TAXATION AND FINANCE

FINANCIAL INTEGRATION AND FISCAL POLICY, IMPLICATIONS ON ECONOMIC GROWTH

Anca Florentina GAVRILUȚĂ (VATAMANU)
"Alexandru Ioan Cuza" University of Iaşi,
gavriluta.anca@yahoo.com

Otilia OPREA
"Alexandru Ioan Cuza" University of Iaşi
oty_roxy21@yahoo.com.

Paula Andreea TERINTE
"Alexandru Ioan Cuza" University of Iaşi,
paula.terinte@yahoo.ro

Abstract

This paper analyses the relationship between financial integration and fiscal policy, bringing the arguments which come to strengthen that in the context of financial integration, to influence economic growth, it is also necessary a consolidation of fiscal policy, and the stability of public finances. Basically, in our analysis, we want to build a research that stressed the importance of interplay between the variables involved, with the objective of economic growth. Our results reveal that there is a significant relationship between the three variables, namely financial integration, fiscal policy and economic growth and the international financial integration has increased the importance of financial sector policies. In addition, we find that financial integration affects the composition of government debt and enhances risk-sharing by increasing the share of foreign debt to the total. So, countries need strong macro-prudential policy frameworks. For our analysis, we retrieved data from the Eurostat and World Bank, including the EU 28-member states over the 2000-2014 period.

Keywords: *Financial Integration, Fiscal Policy, economic growth.*

INTRODUCTION

The approach of this paper provides a perspective in terms of fiscal and financial integration, considering that fiscal policy, besides introducing tax competition issues, concerns and connection issues on financial integration, with

the desire of economic growth. From a theoretical point of view, financial integration can be beneficial for much more reasons, basically, we can exemplify the fact that contributes to international risk-sharing and domestic consumption smoothing (Kose et al. 2007), it positively affects domestic investment and increases economic growth (Borensztein et al., 1998; Kose et al., 2010; Osada and Saito, 2010). Financial integration may also enhance the efficiency of the banking system and incentive the development of domestic financial markets (Chinn and Ito, 2008), and we have also a point of view it may that improve the quality of macroeconomic policies and enhance fiscal discipline (Obstfeld, 1996; Agénor, 2003).

In the most theoretical models, does not reach to a certain point of view regarding the impact of financial integration on fiscal policy. In fact, to provide a more pertinent research on the status of this area, we mention thatonly two studies analyse the (direct[1]) disciplinary effect of financial integration on fiscal policy and get opposite results. (Kim, 2003) finds that capital account liberalization has disciplinary effects on fiscal policy and contributes to reduce fiscal deficits. In contrast, (Tytell and Wei, 2004) find no evidence of the positive influence of financial integration on the budget balance. Both studies use a similar panel of data and apply IV methodology, but they differ for the measure of financial openness used in the analysis (*de facto* vs. *de jure*).[2]

Some studies analysed the relationship between fiscal policy and monetary integration. For example, Gali and Perotti (2003) find that that discretionary fiscal policy in EMU countries has become more countercyclical over time, following what appears to be a trend that affects the integration of other industrialized countries as well. Also, Hagen and Bruckner (2002), analysed the fiscal framework of EMU and show that it has not succeeded in safeguarding fiscal discipline, especially in the large member states.

There are other studies that consider that fiscal policy is related to different economic, social and cultural potential or territorial and administrative arrangement of individual countries, which prevents the full implementation of unified rules, valid for whole EU to a certain extent Benova (2014) and that a monetary union reduces the feasible divergence across countries in their present discounted levels of fiscal spending Hutchison and Glick (1993).

Other studies suggest that an important role has the audit variable, because all implemented policies require control to be validated, with the desire of economic growth. For example, according to the Fiscal Policy audit report (2016), his goal

---

[1] Few studies have indirectly assessed the disciplinary effect of financial integration. For instance, ManganelliandWolswijk (2009) find evidence of a disciplinary effect of financial integration on the euro zone bonds spreads.

[2] These studies use data for 54 (Kim 2003) and 62 (Tytelland Wei 2004) countries including 20 industrial economies over the period of 1950–1994 and 1975–1999, respectively. TytellandWei (2004) use a de facto measure of financial integration while Kim (2003) uses a de jure measure of capital account openness

was to evaluate the policies about the reliability of macroeconomic forecasts. Furthermore, the fiscal policy audit refers to an external professional audit of the central government finances from macro-economic perspective and follows the effectiveness of tax policy and the reliability of the tax policy base information.

On the other hand, according to other studies conducted in past and present, we bring into question a new point of view, arguing that, financial integration can be beneficial, can positively affects domestic investment and increases economic growth (Borensztein et al. 1998; Kose et al. 2010; Osada and Saito 2010). Regarding the implications of financial integration on improving tax policy, we can illustrate that in the context of liberalization, it requires a very rigorous fiscal discipline, and we can also interpreted this Financial integration as a signal that country's authorities wish to introduce and follow sound policies (Bartolini and Drazen, 1997). Finally, we also agree that the effect of financial integration relies upon national authorities' preferences and characteristics, because there may be preferentially for a lower incentive to pursue costly fiscal consolidations, case of lower quality of national institutions. Even if the empirical literature show us an inconclusive point of view in what regards the relationship between the variables discussed in this paper, to the best of our knowledge, we relief some studies who analyse these variables and gives an important theoretical background. (Kim, 2003) finds that capital account liberalization has disciplinary effects on fiscal policy and contributes to reduce fiscal deficits. In contrast, Tytell and Wei (2004) find no evidence of the positive influence of financial integration on public finance. Furceri andZdzienicka (2012), analysed the impact of financial integration on fiscal policy, and find that financial integration affects the composition of government debt. Gemmel, et al. (2011) affirms that the impact of fiscal variables on economic growth is ambiguous and depends on their nature.

This paper provides information regarding the relationship between financial integration and fiscal policy, in which case we quantified financial integration in terms of exchange rates and fiscal policy in terms of foreign direct investment, public debt and total fiscal pressure. Our approach aims to offer valuable information regarding the implications of these two variables on economic growth. The reminder of this paper is organized as follows: Section 1 provides the literature review, Section 2 provides methodology and data used in our study, Section 3 provides results and discussions of the analysis and in Section 4 provides the conclusions.

DATA AND METHODOLOGY

It is evident from the literature review section that several studies focus exclusively on the studying the link between financial integration and fiscal policy, with the result of what we call fiscal responsibility and other studies make

reference to the link between financial integration and economic growth, however research supporting the need for consolidation in the direction of the objective of this study. Even if they have not made a variety of studies in this direction, there has been a general practice to utilize the countries including 20 industrial economies over the period of 1950–1994 and 1975–1999, respectively. Tytell and Wei (2004) use a de facto measure of financial integration while Kim (2003) uses a de jure measure of capital account openness. Furceri and Zdzienicka, use an unbalanced panel of 31 OECD countries from 1970 to 2009, to show that financial integration has significant disciplinary effects by reducing fiscal deficits and (discretionary) spending volatility.

Based on variables used in the studies that covered the subject of financial integration and fiscal policy, for our research, the empirical analysis was performed based on a panel data regression between the dependent variable, economic growth, and the independent variables: Foreign direct investment (FDI); Exchange Rate (ER); Public Debt (PD);Total fiscal pressure calculated as Total taxes/GDP*100 (TFP) and Government bonds (GB), which will help us to create a clearer picture on the correlations between different variables. From the same point of view, we determined that the dependent variable that should be used will be the real GDP growth per capita and the independent variables will be: exchange rates of interest, foreign direct investment, public debt and total fiscal pressure.

We chose these variables because they have been used in other studies and more than that, making reference to the measurement of financial integration (Lane and Milesi-Ferretti, 2007) we find the following formula:

$$\text{FI}1_{lt} = \frac{FA_{lt} + FL_{lt}}{GDP_{1t}}$$

In this case, measure (FI1) is the share of the total stocks of external assets and liabilities to GDP, where FA and FL refer to the stock of foreign (debt, portfolio and direct investment) assets and liabilities, respectively.

The data used for our analysis focuses on the period 2000-2014, with an annual frequency. This information was obtained from the Eurostat databases and World Bank. The equation for the regression is expressed by the following formulas:

$$GDPgr = \alpha + \beta_0 FDI + \beta_1 ER + \beta_2 PD + \beta_3 TFP + \beta_4 GB + \varepsilon$$

Where:
GDPGR=Real GDP growth
FDI= Foreign direct Investment
ER = Exchange Rate

PD=PublicDebt
TFP= Total fiscal pressure-Total taxes/GDP*100
GB= Government bonds

In base of our research and based on previous studies we quantified financial integration in terms of assets and liabilities, taking into consideration: exchange rates, foreign direct investment, government bonds, public debt and total fiscal pressure. The purpose of our analysis is to show the implications of these two variables on economic growth. More exactly, we choose total fiscal pressure because financial integration can modify revenue structure and in this way, we can see the trend for long ter. Also, Furceri (2012) find that a higher level of financial openness is associated with higher taxes and public debt influence exchange rates. In terms of exchanges rates, we can notice that are the most important indicator of economic health and the most handled at government level Argy (1973). Regarding the motivation to take into account public debt and government bonds, it is well known that country deficits is less attractive to investors and can lead to inflation and higher taxation. Also, the assumption that governments bonds are perceived as net wealth by the private sector is crucial in demonstrating real effects of shifts in the stock of public debt. Barro (1974), find that the standard effects of "expansionary" fiscal policy on aggregate demand hinge on this assumption.

RESULTS

For the analysis of the relationship between the financial integration, fiscal policy and economic growth we use data from the Eurostat.

For the case of total fiscal pressure, we appeal to our own calculations according to the above formula. Our variable choice has its incentive from the empirical studies in the area. First, fiscal policies are determinants for foreign direct investments, and this statement has both economic foundation and demonstrated through the studies (Gondor and Nistor, 2012). Second, the choice of Public debt and total fiscal pressure is motivated by the fact that fiscal policy and its implications on financial integration have a specific conjuncture that produces permutations among these variables.

Descriptive statistics of the variables are available in Appendix A. Analysis of indicators aimed at central tendency, exemplified through the media reveals that the average value: -1.50 for GDP growth is due to negative values in some countries such as Cyprus, Finland and Croatia, 10.70 for Public debt, for fiscal pressure we have 0.26 and for exchange rates 89.58. The case of negative value of GDP growth we should mention that deficits due to the preponderance of values of the 28 countries. In the same sense, distribution of public debt is much dispersed that vary from the average level of 39.16905% of GDP positively and negatively.

We can say that 68.2% of the total public debt distribution is between ± σ x⁻ respectively 74.2643 ± 39.16905% of GDP and distribution of the total fiscal pressure is one less dispersed that vary from the average level of 0.06395% positively and negatively. We can say that 68.2% of the total tax burden is between ± σ x⁻ 0.3618 ± 0.006395% respectively.

Table. 1. Results of regression estimation of economic growth and fiscal policy for the EU- Annual Observations

Dependent Variable: GDPGR
Sample: 2000 2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER	-0.101194	0.019806	-5.109148	0.0000
GB	-0.462495	0.090007	-5.138414	0.0000
INV	0.235717	0.045866	5.139256	0.0000
PD	-0.019765	0.006334	-3.120593	0.0019
TFP	-0.189086	0.030300	-6.240506	0.0000
C	16.70673	2.701959	6.183191	0.0000
R-squared	0.322875	Mean dependent var		1.982619
Adjusted R-squared	0.314697	S.D. dependent var		3.811584
S.E. of regression	3.155345	Akaike info criterion		5.150255
Sum squared resid	4121.867	Schwarz criterion		5.207973
Log likelihood	-1075.554	Hannan-Quinn criter.		5.173068
F-statistic	39.48166	Durbin-Watson stat		1.197293
Prob(F-statistic)	0.000000			

Source:Authors calculation

Our analysis highlights the fact that all factors used in the regression model have what can be considered as the expected significant coefficient signs, being also explained by economic issues. Referring to exchange rates, we can notice that there are significant and negatively correlated with economic growth, which means the higher is the level of exchanges rates, the lower is growth. The explanation in this case is that a higher level of interest rates will increase the ratio Public debt/GDP.In other words, for example, a 5% depreciation of the Romanian leu against the euro may add the equivalent of 1% of GDP to public debt.Our results are in line with other studies such as Furceri and Zdzienicka (2012), financial integration affects the composition of government debt.

The investment rate (INV) has a positive and significant at the 1 percent level, this suggesting that the higher is the investment rate, the higher the growth. Our results are in line with other studies that suggest that financial integration can be beneficial, can positively affects domestic investment and increases economic growth (Borensztein et al. 1998; Kose et al. 2010; Osada and Saito 2010).

In case of government bonds rate (GBR), our analysis highlights that has the unexpected negative correlation to GROWTH and is significant at the 1 percent level. This interesting result, relate the fact that government bonds will be perceived as net wealth only if their value exceeds the capitalized value of the implied stream of future tax liabilities.

In terms of total fiscal pressure, who is one of the most common indicators for public sectors dimension, we found that is negatively correlated with economic growth, thus being in line with the economic theory. Furthermore our findings suggest that financial integration can modify revenue structure and in this way, we can see the trend for long term in our results are in line with other studies such as Furceri (2012) that showed that a higher level of financial openness is associated with higher taxes and public debt influence exchange rates.

In order to avoid the autocorrelation,   we conducted the correlation table, The Pearson's correlation coefficient that represents the covariance of the two variables divided by the product of their standard deviations, as presented in Appendix 2. Depending on the size of Pearson between of two variables, results a low negative correlation between GDP growth and the level of fiscal pressure, Pearson coefficient of-0.273 for risk of 1%. We also can see a direct and strong correlation between GDP growth on the one hand and foreign direct investment as a percentage of GDP because the Pearson coefficient is 0.388 with a probability of 99%. Regarding the exchange rates and fiscal pressure, we can remark a low negative correlation between these two variables, Pearson coefficient of-0.250 for a risk of 1%.

CONCLUSIONS

Our analysis suggests the fact that all factors used in the regression model, have what can be considered as the expected significant coefficient signs, there is a significant relationship between the variables, namely financial integration, fiscal policy and economic growth and we considered that financial integration affects the composition of government debt, and only a consolidation of fiscal policies and specific instruments, would satisfy the desire of economic growth. We found that financial integration in fact contributes to growth, it brings capital and competition, foreign direct investments, management expertise and new technology but also can be highly volatile, and so, this financial integration can

improve the management of fiscal policy, free capital movement may reward good policies and penalize bad ones, all this can conduct to fiscal discipline.

Even if in practice, the impact of financial integration on fiscal policy is less obvious. Indeed, the disciplinary effect strongly depends on how risk premia change in relation to countries' fiscal positions and whether financial integration engages a country in international risk-sharing and consumption smoothing. On the other hand, we realize that increase public and private debt in many countries from developed world, it is a situation dramatically accentuated by the crisis. Now, for many of these countries, economic policy is dominated by the need to correct certain debts which are more difficult to finance and refinancing. In other words, the international financial integration has increased the importance of external borrowing. Furthermore, we found a direct correlation between financial integration and fiscal policy and in the context of financial integration, to influence economic growth, it is also necessary a consolidation of fiscal policy, and the stability of public finances-we need to build strong frameworks for macroeconomic and financial sector policies. Capital flows can be large and volatile, global credit cycles might not fit each country's needs always, in many cases, financial integration had run ahead of regulatory and prudential frameworks, and international coordination efforts and we find a lot of liquidity-credit booms in some markets.

Taking the above caveats into account, this study demonstrates that deepening financial integration across a wide range of countries can help countries insure each other, but there are many challenges ahead, which means that each countries need strong macro-prudential policy frameworks.

References

1. Agénor, Pierre Richard. "*Benefits and costs of international financial integration: theory and facts.*" The World Economy 26.8 (2003): 1089-1118.

2. Anon, 2016. Reliability of macroeconomic forecasts.

3. Argy, Victor, and ZoranHodjera. "*Financial integration and interest rate linkages in industrial countries, 1958-71.*" Staff Papers 20.1 (1973): 1-77.

4. Bartolini L, Drazen A (1997) *Capital-account liberalization as a signal*. Am Econ Rev 87(1):138–154

5. Bartolini, Leonardo, and Allan Drazen. "*When liberal policies reflect external shocks, what do we learn*?." Journal of International Economics 42.3 (1997): 249-273.

6. Benova, E., 2014. Fiscal policy of Slovak republic in the process of European. , pp.24–27.

7. Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee. "*How does foreign direct investment affect economic growth*?." Journal of international Economics 45.1 (1998): 115-135.

8. Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee. "How does foreign direct investment affect economic growth?." *Journal of international Economics* 45.1 (1998): 115-135.

9. Chinn, Menzie D., and Hiro Ito. "*A new measure of financial openness.*" Journal of comparative policy analysi*s* 10.3 (2008): 309-322.

10. Claessens, Stijn, M. AyhanKose, and Marco E. Terrones. "Financial cycles: what? how? when?." *NBER International Seminar on Macroeconomics 2010*. University of Chicago Press, 2010.

11. Daniel, B.C. et al., 2002. Fiscal Policy in the European Monetary Union. *Monetary and Economic Studies*, (961), pp.123–166. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1333322.

12. Ferris, Stephen P., Kenneth A. Kim, and PattanapornKitsabunnarat. "The costs (and benefits?) of diversified business groups: The case of Korean chaebols." *Journal of Banking and Finance* 27.2 (2003): 251-273.

13. Furceri D (2007) *Is government expenditure volatility harmful for growth?* A cross-country analysis. Fisc Stud 28(1):103–120

14. Furceri, D., and Zdzienicka, A. (2011). *Financial Integration and Fiscal Policy*, 1–25.

15. Furceri, Davide, and Aleksandra Zdzienicka. "How costly are debt crises?." *Journal of International Money and Finance* 31.4 (2012): 726-742.

16. Gemmel, N., R. Kneller, and I. Sanz, (2011). *The Timing and Persistence of Fiscal Policy Impacts on Growth: Evidence from OECD Countries*. Economic Journal, 121(550), F33-F58. ISSN 1468-0297.

17. Glick, R., 1993. *Fiscal Policy in Monetary Unions " Implications for Europe. ,* (December 1991), pp.39–65.

18. Obstfeld M (2009) *International finance and growth in developing countries: what have we learned*? NBER Working Papers 14691.

19. Obstfeld, Maurice, and Kenneth S. Rogoff. *Foundations of international macroeconomics*. Vol. 30. Cambridge, MA: MIT press, 1996.

20. Osada M, Saito M (2010*) Financial integration and economic growth*: an empirical analysis using international panel data from 1974–2007. Bank of Japan Working Paper Series, No.10-E-5.

21. Osada, Mitsuhiro, and Masashi Saito. "Financial integration and economic growth: An empirical analysis using international panel data from 1974-2007." *Research and Statistics Department, Bank of Japan* (2010).

22. Owen, R.F. et al., 2004. JEL classification numbers: *Most*, 2004, pp.1–29.

23. Tytell, Irina, and Shang-Jin Wei. "*Does financial globalization induce better macroeconomic policies*?." (2004).

Appendix

Appendix 1.
Descriptive statistics.

	REAL_GDP_GROWTH	FOREIGNDIRECTINVESTMENT_	EXCHANGE_RATES	PUBLIC_DEBT__PIB_MIL	TOTAL_FISCAL PRESSURE
Mean	2.271429	6.879804	102.6550	71.76154	0.362214
Median	2.000000	1.907199	99.72000	67.45000	0.357000
Maximum	8.500000	109.9059	130.6800	179.7000	0.480000
Minimum	-1.500000	-1.637367	89.58000	10.70000	0.264000
Std. Dev.	2.280815	20.60831	9.022257	39.56350	0.063553
Skewness	1.155246	4.702277	1.449009	0.947054	0.241552
Kurtosis	4.768489	24.00090	4.751428	3.712651	1.987735
Jarque-Bera	9.876909	617.7309	13.37701	4.436811	1.467748
Probability	0.007166	0.000000	0.001245	0.108782	0.480046
Sum	63.60000	192.6345	2874.340	1865.800	10.14200
Sum Sq. Dev.	140.4571	11466.97	2197.830	39131.76	0.109053

Appendix 2.Pearson`s Correlation

Correlations

		Real GDP growth per capita	Exchange of interest rates	Government bonds rates	Investments % GDP	Debt % GDP	Total fiscal pressure
Real GDP growth per capita	Pearson Correlation	1	-.122*	-.255**	.388**	-.386**	-.273**
	Sig. (2-tailed)		.013	.000	.000	.000	.000
	N	420	420	420	420	420	420
Exchange of interest rates	Pearson Correlation	-.122*	1	.187**	.137**	-.220**	-.250**
	Sig. (2-tailed)	.013		.000	.005	.000	.000
	N	420	420	420	420	420	420
Government bonds rates	Pearson Correlation	-.255**	.187**	1	-.113*	.198**	-.268**

	Sig. (2-tailed)	.000	.000		.021	.000	.000
	N	420	420	420	420	420	420
Investments % GDP	Pearson Correlation	.388**	.137**	-.113*	1	-.537**	-.199**
	Sig. (2-tailed)	.000	.005	.021		.000	.000
	N	420	420	420	420	420	420
Debt % GDP	Pearson Correlation	-.386**	-.220**	.198**	-.537**	1	.324**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	420	420	420	420	420	420
Total fiscal pressure	Pearson Correlation	-.273**	-.250**	-.268**	-.199**	.324**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	420	420	420	420	420	420

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 3.One-Sample Test, ANOVA

One-Sample Test

	Test Value = 0.05					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Real GDP growth per capita	10.391	419	.000	1.9326	1.567	2.298
Exchange of interest rates	248.543	419	.000	100.43821	99.6439	101.2325
Government bonds rates	45.778	419	.000	4.25650	4.0737	4.4393
Investments % GDP	115.921	419	.000	22.56019	22.1776	22.9427
Debt % GDP	35.424	419	.000	54.3495	51.334	57.365
Total fiscal pressure	127.166	419	.000	36.0076	35.451	36.564

Sig value (0.000) is less than the threshold alpha (0.05), which entitles us to reject the null hypothesis and accept that there is a significant relationship between GDP growth and the independent variables taken into account, we also checked: Wald Test, ANOVA, Heteroskedasticity, Autocorrelation

Appendix 4. Box plot representation of dependent variable
var 1 Real GDP growth per capita
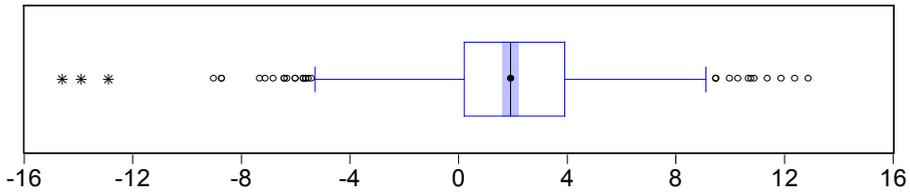
Appendix 5. Histogram-Normality test
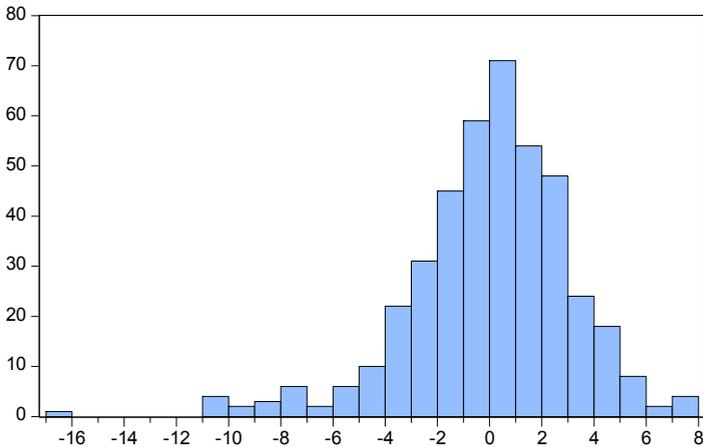
Series: Standardized Residuals	
Sample 2000 2014	
Observations 420	
Mean	-5.22e-15
Median	0.343328
Maximum	7.518710
Minimum	-16.21074
Std. Dev.	3.136462
Skewness	-0.926993
Kurtosis	5.508315
Jarque-Bera	170.2559
Probability	0.000000