The impact of the ceded reinsurance premiums on the underwriting size of Algerian damage insurance companies from 2011 to 2021 : Random Effect Approach

أثر أقساط إعادة التأمين المسندة على حجم الاكتتاب في شركات تأمين الأضرار الجزائرية من 2011 الى غاية 2021: نموذج الأثار العشوائي

Bencharif Djafer[1], Idroudj Djamel[2]

[1] Phd student, University Centre of Tipaza Morsli Abdallah,
bencharif.djafer@cu-tipaza.dz
[2]Associate professor (A), University of Algiers 3,
djamel.idroudj@yahoo.fr

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Abstract:

This research aim to measure the impact of the ceded reinsurance premiums on the underwriting size of Algerian damage insurance companies from 2011 to 2021 by using Stata 17 and Eviews 13, the data was obtained from the annual reports of the Ministry of Finance sector of insurance in Algeria.

The estimate results indicate that the random effect model is the best model for this research, the model is free from the standards problems, there is a positive impact for the ceded reinsurance premiums on the underwriting size of Algerian damage insurance companies during the period of the research.

Keywords: Reinsurance, Ceded reinsurance premiums, Underwriting, Panel data.

JEL Classification Codes : **G32, G22, C23.**

ملخص:

يهدف هذا البحث الى قياس أثر أقساط إعادة التأمين المسندة على حجم الاكتتاب في شركات تأمين الأضرار الجزائرية من 2011 الى غاية 2021 باستخدام كل من برنامجStata17 وبرنامج Eviews13 حيث تم جمع البيانات من خلال التقارير السنوية لوزارة المالية الخاصة بقطاع التأمين في الجزائر.

أظهرت نتائج التقدير أن نموذج الآثار العشوائية هو النموذج المناسب لهذه الدراسة، النموذج خال من المشاكل القياسية، يوجد أثر إيجابي لأقساط إعادة التأمين المسندة على حجم الاكتتاب في شركات تأمين الأضرار الجزائرية خلال فترة الدراسة.

كلمات مفتاحية: إعادة التأمين، أقساط إعادة التأمين المسندة، الاكتتاب، بيانات بانل.

تصنيفات JEL: G32 ، G22، C23.

***Corresponding author** : Bencharif Djafer, **e-mail : bencharif.djafer@cu-tipaza.dz**.*

1. INTRODUCTION

Insurance is the protection provided to the insured against the potential risks, through the underwriting process by concluding insurance contracts as an official binding document states the insured provide an amount of money in the form of insurance premiums, in exchange the insurer must compensate the damage incurred if the insured risks materializes.

When the insurer collecting a big number of insureds, it's apply the principle of large numbers as one of the technical foundations in insurance, and at the same time it increases its shares in the insurance market within the framework of expanding its activity.

This process can make the insurer accepting risks exceed the absorptive capacity, which exposed to risks unable to bear, which may lead to inability to fulfil their obligations towards policyholders. An insurer can use reinsurance to reduce risks size as a risk management technique by ceded a

share or part or all the risk to the reinsurer through the ceded reinsurance premiums.

The problematic of this research was formulated through the following question : **What is the impact of the ceded reinsurance premiums on the underwriting size of Algerian damage insurance companies from 2011 to 2021 ?**

Research Hypothesis :

There is a statistically significant impact of the ceded reinsurance premiums on the underwriting size of Algerian damage insurance companies from 2011 to 2021.

Research Importance :

The importance of the research is to identify the role of the reinsurance on the underwriting process, as a technique of sharing risks between the insurer and the reinsurer by ceded the reinsurance premiums to the reinsurer, to ensure the rights of the insured and the continuity of the insurance companies.

Research Objectives :

This research aims to achieve the following points :

- Identify the ceded methods in insurance companies.
- highlight on the participants on the underwriting process of insurance companies.
- Measuring the impact of the ceded reinsurance premiums on the underwriting size and determining the correlation between them.

Research Methodology :

In this research, the descriptive approach was used to describe and analyse both of reinsurance and underwriting, in addition to analyse and measure the impact of the ceded reinsurance premiums on the underwriting size.

2. Reinsurance

2.1 Reinsurance definition:

The Reinsurance is a technique of risks management by sharing potential future losses covered by the insurer with reinsurer, and determine

the amount of premium that the insurer will pay (ceded) to the reinsurer for this coverage. (Abdul & Dick, 2017, p. 56)

The Association of Professionals in Reinsurance in France (APRE) defined Reinsurance as the insurance of insurers. In reality, it is a contract by which a specialized company (the reinsurer) assumes part of the risks underwritten by an insurer (the ceding company) from its insured. By this operation, the reinsurer commits to refund the insurer in the event of the risk materializing, a portion of the sums paid in respect of claims and receives in return a portion of the original premiums paid by the insured, the reinsurer only deals with insurers. (Apref, s.d.)

2.2 Legal forms of reinsurance:

2.2.1 Facultative reinsurance : Facultative reinsurance is an arrangement covering a single risk or a package of risks by negotiation, There is no obligation for the ceding company to offer risks, nor is the insurer obliged to accept it.

Each case is considered on its own merits, and the reinsurer is free to put whatever conditions about risk.

The facultative reinsurance decision process in generally as follows :

- the insurer selects and assesses a specified risk, it may decide to fully retain this risk or retain a portion of the risk and cede the remainder to a reinsurer.
- if the insurer decides to share the risk with a reinsurer, it will identify the proposed the cession by the percentage of risk transferred to the reinsurer.
- the potential reinsurer assesses the conditions proposed by the insurer and decides to accept or reject the risk. If the risk is accepted, a reinsurance contract is signed.

2.2.2 Obligatory reinsurance : The other form of reinsurance is called obligatory reinsurance also called treaty reinsurance.

Obligatory reinsurance is based on a defined portfolio or block of risks for a specific time period, this portfolio of risks is called a reinsured portfolio. In this agreement, the insurer is required to cede all risks in the reinsured portfolio, and the reinsurer is required to accept it. (Abdul & Dick, 2018, p. 21)

2.3 Technical forms of reinsurance :

2.3.1 Proportional reinsurance : In proportional contracts, the risk is divided between the direct insurance company and the reinsurance company, according to a certain ratio measured by the amount of insurance. Once this ratio has been established, the reinsurer gets a certain percentage of the premium and be liable for a portion of the reinsured risk. (meddi, 2006, p. 52)

- **Quota share :** In a quota share premiums and losses are shared between the two parties according to an agreed ratio, which corresponds to the retention ratio which represents the percentage of insurance premiums and losses held by the direct insurance company. All risk types are shared in the portfolio regardless of the insured sum. (zanotto, 2019, p. 4)
- **Surplus share reinsurance :** This type of proportional reinsurance is basically a Quota Share agreement. In this way, the insurance company fixes an amount called retention or surplus line as the maximal sum insured that the company will retain on it own account. any amount above the retention and up to a given amount called capacity of the contract will be reinsured. The capacity is sometimes given in a number of surplus lines. (wehrhahn, 2009, p. 8)

2.3.2 Non-proportional reinsurance : In non-proportional reinsurance, the reinsurer is liable if the insurance company's losses exceed a specified amount, called a priority or retention limit. As a result, the reinsurer does not have a proportionate share of the insurance premiums and losses. (Billah & others, 2019, pp. 266, 267)

- **Excess of Loss :** which the reinsurer indemnifies part of a loss, which exceeds a specified monetary amount (excess or retention) up to a further specified monetary amount (limit of liability or indemnity).

- Per Risk Excess Reinsurance : or underlying excess of loss reinsurance. A mechanism by which the insurer can recover losses on an individual risk in excess of a particular per risk retention.

- Excess of loss reinsurance per event : Under this cover, the reinsurer indemnify the insurer when the latter’s liability exceeds an

aggregate net loss agreed upon the reinsurance contract and covered in the reinsurance policy.. (benhenda, 2020, p. 06)

- **Annual excess loss (stop loss) :** With an annual loss increment, the reinsurer pays if the direct company's total net losses in the calculation year exceed a predetermined amount. Or percentage of premium income. The annual deductible is the most comprehensive form of reinsurance coverage. (meddi, 2006, p. 54)
- **Catastrophic excess of loss reinsurance** : This is a third category of non-proportional reinsurance (Cat-XL), which the necessity to exceed the priority to have reinsurance protection, also if a catastrophic event does occur, such as an earthquake, explosion or other natural occurrence. On the other hand, these conventions exclude claims for nuclear or radioactive accidents, terrorism and political threats covered by the establishment of governmental or industrial national pools. (wehrhahn, 2009, p. 13)

3. The Underwriting in damage insurance:

3.1 Underwriting definition:

Underwriting is the process of selecting and accepting risks offered to the insurance company by the insured under certain conditions and in exchange for insurance amounts. With the aim of obtaining security for the insured and making profit for the insurance company. (Shapiro & Jain, 2003, p. 11)

We can also define the underwriting as a process carried out by the insurance companies by studying the needs of potential insureds to propose insurance contracts that suit their needs, by identifying their requirements and convince them that insurance coverage suits them insurance demande through the service of a specific insurance product.

In this process, it is required to evaluate these proposed risks for underwriting by examining and evaluating their characteristics, frequency, average cost and the cost of the maximum possible loss, in order to verify the possibility of insurance and acceptance of risks. (CNIL, p. 2)

3.2 Underwriting capacity:

Underwriting capacity of any insurance company or insurer is the financial ability of that company that determine the limit of its risk shouldering. (Soye & Adeyemo, 2018, p. 732)

3.3 The insurance intermediaries categories :

3.3.1 The employees networks : They represent the producers of the employees network who works in insurance companies. (Marquet, 2020, p. 12)

3.3.2 Insurance agents : The insurance agents are a natural or legal persons who are in charge of insurance operations to have new insurance contracts and to manage them for the insurance companies by an agency contract establishes by a treaty define the responsibilities conferred on the agents for only one insurance company. the insurance agents are neither traders nor employees.

3.3.3 Insurance broker : An insurance broker is a natural or legal person specializing in insurance, representing the interests of the insured. they present the risks exposed to the insured, search for the best guarantees to cover risks, and consults insurance companies to find out the best proposals for the insured can underwrite. (André & Monnier, 2016, p. 24)

3.4 The proceeding of Underwriting process :

It's required that the risks proposed to the insurance companies should not lead to an imbalance situation, it is up to the insurance company to choose the risks, whether they are good or already guaranteed. After examining the risk, the insurance company evaluates the risks as follows :

- accept it without conditions.
- modify the limits and/or the franchises
- refuse the risk. (Marquet, 2020, p. 19)

Sometimes an insurance applicant wants immediate security at a stage when the insurer is not yet able to form an accurate opinion of the risk. In this case, the coverage note establishes a temporary agreement from the insurance company, which agrees to underwrite the risk for a limited period. Means the loss that occurs during the period of the coverage note is covered, but when the loss occurs after the deadline mentioned in the note

and before the delivery of the insurance policy to the insured the loss is not covered. (Maud & Christophe, p. 89)

When the insurance contract provided by an insurance company or an insurance intermediary is signed, the insured is obligated to pay a sum of money designating due in the contracts in the form of insurance premiums. In return for the guarantee of risk. (Maud & Christophe, p. 28)

Where an insurance contract or insurance policy is defined as a written document usually divided into :

- General conditions : contain the operating rules of the contract are grouped together as well as the clauses relating to the guarantees.

- Special conditions : contains the indications specific to the insured and to the insurance operation. (Maud & Christophe, p. 88)

4. The Econometric study of the impact of the ceded reinsurance premiums on the underwriting size in the Algerian damage insurance companies from 2011 to 2021 :

For measuring the impact of the ceded reinsurance premiums (RP) on the underwriting size (UW) in Algerian damage insurance companies, we will test hypotheses and at last discussion and analysis.

4.1 Descriptive statistical analysis :

The Data about the study were collected for the period 2011 to 2021, and to conduct the descriptive analysis of the variables, as the sample size is 132 observations for each of the study variables, according to the method of merging between cross-sectional data and time series data.

Table 1. Descriptive statistics

	RP	**UW**
Mean	2984.583	9607.394
Maximum	14547	29117
Minimum	148	242
Std.Dev	3577.507	7756.989
Observations	132	132

Source: Prepared by the researchers, based on Stata 17 programme outputs (Annexe 01)

According to table 1 : The arithmetic mean of the ceded reinsurance premiums during the study period is 2984.583, and for the underwriting size the mean is 9607.394.
The standard deviation for the ceded reinsurance premiums is equal to 7756.989 and for the underwriting size is equal to 3577.507.

4.2 Autocorrelation test :

The correlation matrix test between variables allows to ensure that the model is free of multiple autocorrelation problem.

Table 2. Correlation matrix between variables

	RP	**UW**
RP	1.0000	
UW	0.6340	1.0000

Source: Prepared by the researchers, based on Stata 17 programme outputs (Annexe 02)

Through table 2 : We notice that there is a direct relationship between the ceded reinsurance premiums and the underwriting size by 63.40%.

4.3 Multicollinearity test :

To detect the multicollinearity problem between the variables, we used the variance inflation factor test (vif test).

Table 3. Vif test

Varianle	**Vif**	**1/vif tolerance**
RP	1.00	1.000000
Mean VIF	1.00	

Source: Prepared by the researchers, based on Stata 17 programme outputs (Annexe 03)

Through table 3 : Vif = 1.00 < 5

Tolerance = 1.000000 < 5

The value of Vif and Tolerance is less than the maximum value, It means that there is No Multicollinearity problem between the variables.

4.4 Model Estimate :

4.4.1 The General model of the study :

Based on the previous results and what had discussed in the theoretical part, we determined the ceded reinsurance premiums as independent variable, and the underwriting size as dependent variable.

The General formula of the econometric model as follow :

$$UW_t = B_0 + B_1 RP_t + \varepsilon_t$$

Where :

UW : Underwriting size

RP : Ceded reinsurance premiums.

B_0 : Constant

B_1 : Coefficient

ε_t : Random error

4.4.2 Estimate Panel Data model :

First we must estimate model coefficient by using :

- Pooled Ordinary Least Square model (OLS).
- Fixed Effect model (fe).
- Random Effect model (re).

Table 4. Model Coefficient of the study by using the three models

Test 1	Test 2	Results 1	Results 2
Constante	5504.463 (0.000)	6011.018 (0.000)	5997.958 (0.001)
RP	1.3747 (0.000)	1.204984 (0.000)	1.20936 (0.000)
R-squared	0.4020	0.4020	0.4020
Adjusted R-squared	0.3974	-	-
F-statistic	87.38	201.87	-
Prob (F-statistic)	0.0000	0.0000	-

Source : Prepared by the researchers, based on Stata 17 programme outputs (Annexes : 04, 05, 06)

4.4.3 Choosing between OLS Pooled and fixed effect model :

We used Fisher test to chose between OLS pooled model and fixed effects model, based on the following hypotheses :

H_0 : select OLS Pooled (OLS Pooled >0.005)

H_1 : select Fe (Fe<0.005)

Table 5. fisher test results

Test	Vif	Prob
F(11,119)	352.97	0.0000

Source : Prepared by the researchers, based on Stata 17 programme outputs (Annexe 07).

From the table 5 the Probability value (0.000), and its less than the significance level (0.05), so we reject the null hypothesis (H_0) and we accept the alternative hypothesis (H_1). Thus, using fixed effects model is recommended.

4.4.4 Choosing between OLS Pooled and Random effect model :

We use Breusch and Pagan-LM Test to chose between OLS Pooled model and random effect model as the following hypotheses :

H_0 : select OLS Pooled (OLS Pooled > 0.005)

H_1 : select Re (Re < 0.005)

Table 6. Breuch and Pagan-LM test results

Test	Stat.BP	Prob
Breusch and Pagan	616.12	0.0000

Source : Prepared by the researchers, based on Stata 17 programme outputs (Annexe 08).

From the table above, the value of Chi-bar is 616.12, and the Probability (0.0000) is less than the significance level (0.05).
This means the evidence is strong enough to reject the null hypothesis (H_0) in favour of the alternative hypothesis (H_1). Thus, using random effects model is recommended.

4.4.5 Choosing between Fixed and Random effect model :

To chose between Random effect model and Fixed effect model we use Hausman test, this test is based on the following hypotheses :

H_0 : select Re (Re > 0.005)

H_1 : select Fe (Fe < 0.005)

Table 7. Hausman test results

Test	Stat.BP	Prob
Hausman test	0.09	0.7655

Source : Prepared by the researchers, based on Stata 17 programme outputs (Annexe 09).

4.5 Diagnostic tests :

In order to make sure that the model hasn't standard problems, we use the followings tests :

4.5.1 Wooldridge autocorrelation test :

Table 8. Wooldridge test for autocorrelation

Test	Stat.BP	Prob
Wooldridge test for autocorrelation	72.917	0.0000

Source : Prepared by the researchers, based on Stata 17 programme outputs (Annexe 10)

According to the table 08 the P-value is less than 0.05, then we accept the null hypothesis which prove the absence of autocorrelation in the model of random effects.

4.5.2 Heteroscedasticity test :

Table 9. heteroskedasticity test results

Test	F.stat	Prob
Breush-Pagan/cook Weisberg test for heteroskedasticity	2.48	0.1150

Source : Prepared by the researchers, based on Stata 17 programme outputs (Annexe 11)

In this table, the P-value of Breush-Pagan/cook Weisberg test is more than the significance level which the null hypothesis, which admits the invariance of the variance.

4.6 Estimate and analysis Random effect model :

After completing the diagnostic tests, we found that the panel data model are devoid of the problem of autocorrelation and haven't problem of heterogeneity of variation, and therefore we rely on the analysis of the model of random effects after what was proposed through the differentiation tests.

The General formula of the econometric model of this study as follow :

$$UW_t = 5997.958 + 1.209360\ RP_t + \varepsilon_t$$

- From the previous table, we notice that the R-squared value (0.6172) means that the variables included in the estimation of the model explain 61.72% of the changes that occur to the dependent variable (underwriting

size) and the rest is due to other factors not included in the model. The adjusted R-squared value reinforce the R squared value by the very close of values.

- The table show also that F value is 209.6127 in probability (0.000000), the probability value is less than the significance level (5%) so The model is completely stable.
- The ceded reinsurance premiums effect positive on the underwriting size in value (0.0000000), when ceded reinsurance premiums increase by one unite the underwriting size increase by 1.20 unite.
- We notice also significance statistic for the coiffiente model less than 5%, so we accept the model, thus we can express the results of this model.

5. CONCLUSION

Through this research, we identified the impact of the ceded reinsurance premiums on the underwriting size in Algerian damage insurance companies.

The Reinsurance increases the absorptive capacity of underwriting operations as the maximum that insurance companies can acquire without exposing to the risks or financial deficit, which opens the way towards increasing underwriting risks by resorting to reinsurance as a protection source, by increases their activity and thus increases the volume of insurance premiums collected and increases their ability to face risks.

Research Results :

- The standard study conducted on Algerian damage insurance companies that : there is a positive effect of the ceded reinsurance premiums on the size of these companies, where if the volume of ceded premiums increased by 1 % the volume of underwriting would increase by 1.20%, and This is what consistent with economic theory.
- The diagnostic tests sacrifice the absence of the autocorrelation problem, and the stability of variability, which leads us to say that the model is acceptable for the study.

- And also has interpretive power and this is confirmed by the correlation coefficient R2 = 0.61, means that the independent variable explains 61% of the dependent variable, and the adjusted R Squared reinforce these results.

Recommendations of the Research :

- Raising the awareness of insurance companies of the importance of reinsurance, and its role of increasing the underwriting size.
- The need to choose a reinsurer has an excellent solvency and good reputation.
- Qualification the human resource in the field of underwriting and reinsurance.
- The necessary to control by insurance companies over the activity of agents and brokers insurance insurance the processes of accepting risks and providing insurance coverages.

Suggestions for future Research :

- The Impact of the reinsurance on the compensation size in insurance companies.
- The Underwriting risks in life insurance companies.
- The role of claims settlement in increasing the underwriting size in insurance companies.
- The reality and prospects of reinsurance in Algeria.

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7. Appendices :

Appendix. 1

```
. sum RP UW
```

Variable	Obs	Mean	Std. dev.	Min	Max
RP	132	2984.583	3577.507	148	14547
UW	132	9607.394	7756.989	242	29117

Appendix. 2

```
. correl RP UW
(obs=132)
```

	RP	UW
RP	1.0000	
UW	0.6340	1.0000

Appendix. 3

```
. vif
```

Variable	VIF	1/VIF
RP	1.00	1.000000
Mean VIF	1.00	

Appendix. 4

```
. reg UW RP
```

Source	SS	df	MS		
Model	3.1685e+09	1	3.1685e+09	Prob > F	0.0000
Residual	4.7139e+09	130	36260669.7	R-squared	0.4020
Total	7.8824e+09	131	60170875.3	Adj R-squared	0.3974
				Root MSE	6021.7

UW	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
RP	1.374708	.1470624	9.35	0.000	1.083763	1.665654
_cons	5504.463	683.6321	8.05	0.000	4151.978	6856.947

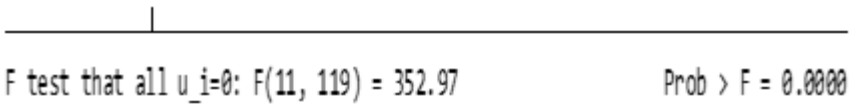
Appendix. 5

```
. xtreg UW RP,fe

Fixed-effects (within) regression               Number of obs      =       132
Group variable: insurcomp                       Number of groups   =        12

R-squared:                                      Obs per group:
     Within  = 0.6291                                         min =        11
     Between = 0.3912                                         avg =      11.0
     Overall = 0.4020                                         max =        11

                                                F(1,119)           =    201.87
corr(u_i, Xb) = 0.1022                          Prob > F           =    0.0000

------------------------------------------------------------------------------
          UW | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
          RP |   1.204984   .0848091    14.21   0.000     1.037054    1.372915
       _cons |   6011.018   270.1736    22.25   0.000     5476.048    6545.989
-------------+----------------------------------------------------------------
     sigma_u |  6180.4839
     sigma_e |  1085.3487
         rho |  .97008404   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(11, 119) = 352.97                     Prob > F = 0.0000
```

Appendix .6

```
. xtreg UW RP,re

Random-effects GLS regression                   Number of obs      =       132
Group variable: insurcomp                       Number of groups   =        12

R-squared:                                      Obs per group:
     Within  = 0.6291                                         min =        11
     Between = 0.3912                                         avg =      11.0
     Overall = 0.4020                                         max =        11

                                                Wald chi2(1)       =    209.61
corr(u_i, X) = 0 (assumed)                      Prob > chi2        =    0.0000

------------------------------------------------------------------------------
          UW | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
          RP |    1.20936   .0835308    14.48   0.000     1.045643    1.373078
       _cons |   5997.958   1870.707     3.21   0.001     2331.439    9664.477
-------------+----------------------------------------------------------------
     sigma_u |  6436.1895
     sigma_e |  1085.3487
         rho |  .97234948   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Appendix .7



Appendix .8

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        UW[insurcomp,t] = Xb + u[insurcomp] + e[insurcomp,t]

        Estimated results:
                     |         Var     SD = sqrt(Var)
             ---------+-----------------------------
                  UW |    6.02e+07        7756.989
                   e |     1177982        1085.349
                   u |    4.14e+07        6436.189

        Test: Var(u) = 0
                                 chibar2(01) =   616.12
                              Prob > chibar2 =   0.0000
```

Appendix .9

```
. hausman model_fe model_re

                 ---- Coefficients ----
                |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                |   model_fe     model_re      Difference       Std. err.
----------------+----------------------------------------------------------------
             RP |   1.204984      1.20936       -.0043759       .0146691
----------------------------------------------------------------------------------
                          b = Consistent under H0 and Ha; obtained from xtreg.
           B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

    chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
            =   0.09
Prob > chi2 = 0.7655
```

Appendix .10

```
. xtserial UW RP

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
     F(  1,      11) =     72.917
           Prob > F =      0.0000
```

Appendix .11

```
. hettest

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of UW

H0: Constant variance

    chi2(1) =   2.48
Prob > chi2 = 0.1150
```

Appendix .12

Dependent Variable: UW
Method: Panel EGLS (Cross-section random effects)
Date: 06/11/23 Time: 11:03
Sample: 2011 2021
Periods included: 11
Cross-sections included: 12
Total panel (balanced) observations: 132
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RP	1.209360	0.083817	14.42861	0.0000
C	5997.958	1877.112	3.195312	0.0018

Effects Specification		
	S.D.	Rho
Cross-section random	6436.189	0.9723
Idiosyncratic random	1085.349	0.0277

Weighted Statistics

Root MSE	1073.420	R-squared	0.617211
Mean dependent var	487.8531	Adjusted R-squared	0.614266
S.D. dependent var	1741.572	S.E. of regression	1081.646
Sum squared resid	1.52E+08	F-statistic	209.6127
Durbin-Watson stat	0.461722	Prob(F-statistic)	0.000000

Unweighted Statistics

R-squared	0.396157	Mean dependent var	9607.394
Sum squared resid	4.76E+09	Durbin-Watson stat	0.014754