financial services, fintech borns. Making traditional banking/finance services with maximum technology named fintech. Fintech is a combination not an invention for humanity. That combination has gave humanity a comfort that no century gives for a thousand years. (Schueffel, 2016, p.1-23)

### 1.1. Sector of Fintech's Structure

When the introduction occurred between the sector of finance and technology so many branches has borned. Each fractions have a different purpose and service capability for the demand side of the sector. As a structural change we can observe both

traditional and financial technology sector has similar obligations with each other. As a services perspective we come across with; digital banking, mobile banking, payment services, digital currencies and coins, wealth and assets managements and consultants, personalized financial consultants, technological insurance services (known as Insure tech) and innovation firms that creating new Technologies for financial services by R&D process (known as TechFin firms). However we still can't have a point of idea about financial technology branches. Evolution's destruction effect creates and demolishes some sector at the same time. As a conclusion we can say the sector of fintech has a rapid growth and structure. (Schueffel, 2016, p.1-23).

### **1.2. Fintech Sectors Included in this Research**

Taking the all branches and co-sectors for fintech as a base for this study can give us a confusing conclusions. Study pays attention the branches with their different financial tools. Branches that have more technological improvement can be more seductive for the individuals. On the another perspective behavioural finance pushed this study into these sectors. To make a categorize we can have digital banking and payment sector as a services factor. Because payment services spread all the society base for the innovation against traditional payment systems. Personal finance as a management to managing our portfolio. Lastly it has to be security factor for insuretechs. From the origin of humanity, security is always the physiological factor for us. To sum up his Study includes; Digital banking, Payment services, Personal Finance, Insuretech as a base. We can obtain with each sector for a individual behaviours against the sector of financial technology.

### **1.3. Fintech for Today**

Fintech has a complicated chronological history. We can't be sure about the origin of fintech. In the 18th century, telegrams were the most technological factor in the technological finance ruritanian. After the mobile finance, we can divide the rooms for two. Because 19th-century's mobile banking and millennium mobile banking have different motions and structures for each other. However, today has a different technological context in a way unlike any other time. Especially after the Covid-19 crisis, technological finance systems gained society's perception. Perception has an enormous importance for the sector of finance and also the financial technology systems. Both sector know their customers as deposits. (Boot, et al., 2021)

Many studies have tried to classify the history of fintech and many historical joints have been mentioned on this subject. Interoceanic cables, which were laid towards the end of the 19th century to facilitate communication and transfers between countries, can be considered as the starting point of technology for the financial system. Swift systems, which provide online banking and foreign exchange exchange opportunities all over the world, have opened a new era in digital banking. Today, financial technology systems help provide enormous convenience to customers by restructuring traditional banking products with high technology. In today's finance, customer movements and behaviors can now be managed and observed much more easily. This makes serious contributions to the literature of schools such as behavioral finance. (Çalışkan,2021)

## **2. LITERATURE REVIEW**

Finance sector adapted the technological improvement more easily than other sectors. On that perspective financial growth rates can be enormous sometimes. To easier the traditional banking services gave the fintech sector more optimization and productivity on the both demand and supply side. However fintechs can be into a hard situation when entering the market sometimes. Such as Traditional Banks that merging with tech firms (Lestari and Rahmanto, 2021). On the global market fintech sector has adjusted 306 billion dollars share (Katılım finans, 16.01.2024). On the Türkiye's perspective, technology of fintech and the perception of the society had a delay when we compare with other countries. Concept of fintech includes some sector in Türkiye such as; Digital payment services, insurances, mobile banking etc. to build an effective market. In 2023's annual reports Türkiye has 1,6 billion dollars investing volume for startups or board firms already. That annual values, put the Türkiye 10th place in the Europe scale. (Turkish Presidential Finance Office, 2023) Also on the another perspective Türkiye has about 0,30 growth rate as a whole sector. That number can be understandable if we noticed Solow's growth model due to the transaction dynamics. On Germany's sector perspective of fintech, the country has a enormous investing rate. Germany has lots of R&D and intelligent intensive labor fort his sector. Technology has almost perfectly place in the country with digital payment habits that spreaded along the citizens with a non-discriminate age scale. Also Germany has the 3rd place for almost 11 billion dollar fintech investment rates compare with all of Europe. The country has plenty of unicorns and decacorns itself. (Turkish Presidential Finance Office, 2023)

The study delves into the behaviours from 102 participants with their several level of financial literature levels. Study calculates their fintech using ability for each participants. Study found that, financial technology sector is understandable but the sector needs more training and educational system to spread the fintech tools to the society-base. Another perspective from the study is the competition level for countries. If we have a cumulative road from society to the country, we can say, countries that have less financial tools (technological) literature level or less trainings will be doomed to become a underdeveloped country in the competition enviroment (Fettahoğlu and Kildize, 2019)

The Academical Study aims to infrastructures to make an appropriate using the financial tools along the countries. Infrastructure factor can be a barrier for competition level of between financial technology firms. As a perspective of the

countries, infrastructures can affect the using-knowledge of financial technology tools for the citizens. Countries that have a low level of infrastructure for the fintech creates a low endowment for financial technology ability to use (Bilgel and Aksoy, 2019).

Observes the creation in the financial technology sector called as innovation. The innovations create a depth that influence the demand and supply variables. This influence competition noticed by firms that want to be a best selection in their sector. That article listed the factors that affect the both supply and demand sides. Some government policies which can be counted as regulations, also some cultural demographic structures affect the demand side of fintechs. At the supply side perspective changes in financial or macroeconomic fundamentals, technology based growth has a affection of supply (Schindler, 2017).

The parliament study observes and reports the competition level in the financial technology sector. Study obtains 7 co-sector as a branches of financial technology. After the classification those 7 sector has taken as a fundamental of the competition analysis. This analysis report has a key Word that "change". Changing in the infrastructure and economical fundamental affects in three way as; new technology is changing the system of services completely, new technology is changing the demand side as financial tools users, new technology is changing the way of how the financial services will supply? (Competition issues in the Area of FinTech, European Parliament Report Archive, 2018)

In this study financial Technologies are discussed as a government perspective and European Regulations. As a context of PSD2 directive that creates by the European Council to regulate the payment services observe as a barrier. We can observe that government contributions to make the sector of fintech more controllable and obeyfull for the country's benefits count as a factor that decreases the competition level (Vezosso, 2018).

The study, financial technology sector's competition level analyze by the perspective of regulations and government policies. If we have a specific part of the study we can accept the government policies as a positive externalities. Government regulations help the sector of banking to spread their risks. In that way banking and its technological branch can be supported by regulations (Milne, 2019).

This study supply a chronologic cumulative history about financial technology. When financial technology development occurs there are some new competition factors about the sector. Increasing technology in fintech causes a more fierce competition environment for the firms. This development in the technology keeps the companies stay on their toes. Also in this study includes that technology provides the firms to make a new agreements with different sectors. In this way banking systems and businesses become more relatively with eachother (Körpe, 2021).

Study includes two different dynamics in the sector of finance in a perspective of sustainability. Those different Dynamics can't be comperabe with eacother by competition indexes. Financial technology services has a growing scheme includes technology. In that way when the technological develation occurs, there is a new services in financial technology. Within a extreme situations traditional bankings can't be a securefull systems to the citizens. However fintech industries in the extreme situations can be hacked by international hackers. If we contains a merging between tradtional and fintech sectors. We can observe the traditional banks are merging with financial technology services to create a sustainable path (Suprun et al., 2020).

In this study we can observe a different perspective in the financial technology services' competition level can be determine by the innovation sector from outside the finance sector. When there is a growth in technological innovation sectors by creating a less comperativity causes a increasing the market gap as a financial technology institutions. We can accept the special patents in services sector as a factor creates a cliff between the sectors (Caragea et al., 2023).

This study taken China as a base. Countries like china have a enormous population and labor intensive come across with a diffiicult financial system. Creating and producing technology related to fintech can be a liberization path instead of the traditional banking system. Study obtains a perspective from both individuals structure and the firms with making progress with banks. Both side prefers the fintech competitors instead of traditional banking product and services. That causes to move the competition platform only for a one sector called fintechs (Buchak et al., 2021).

There is a disinformation about the definitions of fin-tech and digital banking. Digital banking is more like the sectoral phenomenon. This study aims the effect of fintech integration process to the digital banking and consumer demand side. The study includes some countries to observe the effects. In conclusion increased financial services due to the fintech integration creates more competitive environment for the sector of fintech. (Aloulou et al., 2024)

At some studies, we can observe the effect of AI in competition terms. AI has a massive position in the finance sector. After some interdisciplinary performance between finance, engineering and economics fintech was born. In the current situation of the market, the AI level may affect the competition level for the sector. AI should be adopted in all sectors, however at some industries or sectors AI has a more attractive perspective than the others. Finance is one of those sectors. AI services, chatbots, personalized finance with risk management have a serious affect to stand out among other companies. Services of the finance sector should be more privately and special advice, AI will make it happen. After that it will change the competition equilibrium in the market. (Agrawal, 2024)

### 3. ANALYSIS OF FINTECH COMPETITION LEVEL

The table 1 includes both Türkiye and Germany's fintech companies listed in 4 sectors. Company's are listed for their market share for each sector). Also there are fintech firms from Türkiye in the table 1. We included the firms that build their firms in a based from in their countries for overwhelming majority in some cases. But there are some special cases too like some payments fintechs in Germany. As an example Previsie is not a Germany-based firm but it has a great trade volume that we can't side eye in the country. In that way we can describe the firms as "have an important sales revenue number in the country".

**Table 1: Fintech Firms Both Global and Türkiye**

LENDING FIRMS	PAYMENT FIRMS	PERSONAL FINANCE FIRMS	INSURETECHS
AuxMoney	SumUp	Trumid Financial	Clark
N26	Previsie	Tink	Coya
SolarisBank	PayWorks	Yodlee	OttoNova
Raisin	Shopkick	Gravity Payments	Friendsurance
Finleap	İyzico	Clic	Sigortam.net
Mambu	PayCore	Parasut	egaranti
Papara	Ininal	FigoPara	Wyseye
Tarfin	Paym.es	KolayBi	Fonradar
MobileExpress	Pozitron	ManiBux	SmartIR
Figopara		Finmaks	
Beemo		Lumnion	

Lending for decentralized finance is one of the key instruments for the financial technology firms. In this study I used the fintech firms have a bigger portion for lending services than other instruments. We take the numbers from several sources such as company balances, public interviews etc. Those number show us a how much revenue did the company get this year from their lending services. Biggest volume in this table belongs to N26. Second is the Mambu for about 104 million dollars (\$). Auxmoney is the another lending fintech from the Germany had about 54 million dollar revenue from the lending services. Solaris Bank on the 4th part of the table as a sales volume. "Raisin is another fintech lending firm from Berlin. On the last firm is Finleap from another Berlin-based fintech company that has a revenue of about 25 million dollars (\$).

**Table 2: Lending Firms' Sales Revenue in Germany**

LENDING FIRMS	Sales Revenue (\$)
AuxMoney	53.800.000
N26	300.000.000
SolarisBank	38.000.000
Raisin	28.600.000
Finleap	24.800.000
Mambu	104.100.000

Papara is the biggest lending fintech in Turkey and has an enormous sales value when we compare the firms with each other. Second firm is the Tarfin. Tarfin make lending operations but their aim customer profile is the customers in the agriculture sector. Tarfin has offices almost every city in Türkiye. Rest of the three financial technology firms have almost the same value between each other. But their volumes are so low to be compete

**Table 3: Lending Firms' Sales Revenue in Türkiye**

LENDING FIRMS	Sales Revenue
Papara	28.600.000
Tarfin	17.300.000
MobileExpress	2.200.000
Figopara	2.000.000
Beemo	2.000.000

Mention to the description under Table 1. We have some non-domestic firms in Table 3 but the firms are great value for the result we are looking for. SumUp has an enormous value if we compare with other firms in the payment sector. On the second place there is a Danish fintech firm Previsio with 35,3 million dollars sales revenue. Another non-domestic firm Payworks (U.S.) is on the 3rd place with 27,6 million dollars revenue. Last firm is Shopkick with 24,2 million dollars in revenue. On the Türkiye side, İyzico is the biggest payment firm in the sector with a revenue value of 51 million dollars. Paycore with 20,3 million dollars in revenue has a second place. İnal is another financial technology firm in payment services. The last two firms in Table 3 have a depreciated value when we compare them with other firms. The last one is Pozitron which is also another payment services firm in Türkiye.

**Table 4: Payment Firms in Türkiye and Germany**

PAYMENT FIRMS	Sales Revenue	PAYMENT FIRMS	Sales Revenue
SumUp	159.000.000	İyzico	51.000.000
Previsio	35.300.000	PayCore	20.300.000
PayWorks	27.660.000	İnal	13.500.000
Shopkick	24.200.000	Paym.es	3.300.000
		Pozitron	1.500.000

Personal finance is the evolution of the technology and traditional banking counter system. In this sector we can have special investment recommendations, portfolio management etc. In this sector the biggest value in Germany is Tink AB with 157 million dollars (\$). On the second place belongs to Yodlee. Gravity Payments is on the 3rd place with 69,1 million dollars (\$). Cline with 59,7 million dollars sales revenue. Lastly there is a personal finance services firm named "Trumid Financial" with 33,3 million dollars (\$). On the other side Türkiye has some fintech firms that have personal finance services for their customers. But in Türkiye there are some nominal firm advantages on the perspective of "Parasut". Parasut on the first place with 15,6 million dollars (\$). FigoPara and Finmaks in their table with almost equal shares. Lumion with 3,5 million dollars sales revenue on the 4th side. FigoPara and Manibux have the same value in Table 5. But if need to separate Manibux's customer base is children who are under 18 years old. Manibux gives the parents a "personal child finance" services with moneyboxes.

**Table 5: Personal Finance Services Firms in Türkiye and Germany**

PERSONAL FINANCE FIRMS	Sales Revenue	PERSONAL FINANCE FIRMS	Sales Revenue
Trumid Financial	33.300.000	Parasut	15.600.000
Tink AB	157.200.000	FigoPara	2.000.000
Yodlee	89.100.000	KolayBi	5.200.000
Gravity Payments	69.100.000	ManiBux	2.000.000
Cline	59.720.000	Finmaks	5.000.000
		Lumion	3.500.000

When the financial technology firms develop the system for a more technological insurance systems, insurtechs are born. Demand side as a firm wants to add their nominals to the insurtechs and their services to improve their effort. (Cortis et al., 2019, p. 71-85). In Germany Clark with 41,1 million dollars sales revenue on the first place. OttoNova as a Canadian firm has a serious impact on Germany Friendsurance with 20,7 million is on the 3rd place. Coxa with a depreciated value when we compare with other firms on the last place of the Table 6.

On the Türkiye side, Sigortam.net has a overwhelming value for the Turkish insurtech market. Also Egaranti (not related with Garanti Bank) is another startup to firm insurtech. Rest of the 3 firm has a value under the 1 million dollar. FonRadar with 250 thousand dollar. Wyseye with 211 thousand dollar. Lastly SmartIR with 158 thousand dollar as an insurtech firm.

**Table 6: Insurance-Tech Firms in Türkiye and Germany**

INSURETECHS	Sales Revenue	INSURETECHS	Sales Revenue
Clark	41.100.000	Sigortam.net	8.000.000
Coxa	3.500.000	egaranti	1.000.000
OttoNova	34.300.000	Wyseye	211.000
Friendsurance	20.700.000	Fonradar	250.000
		SmartIR	158.000

Entropy index has a result between 0 and  $\log_2(n)$  (n: number of firms). If our result closes to zero, that means we have a market with monopolistic behaviour because of the high density. However if the result closes to the  $\log_2(n)$ , in that way we have a competitive market with, low density. In the lending section we include 5 lending financial technology firms in our analysis. In that way our critical value is "2,32". Lending firms in Türkiye has a cooperative market structure. For payment sector we used 5 firm so our critical value has the same amount with the lending sector. Entropy in payment sector shows us the "1,27" result. Which is we can call this sector as a moderate-monopol or oligopol. In personal finance sector we used 6 firm. In that way our critical value raised to 2,58. Entropy index for 6 personal finance firm is 2,17 which means it is a highly competitive market structure. Also there are 5 insuretech firms in our index model. For 5 firm critical value is still 2,32. Our index result 0,91 shows us a highly non-competitive market structure in insuretech market.

**Table 7: Entropy Index Results for Türkiye**

TURKIYE	Entropy index result	Critical Value $\log_2(n)$
Lending	1,55	2,32
Payment	1,27	2,32
Personal Finance	2,17	2,58
Insuretech	0,91	2,32

#### 4. ANALISE THE FACTOR THAT AFFECT THE FINTECH COMPETITION LEVEL

The entropy index allows us to conduct an inter-company sector density analysis by looking at the product revenues of the companies included in the analysis. Unlike in the N index, entropy includes more firm profile within. Calculating system for entropy has a logarithm base. Results are changing from 0 to  $\log_2$ 's term. We calculate the logarithm term like;  $\log_2(n)$ . In that formula "n" represents the number of firms. In a chronological timeline to calculate the index, we need to find the firm's share compared to whole market.

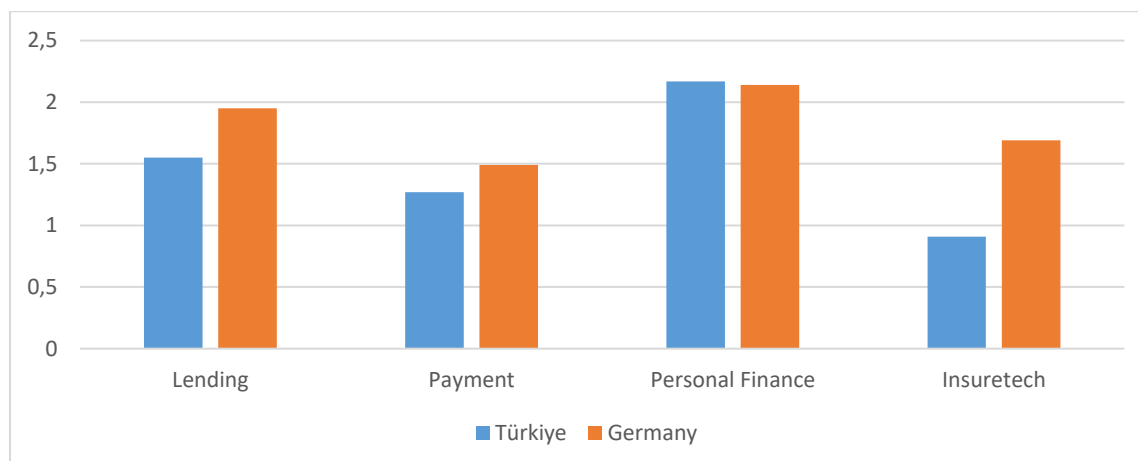
$$E = \sum_{m=1}^N X_m \log_2 \frac{1}{x_m} \quad (1)$$

To find the market share we divide the firm's sales revenue with the total revenue of the whole market. After that we can represent the share of firms as "  $X_m$ ". For the logarithm value we can write this equation like 1 divided by "  $X_m$ ". Lastly the logarithm value for the index will be like this;  $\log_2\left(\frac{1}{x_m}\right)$ . For entropy index we multiply  $X_m$  with  $\log_2\left(\frac{1}{x_m}\right)$ . For every firms. Interpretation for the index will be like this; if the result is getting closer to zero then we can interpret the sector as a monopolistic behaviour. If the result is getting closer to  $\log_2(n)$ , then we can say the sector has a competitive market.

**Table 8: Entropy Index Results for Germany**

GERMANY	Entropy index result	Critical Value $\log_2(n)$
Lending	1,95	2,58
Payment	1,49	2
Personal Finance	2,14	2,32
Insuretech	1,69	2

There are 6 lending firms in our index, so critical value for lending is 2,58. We can say lending firms in Germany has a competitive market structure. After that for payment sector with 4 firms our critical value is 2. Result is payment sector has a non-competitive market structure. We have 5 personal finance firm in this analysis. So our critical value for personal finance sector is 2,32. Result shows that personal finance sector has a competitive market structure. We added 4 insuretech firms in our index and results showed us Insuretech in germany has a competitive market structure.

**Graph 1: Entropy Results Comparing between Türkiye and Germany**

In graph 1 we must consider the critical values to make a better interpretation. The study found the critical values for each sector in Table 7 and Table 8 for your consideration. In that way lending sector in Türkiye has a lower competitive structure than Germany. In the payment sector, the gap between in two countries is getting wider. Personal finance provides a more competitive environment. On the insure tech side we can observe the biggest gap for all the sectors.

#### 4. CONCLUSION

If we had an arrangement to write the firms as a factor, we can get 4 factors for each sector. After that we can take those factors as a key to find the determiners in financial technology competitions. Lending is an fintech service's fundamental to build a decentralized finance structure globally. Lending can be represented as a factor of "service" as a fintech competition factor. Main thing in the description of "service" is comes from the opportunity cost. When the traditional banking's lending system didn't preferred financial technology firms comes with P2P etc. lending systems.

On the other hand payment sector in financial technology firms can represent the "easy processing". Compare with traditional banking, fintechs' biggest revaluation is having the easier ability to using process. On the household side it can be includes taxes, fees, bills, tickets etc., also it can be using for international shipment payments, trading fees. Personal finance is another key sector for fintech. If you don't believe in sapiens advisements for your financial portfolio, AI can help that to managing yours.

The personal finance sector can be represented as "management" factor. There can be lots of fractions fort his sector like financial management for elder people to unborn. Table 1 shows the financial technology firms getting place in this study. On the Türkiye's Personal Finance section we can observe the "Manibux". Manibux is a great example fort his study. Manibux gives the children a financial path with their pocket Money. For creating a balanced portfolio, consulting for investments, valuation operations, stock portfolio, Exchange operations etc. we use the personal finance instruments as a individual or firm. But financial technology gives us a different perspective with AI-based financial consulting. AI uses some complicated ratios to make a sustainable forecasts.

After that, it creates a portfolio to valuation our financial capital. Lastly, the insure tech firms one of the fintech's omen. We can give the insure tech firms as a factor name of "security". Insurance technology-based firms intends to make integration for traditional insurance systems into technological-based systems. However, the sector of lending firms in Türkiye's results has a less comperative when we compare with Germany. Germany has 100 basis points more competitive than Türkiye. Lending sector can be bound as trust without other ratios. Türkiye's economical structure and crysis enviroment can be the creation of less-competitive market.

On the other hand Payment sector has the competitive market results for both country. Especially after the Covid-19, digital payment systems has a big role in our life standarts. On the nominal perspective Germany still have the more competitive enviroment on the payments sector more than Türkiye. But in this sector there are no enormous cliffs between two country. Other sector from fintech is Personal Finance. Personal Finance is the most competitive-environment sector when we compare with other sectors. Both Türkiye and Germany has the almost same bu on the critical value side there can be change about 0,2. But for entropy index they both still have the competitive market structure with low density. On the insuretech side observation is more clearly. Comparing with Germany, Türkiye has a enourmously high density in insuretech sector. Biggest firm in the sector eliminate the other firms with its market share. Insurancetech firms in turkey can have sustainable and big portion funds for their company, however one firm's share is ruined the competition enviroment. There are so many

factors to explain those cliffs between two country. That topic can be the question for another study. But Türkiye delayed their financial technology investments lately. Currently it's become a hard problem to catch other financial technology firms' share. Although individuals prefer technology-based products in their financial transactions, especially after the pandemic, the perception of fintech should have an important place in the society's perspective for sectors other than the payment sector. On the Türkiye side, insuretechs are the good examples for that prediction sentence. It was obvious that Germany would show a significant victory in the comparison between Turkey and Germany, which has the 4th largest fintech infrastructure in Europe today. However, such a study was essential in order to see some of the values that should stand out in a society like Turkey, where financial technologies have not fully spread to the society and fintech awareness has not been formed. According to growth theories, countries can converge or even surpass their competitors in the financial technology sector through R&D efforts. However, for all these, a serious technology-based payment system must first replace the traditional payment instruments in society. When society accepts such a revolution, the competitive environment of financial companies will increase even more due to increasing demand.

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