Liquidity of the Financial Market and the Financing Decision. What Relation? Case of Kuwaiti Financial Market(2011-2018)

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Abstract :
This study aims to measure the relationship between liquidity of the financial market and the financing decisions in the industrial companies by econometric method, throughout applying the study on twenty four companies listed in the Kuwait financial market from the period 2011 to 2018 Using the panel data and stata 16, the study model includes three models fundamental depending on the types of the financing decision, which is represented in ordinary shares financing, long term loans financing and retained earning financing.

the study have found that the level of liquidity of the Kuwait financial market play the mainly role in choose the financing decisions of the listed industrial enterprises , where the higher the liquidity of the Kuwait financial market leads the enterprises to finance through ownership(47,82%). However, if the liquidity of the Kuwait financial market decreases, it leads the enterprises to finance through long-term loans(27,48%) and retained earnings(21,43%).

***Key Words*:** liquidity, financial market, ordinary shares financing, long term loans financing, retained earnings financing.

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Introduction :

A big attention has been attributed to the topic of financing economic companies from researchers, especially in the field of financial management, as it represents the most important pillars that contribute to its growth and development, as it provides it with funds that guarantee the continuation of its activities. Therefore, companies must take a rational financing decision through a good assessment amid the available funding sources and choose the most appropriate one to cover their needs, as the company resorted to financing its needs from internal financing sources, especially retained earnings, and external financing sources from financial institutions and financial markets, as the financial markets have a fundamental role in financing companies, through the latter offering financial tools in the financial markets in order to obtain sufficient funds. However, this requires high efficiency, effectiveness and high liquidity in the financial markets. The more the movement and activity of the financial markets, the faster the stock trading in the financial markets, and consequently the possibility of obtaining adequate financing through several options available to the company.

The degree of liquidity of financial markets plays an essential role in shaping the financing decision in companies. The more companies raise their securities in active markets, the faster the speed of trading of these securities, thus ensuring the company financing through them. Nevertheless if the market is inactive, the company is forced to resort to borrowing through bank loans and self-financing, and therefore this is what affects its financing decision.

From the above, we have the following problem: **How does the degree of liquidity of the Kuwait financial market contribute to the financing decisions in industrial enterprises?** In order to answer the problem, a set of hypotheses was developed.

Hypotheses:

- First hypothesis: the high liquidity of the Kuwait financial market leads enterprises to finance through ordinary shares.
- Second hypothesis: the low liquidity of the Kuwait financial market leads enterprises to finance through long-term loans.
- Third hypothesis: the low liquidity of the Kuwait financial market leads enterprises to finance through retained earnings.

Methodology and tools:

in order to achieve the aims of study we used the econometric method to test the relationship between financial market liquidity and financing decision, also we used the panel data and stata 16.

Previous studies:

A study by Iman Abdel-Muttalib Hussein Al-Mawla (2011), titled: Indicators of measuring the liquidity of the stock market and its impact on economic growth. It aimed to determine indexes to measure the liquidity of financial markets represented in (market value to GDP, trading value to GDP, turnover rate) and to test the relationship of these indexes with economic growth represented by the rate of GDP growth. The study sample was a group of Arab stock exchanges for the period from 1994 to 2007. She used The Arab Monetary Fund to collect data; and to test the relationship simple linear regression was relied on. One of its main results was in its standard study that the liquidity provided by the stock market does not exert a significant effect on the economic growth of the countries under study. (Imane abdel muttalib, 2011)

Mariana Khapko's (2009) study titled: The Impact of Financial Market Liquidity on Corporate Finance Decisions. The study aimed to examine whether the liquidity of the stock market affects the financing behavior of companies, where the researcher expected that the degree of liquidity associated with the company’s shares will affect the targeted leverage and capital structure adjustments that the company undertakes. In order to determine the effect of stock market liquidity on corporate financing, liquidity measures suggested by asset pricing literature were used as brokerage costs in transactions faced by investors and linked to institutional capital structures. Faced with the need to attract new capital, companies are likely to issue debt in a less liquid financial market, and thus market imbalances play a role in the corporate financing option. (Mariana, 2009)

Study of Tung Lam Dang, Hai Ly Ho, Chi Dzung Lam, Thanh Thao Tran and Xuan Vinh Vo (2019) titled: Equity Liquidity and Capital Structure. Relying on the assumption that the stock market provides useful information for decision-making This study examines the effect of financial market liquidity on the company's capital structure decision, and analyzed whether this effect varies from country to country according to the different institutional environments. Using comprehensive international data, 19939 companies in 41 countries during the period 2000-2010 have presented the research paper with two main results:

First, companies with high liquidity in the stock market tend to have less leverage, and secondly, countries with strong institutional environments are characterized by a negative relationship between stock market liquidity and leverage. (Tung lam, Hai Ly, Chi Dzung, Thanh, & Xuan, 2019)

The study of Andreas R. Dombret, Daniel Foos, Kamil Pliszka, Alexander Schulz (2018) titled: What are the Real Effects of Financial Market Liquidity? The study aimed to analyze the effect of financial market liquidity on bank lending in the Euro area in various sectors during the period 2003-2016. The results of the study as a whole show that the liquidity of the financial market is positively related to the size of loans and is negatively related to credit differences. During the 2007-2009 financial crisis and the European debt crisis, liquidity of financial markets decreased and bank lending was reduced and banks required higher credit margins. It is important that the liquidity of the financial market has an asymmetric effect on bank lending, the negative effect of the decrease in the liquidity of the financial market is more important than the positive impact of the increase in market liquidity, and this is especially true for corporate loans where the terms of lending will be constraints in times of poor liquidity in the financial market. (Andreas R, Daniel, Kamil, & Alexander, 2018)

I. Theoretical literature

1. Financial Market Liquidity concept

1.1. Definition of financial market liquidity

The financial market provides the following three main functions: price discovery, low transactions costs and liquidity (Frank j, 2009, p. 113), the latter is defined as the ability to trade securities at a low cost and with little impact on the price as well as that liquidity gives investors the flexibility to sell their properties when needed, and liquidity creates greater value for trading activities in the short term than trading in the long term. (Ayed & Mohamed Hamdane, 2014, p. 180) There are those who see that liquidity in the financial markets facilitates the effective distribution of economic resources through the effective distribution of capital and risks. (pwc, 2015, p. 17)What the investor wants from the financial market is sufficient liquidity in the market. Liquidity refers to the ability of a market to absorb large amounts of transactions without causing price fluctuations. Among the advantages of highly liquid markets is the distance between the purchase price and the proposed selling price (Noori & Khatibi, 2013, p. 111),you may have heard or read that the foreign exchange market is the deepest and most liquid market in the world. (Carley, 2012, p. 14) Liquidity in the financial market is a multi-dimensional concept, it refers generally to the ability to execute large transactions with a limited impact on price, and tends to be linked to lower transactions costs and immediate execution. (pwc, 2015, p. 17) Liquidity in the financial market is usually understood as the ability of the market to absorb a large amount of transactions without causing excessive price movements, in addition to that liquid markets are characterized by narrow bid and ask spreads, and this means that transactions are carried out in a cost-effective manner. (IOSCO, 2007, p. 06)

Liquidity is determined in secondary markets by the success of the public approach in a way that reduces the cost and risks for companies and market makers. It also reduces the cost to investors by ensuring a lower cost for fluctuations and transactions, and therefore from a holistic perspective, liquid capital markets are necessary for effective capital allocation, which leads to a decrease in the cost of capital for exporters. On the micro level, the liquid financial market guarantees access to a diverse group of investors who have different trading strategies. In general, we can say that the liquidity of the financial market refers to the depth, breadth, degree of flexibility and speed of trading present in the market: (IOSCO, 2007, pp. 6-7)

- Market depth: it means the effect of large trading volume on price movements.
- Market breadth: the difference in supply and demand is a common sign of market breadth.
- Market flexibility: it means the period of time it takes to reach equilibrium in the event of large price fluctuations, such fluctuations usually occur due to news flows (usually negative news) or large trading volumes. Flexible market is a strong market where prices return to medium or fair value within a short period of time.
- Trading Speed: it means the speed at which the market absorbs transactions. In the liquid market, transactions are executed with minimal time difference.

Conventional measures of financial market liquidity include trading volume or number of deals, market turnover, supply and demand differentials and speed of trading. We note that financial market liquidity is an important factor affecting market efficiency. Liquidity is important to the effective functioning of the financial market, as liquidity in financial markets facilitates the effective allocation of economic resources through the effective allocation of capital and risk, the effective generation of information about the source and its dissemination, and the effectiveness of monetary policy and financial stability. (pwc, 2015, p. 17)

1.2. Financial market liquidity benefits

Financial markets are a major source of financing business growth and they provide important access for investors to invest and earn returns. Policymakers increasingly realize the importance of developing capital markets as an alternative to bank financing. The recent proposal of the European Union Capital Markets

Union seeks to develop deep and liquid cross-border financial markets that complement banks as a source of financing. Financial market liquidity facilitates the effective allocation of economic resources through a number of channels: (pwc, 2015, p. 20)

- Effective capital markets facilitate the global flow of capital between investors or savers and borrowers, and this generates benefits for the economy, as studies show that liquidity in stock markets has a statistically significant relationship to current and future economic growth rates, and investment banks impose lower fees on companies with more liquid stocks because it requires less risk management, and liquid financial markets provide various sources of financing in addition to conventional bank lending.
- Liquid capital markets also facilitate the distribution of financial risks to participants in the most capable and willing market, and enable investors to manage risks and hedge them, as well as modify their financial portfolios effectively.
- Liquidity is necessary to generate and publish information about the source. In the stock market context, movements in the share price are likely to reveal important information about changes in the company's value in liquid financial markets, and may also reflect liquidity risks.
- The effectiveness of monetary policy depends on the conditions of liquidity of the financial markets, where the effectiveness of monetary policy is partly lost caused by the high monetary market rates due to the high levels of liquidity. Therefore, the liquidity of financial markets is a major factor in ensuring the effectiveness of monetary policy.
- Deep and liquid financial markets are important for financial stability, as market participants need liquid financial markets in order to effectively manage risks and their financing needs. Financial market liquidity is also crucial to maintaining the resilience of financial markets in times of tension.

2. Definition of financing decision

It is a decision that involves choosing the source or sources from which the necessary funds will be obtained for the company in order to finance the investment in its assets (Elghathi abdellah, 2016, p. 309), through an optimal distribution of the sources available to the company over the various types of liabilities and property rights in a way that balances the appropriate financing in each of the terms of the liabilities and rights ownership, without exaggeration, leads to increased costs or scarcity that leads to lower operating returns, provided that no excessive profit target which may lead to loss or bankruptcy.

The financing decision covers three main types of decisions:

- Determine the appropriate financial structure, i.e. the choice between self-financing, equity financing, or debt financing
- Dividend policy, i.e. the choice between reinvesting profits (retaining earnings) and distributing dividends to shareholders;
- The test between internal financing (self-financing) and external financing (funds provided by shareholders or borrowings).

These decisions are usually taken at the highest levels of management, and are approved by the company's board of directors because they are among the most important decisions for the company's long-term viability. (Erich A, 2001, p. 33) The financial manager has the responsibility to make a proper choice of the appropriate financing source in light of the required return and the risk that can be accepted. We reiterate that the financial manager's work is not limited to simply "identifying the sources of funds, but it is also his responsibility to obtain them with the best conditions and to specify that mix of funds that do not entail the largest possible return or the lowest possible cost."

II. Method and Materials

1. Study sample and population:

The study population is represented in the enterprises listed in the Kuwait financial market operating in various sectors (industrial, banks, insurance companies, real estate companies ...). The study sample includes the industrial enterprises listed in the Kuwait Stock Exchange represented by 24 companies during the period from 2011 to 2018, with the exclusion of the year 2015 for the lack of data during that year, as well as the exclusion of two industrial enterprises because they did not start their activities during the period 2011 and was after that.

2. The methodology of the analysis:

The methodology used in the analysis is the use of time series through the panel data, where the model used in the books has been defined as follows:

Panel data or longitudinal data is a set of observations of individuals (countries, enterprises, etc.) in several time periods, so that it allows the researcher to model or study differences in individuals' behavior. (William H, 2002, p. 284)

Through the dual dimension (both individual and temporal dimensions) that characterizes the panel data, these data provide us with new perspectives in the applied economy, and in particular, they make it possible to better represent the behavior of individuals (family, companies, employees, regions, countries...). etc. It has become possible to define economic models on the basis of microeconomics and work on panel data, this is why it is important to understand the characteristics of panel data, as although it has some disadvantages, the richness and intensity of information is one of the characterizing features of panel data. (Alain, 2011, p. 09)

3. Method of estimating the standard model:

The first step is to test the examination of the property of heterogeneity or non-heterogeneity in the data used in the study, this occurs by relying on the homogeneity tests of Hsiao. The second step is to estimate the three models, and the third step, is two tests that involve choosing between the pooled model and the fixed effects model, before choosing between the fixed effects model and the random effects model and these two tests confirm the validity of the Hsiao test result. As for the fourth step, it is to define its quality criteria, so that the interpretation of the results obtained is a logical interpretation identical to the theoretical interpretation, statistical interpretation, or both.

4. Study model:

The study model can be divided into three models according to the dependent variables represented in equity financing, long-term loans financing and retained earnings financing.

The first model: represents the relationship between liquidity of the financial market as an independent variable and financing in ordinary shares as a dependent variable according to the following relationship:

$$\boldsymbol{LOG\ OSF_{it}} = \hat{\beta}_0 + \hat{\beta}_1 \boldsymbol{LOG\ LFM_{it}} + \hat{\beta}_2 \mathrm{LOG\ FC_{it}} + \hat{\beta}_3 LOG\ NCF_{it} + \hat{\beta}_4 \mathrm{LOG\ SIZE_{it}} + \hat{\beta}_5 STRA_{it} + \hat{\beta}_6 SOLV_{it} + \hat{\beta}_7 ROE_{it} + \varepsilon_{it} \quad \mathrm{i} = (1 \ldots \mathrm{n})(\mathrm{t} = 1 \ldots \mathrm{k})$$

Given that:

OSF: ordinary shares financing

LFM: Liquidity of the financial market which is measured by the size of shares traded in the financial market

FC: finance cost

NCF: net cash flow

SIZE: the size of enterprise which is measured by log of assets value

STRA: the assets structure which is measured by dividing the fixed assets on total assets

SOLV: the degree of financial solvency of the enterprises which is measured by dividing the total assets on total liabilities

ROE: return on equity which is measured by dividing the net income on equity

ε_{it}:errors random

The second model: represents the relationship between liquidity of the financial market as an independent variable and long-term loans financing as a dependent variable according to the following relationship:

$$LOG\ LTLF_{it} = \hat{\beta}_0 + \hat{\beta}_1 \boldsymbol{LOG\ LFM_{it}} + \hat{\beta}_2 \mathrm{LOG\ FC_{it}} + \hat{\beta}_3 LOG\ NCF_{it} + \hat{\beta}_4 \mathrm{LOG\ SIZE_{it}} + \hat{\beta}_5 STRA_{it} + \hat{\beta}_6 SOLV_{it} + \hat{\beta}_7 ROE_{it} + \varepsilon_{it} \quad \mathrm{i} = (1 \ldots \mathrm{n})(\mathrm{t} = 1 \ldots \mathrm{k})$$

Given that:

LTLF: Long term loans financing

LFM: Liquidity of the financial market

The third model: represents the relationship between liquidity of the financial market as an independent variable and financing with retained earnings as a dependent variable according to the following relationship:

$$\boldsymbol{LOG\ RE_{it}} = \hat{\beta}_0 + \hat{\beta}_1 \mathbf{LOG}\ \boldsymbol{LFM_{it}} + \hat{\beta}_2 \mathrm{LOG\ FC_{it}} + \hat{\beta}_3 \mathrm{LOG}\ NCF_{it} + \hat{\beta}_4 \mathrm{LOG\ SIZE_{it}} + \hat{\beta}_5 STRA_{it} + \hat{\beta}_6 SOLV_{it} + \hat{\beta}_7 ROE_{it} + \varepsilon_{it} \quad \mathrm{i} = (1 \ldots \mathrm{n})(\mathrm{t} = 1 \ldots \mathrm{k})$$

Given that:

RE: retained earnings

LEF: Liquidity of the financial market

5. Description of study variables:

The model used includes one independent variable and three dependent variables, and six controlled variables

- The independent variable is the liquidity of the financial market, which is expressed by the number of shares traded in the Kuwaiti financial market.

- The dependent variable is the financing decision which is divided into three sections, ordinary shares finance, long term loans and retained earnings finance.
- The control variables which are divided into six variables: finance cost, net cash flow, size of enterprise, structure assets, financial solvency, return on equity.

From the above, our study is divided into three models: The first model is for estimating the relationship between the liquidity of the financial market for all sectors as an independent variable and the value of ordinary shares financing as a dependent variable. The second model is for estimating the relationship between liquidity of the financial market for all sectors as an independent variable and long-term loans financing as a dependent variable, and the third and final model is for estimating the relationship between financial market liquidity for all sectors as an independent variable and retained earnings financing as a dependent variable.

III. Results and Discussion:

1. Hsiao homogeneity test(Hsiao 1986):

The first model: The relationship between liquidity of the financial market and financing with ordinary shares. The results of this test are shown in the table(01)

Table1: «homogeneity test results for first model»

Hypotheses	Fisher statistic	prob
H_1(calculated Fisher F_1)	15.22348	0.002556
H_2(calculated Fisher F_2)	0.446784	0.568874
H_3(calculated Fisher F_3)	25.11477	2.42E-05

source: Eviews 10

We notice from Table 01 that the calculated statistical value of Fischer $\boldsymbol{F_1}(\mathbf{0,002556})$ is smaller than the value of Fischer fixed at the 1% and 5% thresholds, which allows us to reject the null hypothesis(there is no full homogeneity), that is why we are now comparing the calculated Fisher $\boldsymbol{F_2}(\mathbf{0,568874})$ that appears to be bigger than the Fischer fixed at the 1% and 5% thresholds, allowing us to accept the null hypothesis that the regression parameters of explanatory variables are the same among companies and that the source of the difference may be in the cross-parameters. Thus, we notice that the calculated statistical value of Fischer $\boldsymbol{F_3}$ $((\mathbf{2.42E-05})$ is smaller than Fischer fixed at the single thresholds 1% and 5%, this allows us to reject the null hypothesis that cross-parameters are the same among companies, that is, we are in a state of model with individual effects.

The second model: The relationship between financial market liquidity and long-term loans financing. The results of this test are shown in the table(02)

Table2: «homogeneity test results for second model»

Hypotheses	Fisher statistic	prob
H_1(calculated Fisher F_1)	10.33267	0.0004789
H_2(calculated Fisher F_2)	1.998741	0.2644789
H_3(calculated Fisher F_3)	17.44759	4.44E-05

source: Eviews 10

We notice from Table 02 that the calculated statistical value of Fischer $\boldsymbol{F_1}(\mathbf{0,0004789})$ is smaller than the value of Fischer fixed at the 1% and 5% thresholds, which allows us to reject the null hypothesis(there is no full homogeneity), that is why we are now comparing the calculated Fisher $\boldsymbol{F_2}$ (0,2644789) that appears to be bigger than the Fischer fixed at the 1% and 5% thresholds, allowing us to accept the null hypothesis that the regression parameters of explanatory variables are the same among companies and that the source of the difference may be in the cross-parameters. Thus, we notice that the calculated statistical value of Fischer F_3 $(4.44E-05)$ is smaller than Fischer fixed at the single thresholds 1% and 5%, this allows us to reject the null hypothesis that cross-parameters are the same among companies, that is, we are in a state of model with individual effects.

The third model: The relationship between liquidity of the financial market and financing with retained earnings. The results of this test are shown in the table(03)

Table3: «homogeneity test results for third model»

Hypotheses	Fisher statistic	prob
H_1(calculated Fisher F_1)	11.00215	0.001556
H_2(calculated Fisher F_2)	1.224589	0.554789
H_3(calculated Fisher F_3)	33.77894	3.89E-06

source: Eviews 10

We notice from Table 03 that the calculated statistical value of Fischer $F_1(0,001556)$ is smaller than the value of Fischer fixed at the 1% and 5% thresholds, which allows us to reject the null hypothesis(there is no full homogeneity), that is why we are now comparing the calculated Fisher $F_2(0,554789)$ that appears to be bigger than the Fischer fixed at the 1% and 5% thresholds, allowing us to accept the null hypothesis that the regression parameters of explanatory variables are the same among companies and that the source of the difference may be in the cross-parameters. Thus, we notice that the calculated statistical value of Fischer F_3 $(3.89E-06)$ is smaller than Fischer fixed at the single thresholds 1% and 5%, this allows us to reject the null hypothesis that cross-parameters are the same among companies, that is, we are in a state of model with individual effects.

2. Estimate the panel models

To achieve this goal, three models will be applied: the pooled regression model(PRM), the fixed effects model(FEM) and the random effects model(REM), and depending on the stata 16 program, we get the following results:

2.1. Estimate the first model

The results of estimation show through the table follow:

Table4: «results of estimate the panel models»

Period: 2011-2018 N=24 T= 7 total panel views= 168			
Explanatory variables	**Pooled regression model(PRM)**	**Fixed Effects Model(FEM)**	**Random Effects Model (REM)**
Constante	-6,955786	-0,0039562	-1,733018
LFM	0,1280504	0,4782271	0,712349
FC	-0,0203147	0,0044884	0,004093
NCF	0,2268198	0,0275849	0,0747412
SIZE	0,7376242	0,1075378	0,263544
STRA	0,0067314	0,0044068	0,0046535
SOLV	0,0346689	0,0098285	0,0116505
ROE	-0,0080314	-0,0005722	-0,0008343
Adjusted R- squared	0,4958	0,8310	0,7690
F- statistic	93,97	88,97	66,62
Prob (F- statistic)	0.0000	0.0000	0.0000

source: Stata16 Output (Appendice 01)

After estimating the three models: the pooled regression model, the fixed effects model, and the random effects model, we compare them by choosing the preferred model using the following statistical tests:

a. Fisher test

Through the table5, we note that the value of (Cross-section F) is 88.97 and the probability value is 0.0000 and it is less than 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so fixed effects model is the best.

Table5: «Fisher test results»

Effects test	statistic	d.f	prob
Cross-section F	88,97	(23, 137)	0,0000

source: stata 16 output

b. Breusch – Pagan test

The test results are shown in the following table

Table6: « Breusch – Pagan test results »

Effects test	Chibar2(01)	Prob> chibar2
Cross-section	298,23	0,0000

source: stata 16 output(appendice 02)

Through the above table, we notice that the value of (Chibar2 (01)) is 298.23 and the probability value is equal to 0.0000 which is less than 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so the FEM is the best .

c. Hausman test

the test results are shown in the following table

Table7: « Hausman test results »

Test: H_0: difference in coefficients not systematic	
Chi2(7)=	353,99
prob>chi2=	0.0000

source: stata 16 (Appendice 03)

The results of Hausman test indicate that it is statistically significant at the level of 0.05, where as the probability value of the test is (0.0000). Therefore, we reject the null hypothesis, and we accept the alternative hypothesis indicating that the fixed effects model is the appropriate model for our study of the ordinary shares financing.

2.2. Estimate the second model

The results of estimation show through the table follow:

Table8: «results of estimate the panel models»

Period: 2011-2018 N=24 T= 7 total panel views= 168			
Explanatory variables	**Pooled regression model(PRM)**	**Fixed Effects Model(FEM)**	**Random Effects Model (REM)**
Constante	-8,180957	1,965999	-6,822939
LFM	0,4274279	-0,2748374	-0,3980132
FC	0,1416123	0,0657217	0,0817438
NCF	-0,1004717	-0,0986702	-0,0383233
SIZE	0,7845391	-0,2558975	0,6510683
STRA	0,0092679	-0,000275	0,0042684
SOLV	-0,0191942	0,0088722	0,0070573
ROE	0,0000952	0,0046944	0,0028416
Adjusted R- squared	0,5541	0,8920	0,5508
F- statistic	30,64	8,63	41,03
Prob (F- statistic)	0,0000	0,0000	0,0000

source: Stata16 Output (Appendice 04)

After estimating the three models: the pooled regression model, the fixed effects model, and the random effects model, we compare them by choosing the preferred model using the following statistical tests:

a. Fisher test

Through the table below, we note that the value of (Cross-section F) is 8,25 and the probability value is equal to 0.0000 and it is less than 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so the fixed effects model is the best.

Table9: «Fisher test results»

Effects test	statistic	d.f	prob
Cross-section F	8,25	(23, 137)	0,0000

source: stata 16 output

b. Breusch – Pagan test

The test results are shown in the following table

Table10: « Breusch – Pagan test results »

Effects test	Chibar2(01)	Prob> chibar2
Cross-section	71,72	0,0000

source: stata 16 output(appendice 05)

Through the above table, we notice that the value of (Chibar2 (01)) is 71,72 and the probability value is equal to 0.0000 which is less than 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so the fixed effects model is the best also.

c. Hausman test

the test results are shown in the following table

Table11: « Hausman test results »

Test: H_0: difference in coefficients not systematic	
Chi2(7)=	66,11
prob>chi2=	0.0000

source: stata 16 (Appendice 06)

The results of Hausman test indicate that it is statistically significant at the level of 0.05, where as the probability value of the test is (0.0000). Therefore, we reject the null hypothesis, and we accept the alternative hypothesis indicating that the fixed effects model is the appropriate model for our study of the long term loans financing.

2.3. Estimate the third model

The results of estimation show through the table follow:

Table12: «results of estimate the panel models»

Period: 2011-2018 N=24 T= 7 total panel views= 168			
Explanatory variables	**Pooled regression model(PRM)**	**Fixed Effects Model(FEM)**	**Random Effects Model (REM)**
Constante	-11,8751	-3,45723	-9,972008
LFM	0,3468542	-0,2143262	-0,3065587
FC	-0,0669735	0,0230587	-0,0000696
NCF	0,078347	-0,2514267	0,0275307
SIZE	1,374474	0,7872739	1,237939
STRA	0,0023689	-0,0155337	-0,0061436
SOLV	0,0140918	-0,0199971	-0,0029509
ROE	0,0078758	0,0032744	0,0008864
Adjusted R- squared	0,5264	0,8569	0,6979
F- statistic	64,33	8,61	95,11
Prob (F- statistic)	0,0000	0,0000	0,0000

source: Stata16 Output (Appendice 07)

After estimating the three models: the pooled regression model, the fixed effects model, and the random effects model, we compare them by choosing the preferred model using the following statistical tests:

a. Fisher test

Through the table below, we note that the value of (Cross-sectionF) is 10,10 and the probability value is equal to 0.0000 and it is less than 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so the fixed effects model is the best.

Table13: «Fisher test results»

Effects test	statistic	d.f	prob
Cross-section F	10,10	(23, 137)	0,0000

source: stata 16 output

b. Breusch – Pagan test

The test results are shown in the following table

Table14: « Breusch – Pagan test results »

Effects test	Chibar2(01)	Prob> chibar2
Cross-section	93,73	0,0000

source: stata 16 output(appendice 08)

Through the above table, we notice that the value of (Chibar2 (01)) is 93,73 and the probability value is equal to 0.0000 which is less than 5%. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so the fixed effects model is the best also.

c. Hausman test

the test results are shown in the following table:

Table15: « Hausman test results »

Test: H_0: difference in coefficients not systematic	
Chi2(7)=	86,47
prob>chi2=	0.0000

source: stata 16 (Appendice 09)

The results of Hausman test indicate that it is statistically significant at the level of 0.05, where as the probability value of the test is (0.0000). Therefore, we reject the null hypothesis, and we accept the alternative hypothesis indicating that the fixed effects model is the appropriate for our study of the retained earnings financing.

3. statistical interpretation of fixed effects model results

Based on the comparison test between three models using Hausman test, the Fisher test and the Breusch - Pagan test, the fixed effects model is the appropriate model, and therefore the results can be interpreted as follows:

3.1. testing the statistical significance for parameters estimated(student test)

we noted through Appendices (01, 04, 07)that all the probability values of the independent variable(liquidity of financial market) in each of the three models it is less than the level of significance 5%(first model:0,008, second model: 0,040, third model: 0,001), and also for the control variables are less than 5%, it has a statistical significance. so there is a statistically significant relationship for these variables with dependent variable(ordinary shares financing, long term loans financing, retained earning financing).

3.2. analyzing R-Squared

we noted through Appendices (01, 04, 07) the value of R-Squared was 0,8310 for the first model, and 0,8920 for the second model, and 0,8569 for the third model. that is meaning the independent variables and control variables contribute to the interpretation of 83,10% of the ordinary shares financing, 89,20% of the long term loans financing, 85,69% of the retained earning financing. while the remaining ratios are explained by other variables that are not included in the model.

3.3. testing the quality of models

through the Appendices (01, 04, 07) the probability values for three models equal 0,0000, it is less than the significance level 5%. Thus, the estimated models have significant statistical in their entirety at a level of significance 0.05, which allows us to say that the models have a statistical significance, i.e all the parameters of the model as a group have a fundamental impact on the dependent variable. in other hand the value of correlation coefficient for the residuals of the estimated models with explanatory variables equal approximately to zero(0,0006 for first model. 0,0004 for second model. 0,0008 for third model). This means that the hypothesis of independence between the residuals and the explanatory variables is realized, which confirms that there is no problem of self-correlation between residuals and the explanatory variables, so the models are statistically acceptable.

4. Results and testing hypotheses

testing first hypothesis

The results obtained through estimating the fixed effects model indicate that the liquidity of the financial market positively affect the value of the ordinary shares financing, as the value of its valuation reached 0.4782271, meaning that every 1% change in the liquidity of the financial market leads to an increase in the value of the ordinary shares financing by 47.82%, this affect is significant(sig=0,008) which means that the financial market liquidity leads to companies directing to finance through ordinary shares. Accordingly, it can be said that the first hypothesis has been confirmed.

testing second hypothesis

The results obtained through estimating the fixed effects model also indicate that the liquidity of the financial market negatively affect long-term loans, with an estimate value of -0.2748374 meaning that every decrease 1% in financial market liquidity leads to an increase in long-term loans by 27.48%, this affect is significant(sig=0,040) which means that a decrease The liquidity of the Kuwait financial market leads enterprises to direct financing through long-term loans, and accordingly it can be said that the second hypothesis has been confirmed.

testing third hypothesis

It is also possible to observe the results obtained through estimating the fixed effects model that the liquidity of the financial market negatively affect the retained earnings, as its value reached -0.2143262meaning that every decrease 1% in the liquidity of the financial market leads to financing with retained earnings by 21.43%, this affect is significant(sig= 0,001) which means that a decrease The liquidity of the Kuwait financial market leads enterprises to direct financing through retained earnings, and accordingly it can be said that the third hypothesis has been confirmed.

Conclusion :

the financial markets liquidity are a feature of efficient markets and the liquidity financial markets plays a major role in activating economy through the financing opportunities that they provide to economic enterprises, as it reflects the dynamics of enterprises through its financial tools circulating in the market. through our treatment of the relationship between financial market liquidity and financing decision reached the following results:

- By studying all the image variables, they are statistically significant independently and positively affect the dependent variables that make up the financing decision. In other words, the three variables differ from one company to another. This is due to other reasons, not caused by the liquidity of the Kuwait financial market, and this is what was obtained from the determination coefficient.
- The liquidity of the financial market has a strong impact on the dependent variable represented in financing by ordinary shares, where the ratio of the determination coefficient reached 83,10%, i.e. enterprises resort to financing through ordinary shares due to the increase in liquidity of the financial market.
- The liquidity of the financial market has a strong adverse effect on the dependent variable represented in financing through long-term loans, where the ratio of the determination coefficient reached 89,20%, that is, enterprises resort to financing through long-term loans due to a decrease in the liquidity of the financial market.
- The liquidity of the financial market has a strong adverse effect on the dependent variable represented in financing through retained earnings, as the ratio of the determination coefficient reached 85,69%, i.e. companies resort to financing through retained earnings, due to a decrease in the liquidity of the financial market.

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Appendices

Appendice1: «results of estimate the panel models for first model»

Source	SS	df	MS
Model	28.6279581	7	8.37542258
Residual	44.2611071	160	.089131919
Total	72.8890652	167	.436461468

Number of obs	=	168
F(7, 160)	=	93.97
Prob > F	=	0.0000
R-squared	=	0.5043
Adj R-squared	=	0.4958
Root MSE	=	.29855

OSF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LFM	.1280504	.0957395	1.34	0.183	-.0610256	.3171264
FC	-.0203147	.0201702	-1.01	0.315	-.0601489	.0195195
NCF	.2268198	.0376164	6.03	0.080	.152531	.3011086
SIZE	.7376242	.0427741	17.24	0.100	.6531496	.8220988
STRA	.0067314	.0012622	5.33	0.160	.0042388	.0092241
SOLV	.0346689	.0086786	3.99	0.089	.0175294	.0518083
ROE	-.0080314	.0023762	-3.38	0.071	-.0127241	-.0033386
_cons	-6.955786	.5662872	-12.28	0.051	-8.074148	-5.837425

Fixed-effects (within) regression
Group variable: indv

Number of obs	=	168
Number of groups	=	24

R-sq:
within = 0.7130
between = 0.7688
overall = 0.8310

Obs per group:
min = 7
avg = 7.0
max = 7

F(7,137)	=	5.30
Prob > F	=	0.0000

corr(u_i, Xb) = 0.0006

OSF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LFM	.4782271	.0269251	1.78	0.008	-.0054199	.1010652
FC	.0044884	.0072641	0.62	0.038	-.0098759	.0188528
NCF	.0275849	.0385453	0.72	0.005	-.0486358	.1038056
SIZE	.1075378	.0552876	1.95	0.003	-.0016313	.216707
STRA	.0044068	.00109	4.04	0.000	.0022515	.0065622
SOLV	.0098285	.0033537	2.93	0.004	.0031968	.0164602
ROE	-.0005722	.0009483	-0.60	0.047	-.0024473	.001303
_cons	-.0039562	.5250276	-0.01	0.004	-1.042162	1.03425
sigma_u	.565505					
sigma_e	.00082091					
rho	.97998326	(fraction of variance due to u_i)				

F test that all u_i=0: F(23, 137) = 88.97 Prob > F = 0.0000

```
 Random-effects GLS regression                    Number of obs     =        168
Group variable: indv                             Number of groups  =         24

R-sq:                                            Obs per group:
     within  = 0.1877                                          min =          7
     between = 0.7984                                          avg =        7.0
     overall = 0.7690                                          max =          7

                                                 Wald chi2(7)      =      66.62
corr(u_i, X)   = 0 (assumed)                     Prob > chi2       =     0.0000

------------------------------------------------------------------------------
         OSF |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         LFM |    .712349   .0303105     2.35   0.019     .0118273    .1306424
          FC |    .004093   .0082049     0.50   0.618    -.0119884    .0201744
         NCF |   .0747412   .0405266     1.84   0.065    -.0046894    .1541718
        SIZE |    .263544   .0552788     4.77   0.000     .1551995    .3718886
        STRA |   .0046535   .0011718     3.97   0.000     .0023569    .0069502
        SOLV |   .0116705   .0037402     3.12   0.002     .0043399    .0190011
         ROE |  -.0008343   .0010547    -0.79   0.429    -.0029016    .0012329
       _cons |  -1.733018   .5264629    -3.29   0.001    -2.764867     -.70117
-------------+----------------------------------------------------------------
     sigma_u |  .29308728
     sigma_e |  .08082091
         rho |  .92933175   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Appendice 2: « Breusch – Pagan test results for first model »

```
Breusch and Pagan Lagrangian multiplier test for random effects

        OSF[indv,t] = Xb + u[indv] + e[indv,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                     OSF |   .4364615       .6606523
                       e |    .006532       .0808209
                       u |   .0859002       .2930873

        Test:   Var(u) = 0
                             chibar2(01) =   298.23
                          Prob > chibar2 =   0.0000
```

Appendice 3: « Hausman test results for first model »

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |      fe           re          Difference          S.E.
-------------+----------------------------------------------------------------
         LFM |    .478227      .712349       -.234122               .
          FC |   .0044884      .004093       .0003954               .
         NCF |   .0275849     .0747412      -.0471563               .
        SIZE |   .1075378      .263544      -.1560062               .
        STRA |   .0044068     .0046535      -.0002467               .
        SOLV |   .0098285     .0116705       -.001842               .
         ROE |  -.0005722    -.0008343       .0002621               .
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =      353.99
                Prob>chi2 =      0.0000
```

Appendice 4: «results of estimate the panel models for second model»

Source	SS	df	MS
Model	83.1923008	7	11.8846144
Residual	62.0565773	160	.387853608
Total	145.248878	167	.869753761

Number of obs	=	168
F(7, 160)	=	30.64
Prob > F	=	0.0000
R-squared	=	0.5728
Adj R-squared	=	0.5541
Root MSE	=	.62278

LTDF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LFM	.4274279	.1997139	2.14	0.034	.0330127	.8218432
FC	.1416123	.0420754	3.37	0.001	.0585176	.2247071
NCF	-.1004717	.0784684	-1.28	0.202	-.2554392	.0544957
SIZE	.7845391	.0892273	8.79	0.000	.6083239	.9607543
STRA	.0092679	.0026329	3.52	0.001	.0040682	.0144676
SOLV	-.0191942	.0181037	-1.06	0.291	-.0549473	.0165589
ROE	.0000952	.0049567	0.02	0.985	-.0096939	.0098843
_cons	-8.180957	1.181283	-6.93	0.000	-10.51388	-5.848039

Fixed-effects (within) regression Number of obs = 168
Group variable: indv Number of groups = 24

R-sq: Obs per group:
within = 0.7769 min = 7
between = 0.8360 avg = 7.0
overall = 0.8920 max = 7

F(7,137) = 8.63
corr(u_i, Xb) = 0.0004 Prob > F = 0.0000

LTDF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LFM	-.2748374	.1451721	1.89	0.040	-.5122304	.5619052
FC	.0657217	.0391661	1.68	0.016	-.0117265	.1431699
NCF	-.0986702	.2078246	-0.47	0.036	-.5096291	.3122887
SIZE	-.2558975	.2976625	-0.86	0.031	-.8445046	.3327095
STRA	-.0000275	.0058767	-0.00	0.026	-.0116483	.0115934
SOLV	.0088722	.0180821	0.49	0.024	-.0268839	.0446284
ROE	.0046944	.0051128	0.92	0.001	-.0054158	.0148046
_cons	1.965999	2.83079	0.69	0.004	-3.631693	7.563691
sigma_u	.98540322					
sigma_e	.43576184					
rho	.83643114	(fraction of variance due to u_i)				

F test that all u_i=0: F(23, 137) = 8.25 Prob > F = 0.0000

Random-effects GLS regression Number of obs = 168
Group variable: indv Number of groups = 24

R-sq: Obs per group:
within = 0.0258 min = 7
between = 0.7090 avg = 7.0
overall = 0.5508 max = 7

Wald chi2(7) = 41.03
corr(u_i, X) = 0 (assumed) Prob > chi2 = 0.0000

LTDF	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LFM	-.3980132	.1491128	2.67	0.008	-.5057576	.6902688
FC	.0817438	.0393097	2.08	0.038	.0046982	.1587893
NCF	-.0383233	.1315598	-0.29	0.771	-.2961758	.2195292
SIZE	.6510683	.1564028	4.16	0.000	.3445243	.9576122
STRA	.0042684	.0041662	1.02	0.306	-.0038973	.0124341
SOLV	.0070573	.0171289	0.41	0.680	-.0265148	.0406293
ROE	.0028416	.0047469	0.60	0.549	-.0064621	.0121453
_cons	-6.822939	1.5152	-4.50	0.000	-9.792676	-3.853203
sigma_u	.43925321					
sigma_e	.43576184					
rho	.50399	(fraction of variance due to u_i)				

Appendice5: « Breusch – Pagan test results for second model »

```
Breusch and Pagan Lagrangian multiplier test for random effects

        LTDF[indv,t] = Xb + u[indv] + e[indv,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                    LTDF |   .8697538       .9326059
                       e |   .1898884       .4357618
                       u |   .1929434       .4392532

        Test:   Var(u) = 0
                             chibar2(01) =    71.72
                          Prob > chibar2 =   0.0000
```

Appendice 6: « Hausman test results for second model »

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |      fe           re          Difference          S.E.
-------------+----------------------------------------------------------------
         LFM |   -.2748374    -.3980132      -.1231758               .
          FC |    .0657217     .0817438      -.0160221               .
         NCF |   -.0986702    -.0383233      -.0603469         .1608822
        SIZE |   -.2558975     .6510683      -.9069658         .2532609
        STRA |   -.0000275     .0042684      -.0042959         .0041447
        SOLV |    .0088722     .0070573        .001815         .0057934
         ROE |    .0046944     .0028416       .0018528         .0018994
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       66.11
                Prob>chi2 =      0.0000
```

Appendice 7: «results of estimate the panel models for third model»

```
Fixed-effects (within) regression               Number of obs     =        168
Group variable: indv                            Number of groups  =         24

R-sq:                                           Obs per group:
     within  = 0.7178                                         min =          7
     between = 0.7878                                         avg =        7.0
     overall = 0.8569                                         max =          7

                                                F(7,137)          =       8.61
corr(u_i, Xb)  = 0.0008                         Prob > F          =     0.0000

------------------------------------------------------------------------------
          RE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         LFM |  -.2143262   .1220472     1.76   0.001    -.2701389    .4556661
          FC |   .0230587   .0329272     0.70   0.005    -.0420526    .0881699
         NCF |  -.2514267   .1747196    -1.44   0.002    -.5969228    .0940693
        SIZE |   .7872739    .250247     3.15   0.002     .2924278     1.28212
        STRA |  -.0155337   .0049406    -3.14   0.002    -.0253034    -.005764
        SOLV |  -.0199971   .0152018    -1.32   0.011    -.0500576    .0100633
         ROE |   .0032744   .0042984     0.76   0.044    -.0052253    .0117741
       _cons |   -3.45723   2.379865    -1.45   0.014    -8.163249     1.24879
-------------+----------------------------------------------------------------
     sigma_u |  .81354702
     sigma_e |  .36634812
         rho |  .83140805   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(23, 137) = 10.10                    Prob > F = 0.0000
  Random-effects GLS regression                 Number of obs     =        168
  Group variable: indv                          Number of groups  =         24

  R-sq:                                         Obs per group:
       within  = 0.0677                                       min =          7
       between = 0.7819                                       avg =        7.0
       overall = 0.6979                                       max =          7

                                                Wald chi2(7)      =      95.11
  corr(u_i, X)   = 0 (assumed)                  Prob > chi2       =     0.0000

  ------------------------------------------------------------------------------
            RE |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
  -------------+----------------------------------------------------------------
           LFM |  -.3065587   .1255424     2.44   0.015    -.6050021    .5526172
            FC |  -.0000696   .0333049    -0.00   0.998    -.0653459    .0652068
           NCF |   .0275307   .1166004     0.24   0.813    -.2010019    .2560633
          SIZE |   1.237939   .1398908     8.85   0.000     .9637581     1.51212
          STRA |  -.0061436   .0036622    -1.68   0.093    -.0133214    .0010343
          SOLV |  -.0029509    .014561    -0.20   0.839    -.0314898    .0255881
           ROE |   .0008864   .0040431     0.22   0.826    -.0070379    .0088108
         _cons |  -9.972008   1.344488    -7.42   0.000    -12.60716   -7.336859
  -------------+----------------------------------------------------------------
       sigma_u |    .407667
       sigma_e |  .36634812
           rho |  .55323084   (fraction of variance due to u_i)
  ------------------------------------------------------------------------------
```

Source	SS	df	MS
Model	99.48626	7	19.9266086
Residual	89.558751	160	.309742196
Total	189.045012	167	1.13200606

Number of obs	=	168
F(7, 160)	=	64.33
Prob > F	=	0.0000
R-squared	=	0.5378
Adj R-squared	=	0.5264
Root MSE	=	.55654

RE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LFM	.3468542	.1784738	1.94	0.154	-.005614	.6993224
FC	-.0669735	.0376006	-1.78	0.077	-.1412389	.007284
NCF	.078347	.0701231	1.12	0.266	-.0601393	.2168332
SIZE	1.374474	.0797378	17.24	0.000	1.217	1.531948
STRA	.0023689	.0023529	1.01	0.316	-.0022778	.0070156
SOLV	.0140918	.0161784	0.87	0.385	-.0178589	.0460424
ROE	.0078758	.0044296	1.78	0.077	-.0008722	.0166237
_cons	-11.8751	1.055651	-11.25	0.000	-13.95991	-9.790294

Appendice 8: « Breusch – Pagan test results for third model »

```
Breusch and Pagan Lagrangian multiplier test for random effects

        RE[indv,t] = Xb + u[indv] + e[indv,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                      RE |   1.132006       1.063958
                       e |   .1342109       .3663481
                       u |   .1661924        .407667

        Test:   Var(u) = 0
                             chibar2(01) =    93.73
                          Prob > chibar2 =   0.0000
```

Appendice 9: « Hausman test results for third model »

	---- Coefficients ---- (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
LFM	-.2143262	-.3065587	-.0922325	.
FC	.0230587	-.0000696	.0231282	.
NCF	-.2514267	.0275307	-.2789574	.1301203
SIZE	.7872739	1.237939	-.4506651	.2074948
STRA	-.0155337	-.0061436	-.0093901	.0033162
SOLV	-.0199971	-.0029509	-.0170463	.0043671
ROE	.0032744	.0008864	.002388	.0014592

```
                          b = consistent under Ho and Ha; obtained from xtreg
           B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       86.47
                Prob>chi2 =      0.0000
```