Investigation Of Economic Stability In Optimum Currency Area

Mitra Saboonchi, Hamid Shahrestan Kambiz H. Kiyani, Farhad Ghaffari

Abstract: In Choosing the right currency system has always been one of the concerns of economic policymakers in all countries. For this reason, theorists on various economic theories have sought to facilitate policy makers from various perspectives. Comparison of the consequences of floating and fixed exchange rates is very important in practice. Accordingly, the present study examines the role of economic stability of Euro area member countries in the emergence of regional currency crisis in optimum currency area. Therefore, this study using a proposed model and estimating it with panel data method was carried out. The results show that the level of economic development of countries has played a key role in the multiplicity of economic factors affecting the intensity of trade fluctuations resulting from the currency crisis in optimum currency area. The results of the model estimation in countries with low GDP per capita in the Euro area indicate that increased consumption of final goods, export of industrial goods, domestic savings and inflation will reduce trade fluctuations in these countries. While the increase in fixed capital, labor force participation, government current expenditures, the ratio of credit created by the banking sector to GDP, and the weighted average tariff on all commodities have brought about trade fluctuations. While the increase in fixed capital, labor force participation, government current expenditures, the ratio of credit created by the banking sector to GDP, and the weighted average tariff on all commodities, has led to increased trade fluctuations.

Index Terms: optimum currency area, Euro area, economic stability, GDP per capita

1. INTRODUCTION

Choosing the right currency system has always been a concern of economic policymakers in all countries. For this reason, theorists based on various economic theories have sought to facilitate policy makers from various perspectives [1]. In countries where the exchange rate is highly volatile, investment schemes, especially those that import large amounts of machinery and equipment through foreign imports and the duration of the project, given the length of the project implementation period, is subject to high risks and uncertainties due to exchange rate increased and because of the high exchange rate fluctuations (exchange rate raises) and financial difficulties, they are not put into operation during the forecast period. Problems caused by rising exchange rate fluctuations, especially when the project is carried out through obtaining foreign exchange facilities through banks, have created an uncertain environment for investors. And it makes it easier for investors to make future investment decisions and they probably suffer unexpected damages when the exchange rate rises over time, companies that do not invest heavily in foreign exchange facilities and export earnings from their exports actually default on bank refunds. Assuming a Marshall-Lerner condition, the reduction in the exchange rate increases the relative competitiveness of domestic goods [2]. Many theories of regional convergence have been influenced by the experiences and ups and downs of the European Union. Serious Thoughts on Creating an Economic and Monetary Union (EMU) in Europe go back to Year 2; this will allow the members of the European Community to gradually increase coordination in their economic and financial policies and reduce exchange rate fluctuations and finally resolve these issues forever [3]. The European monetary system was created as a means of further stabilizing the exchange rate within Europe, and was therefore used as a basis for more favorable economic growth. In line with this, the euro area countries adopted centralized monetary and currency policies, but economic and fiscal policies remained in the hands of member states and were implemented in a decentralized manner [4]. The Eurozone crisis has revealed certain shortcomings of the EMU, such as its vulnerability to asymmetric shocks and its inability to act as predicted by the theory of optimum currency areas. Most of the implemented and proposed stabilization measures seek to remedy this vulnerability by promoting economic integration, further fiscal discipline and debt redemption [5]. The economic stability loss from foregoing exchange rates and national monetary policies is greater than monetary efficiency gains – especially for European periphery countries. European economic integration is still in its infancy and re-quires further action to reduce its future cost and thus make the EMU more resistant to macroeconomic disturbances. Awareness of the necessary steps to be taken has slowly grown. Efforts to overcome the current economic crisis will simultaneously improve the EMU's long-term performance as a currency union [6]. Accordingly, the present study examined the role of economic adjustment of euro area member countries in the emergence of regional currency crisis. For this purpose, after presenting the literature of the subject, first we discuss the theoretical foundations of currency systems and the theory of optimal currency zone, how the euro area was formed and the currency crisis in the region. Then, per capita GDP is used to identify the differences between countries' levels of development, the result of their different economic structures. Accordingly, Eurozone member countries are categorized into two groups in order to compare closely the severity of the impact of factors affecting trade fluctuations between each group of countries, indicating economic inequality in the countries in the region. Finally, based on the literature of the subject and the theoretical foundations of the generalized Mandel-Fleming model, a suitable model for examining the different effects of economic structure on trade fluctuations among euro area countries has been selected and its results analyzed. This is important because one of the main goals of optimal exchange rate policy and optimal monetary zone is to stabilize trade and currency fluctuations. Also, in order to provide solutions for economic adjustment between regions, the effects of reducing or increasing the economic structure of the member states of the region, including Germany selected in the present study in terms of GDP and balance of payments of the selected model country, have been examined.

2 RESEARCH BACKGROUND

In a study, Kollman et al. [7] examined the factors affecting the current account of Germany and studied its effect on other

euro area member states. They examined Bayesian methods; public balance and the effects of macroeconomic shocks on the current account of Germany were used and compared with those of other euro area and non-euro area countries. Compared to other countries in the region, there is an increase in the amount of savings, which they say is due to the fact that the German downturn and its impact on household savings have led to a decline in household consumption as a result of increased German income and output, as well as increased government spending and German GDP growth and current account surplus reduced, but its effects are poor. Jennifer and Kurt (2013) implemented and proposed stabilisation measures seek to remedy this vulnerability by promoting economic integration, further fiscal discipline and debt redemption [8]. Masini (2014) aims at investigating such relationships in a historical perspective, with a special reference to the evolving role of endogenous and exogenous criteria to the study of OCA. The historical reconstructions of the theories of Optimum Currency Areas (OCA) are usually biased by the underlying theoretical and policy orientation of their authors, they often provide a sort of internalize explanation of advancement in economic theory and sometimes neglect the influence of particular events and policy debates on the theoretical discussions [9]. Grauwe and Foresti, (2015) suggest that Eurozone countries face a policy trade-off among: 1) a common rule imposing co-movements in fiscal policy; 2) financial stability; and 3) financial integration. They provide empirical evidence documenting the existence of such a trade-off in the period characterized by the financial crisis and by the sovereign debt crisis. Then, they conclude that the intense fiscal rules that have been introduced in the Eurozone after the emergence of the debt crisis reduced the capacity of national governments to deal with asymmetric shocks and became incompatible with either free capital mobility and/or financial stability [10]. Gunther (2017) analyses the common European monetary policy based on a Mises-Hayek over-investment framework, which is combined with the theory of optimum currency areas. It shows how since the turn of the millennium a too expansionary monetary policy contributed to unsustainable over-investment booms in the periphery of the European Monetary Union, and more recently in Germany, dependent on the national fiscal policy stances. It is argued that the ECB's ultra-loose monetary policy as a crisis therapy puts a drag on long-term growth by conserving distorted economic structures. To preserve political stability a timely exit from the ultra-expansionary monetary policy is postulated [11]. Frydrych and Burian (2017) evaluates the European monetary convergence for period 2001 and 2013. The paper is theoretically based mainly on the research of Bayoumi and Eichengreen (1997), and Horváth and Komárek (2003). Results of the analysis point to relatively stable values of indices in the period, but their further examination of the development in time reveals a steady deterioration in the case of almost all economies. According to the results of comparison, methodological approach of the OCA indexes cannot be considered reliable because minor differences in calculation give different outputs [12].

2 THEORETICAL FOUNDATIONS

Structure of Economy and Theory of Optimum Currency Area

The overview of fixed exchange rates versus flexible exchange rates is the same optimal exchange rate. The optimal exchange rate region refers to the region in which the exchange rate is fixed in order to optimize the balance of payments and also because of the effectiveness of the domestic macroeconomic policy, but with out-of-region trading party's flexible exchange rates the verdict is acceptable [13]. The theory of optimum currency areas pioneered by Mundell was further complemented by McKinnon and again by Kenen [14]. The theory addresses the question of under which circumstances a country benefits from membership in a currency union. According to the OCA theory, a country that considers membership in a currency union has to balance the economic stability loss (i.e. losing national monetary policy) against the monetary efficiency gain (i.e. a competitiveness gain due to a decline in the general price level, stimulated aggregate demand and enhanced exports) of a single currency. Baldwin and Wyplosz stress that the loss of economic monetary policy sovereignty becomes most significant for members of a currency union if poorly integrated member countries face asymmetric macroeconomic shocks [15]. In particular, an economic shock is considered to be asymmetric if only one part of the currency union is hit by the shock while the other part is spared or if member countries differ widely in terms of the shock's impact on their economies. Hence, if some countries in a currency union experience a positive (negative) demand shock, this would lead to disequilibrium, as output and prices in those countries would be too high (low). The union's common central bank could then increase its money supply and help countries to recover economic strength, but only at the cost of inflation. Thus, in the presence of an asymmetric shock, the central bank's monetary policies to overcome the shock in some countries would come at the expense of others. According to Clement et al., adjustment to asymmetric shocks must occur through labor mobility, changes in price and wage levels, and fiscal transfer payments among member states [16].

The relationship between euro areas and currency crisis

Although the creation of the European Monetary Union has deep historical roots, the unpredictable shock of the unification of the two Germans in October led to sufficient political impetus for the Maastricht Treaty and the legal basis and precise design of the current euro area in year 2. Although the design and implementation of the EMU depended on the explicit requirements of the behavior and economic conditions of the applicant countries, the economic status of the founding countries of the union was not homogeneous at the outset. Therefore, it was impossible to impose strict and strict objective financial criteria for membership in the euro area politically. The EU, of course, ratified the Growth and Stability Pact in year 2. The treaty imposed a fiscal deficit ratio of 2% and a foreign debt ceiling of 5% on member states' fiscal policies. The treaty sought to oblige member states to adopt regular fiscal policies, thereby reducing the risk of monetary instability in the euro area. Although, in practice, these values were not constant, because Article C104 of the Maastricht Treaty states that countries can exceed the budget deficit target of 2%, provided that "this proportion has been significantly and consistently reduced to a level close to the reference value." Also, euro area countries can exceed the target of 3% of gross external debt, provided that "it is declining enough and approaching the reference value at an acceptable rate". Therefore, some member states, in defiance of these guidelines, set the stage for a new crisis. Among the euro-zone countries, Germany was an exception, since it

immediately introduced major reforms to its economy, especially in the labor market and pension system, shortly after the introduction of the euro. As a result, Germany, traditionally the most powerful and competitive country in the European Union, increased its euro area in the first decade of its formation and became much stronger than other member states. As a result, the current (economically) sub-account imbalances in the south of the euro area with Germany and other northern countries over the years have widened over the years, requiring them to regain competitiveness and maintain trade balance. The fastest and most effective traditional way of restoring foreign competitiveness is for a country to devalue its currency against foreign currencies, while within a monetary union member states are unable to depreciate their currency against their trading partners. Also, lowering their competitiveness did not allow for increased production by exports increased. As the lessons learned from the financial and economic crisis unfold, the EU intensified its macroeconomic oversight by introducing the process of macroeconomic imbalances (MIPs) in Year 2. The purpose of the MIP is to identify potential risks to stabilizing the macroeconomic environment at an early stage and ensuring that Member States respond appropriately. Accordingly, MIP has adopted and adopted a graded approach. The first step is: Tests to identify potential imbalances in a ranking of eleven indicators. The eleven indicators are: current account balance, effective real exchange rate, nominal unit labor costs, market export share, and unemployment rate, housing price developments, private sector credit, private sector debt, government debt and financial sector debt. MIP has set threshold values for each index. Announces the violation of one or more values of the warning provinces and indicates that the European Commission needs further analysis to investigate this in depth. Does the commission determine whether or not there is an imbalance or excessive imbalance? If the European Commission concludes that there is widespread imbalance in a Member State, it may, in the third stage, propose to the Council of Europe that the Member State consider and draw up a plan for corrective action. Following the adoption and approval of the proposal by the Council, the European Commission and the Council of Europe control its instruments. Repeating failure to act and initiate reform plans can lead to financial sanctions in a fourth step.

3 PROPOSED MODEL

Based on the literature on the subject and the theoretical foundations of the optimal currency region, it can be deduced that if there is more coordination among countries in policy making, the fixed rate system will have a greater chance of success. However, structural differences between countries can make it difficult to avoid exchange rate changes. This is important because one of the criticisms of the fixed exchange rate system states that if there is a discrepancy between the economic structure of the countries and the crisis in one country, the shock is quickly transmitted to other countries in the region. A larger economic crisis will result in the entire currency area. This is a topic that Krugman examined for the first time in six years as a link between speculative attacks and the balance of payments crisis. He attributed the weak economic structures of the countries to such crises and showed how the relationship between economic conditions and the exchange rate would collapse the stability of the domestic currency. Accordingly, the study of the impact of economic variables on current account deficits, in addition to identifying the effects of the persistence of current account deficits in countries, also examines how to formulate and adopt appropriate macroeconomic policies to achieve a balance in the external sector and reduce the current account deficit is clear. Accordingly, a comparison of the different effects of the structural variables of the economy on the demand and supply side of the economy on the trade fluctuations of countries, which eventually led to the transfer of weak countries trade fluctuations to the whole region and the emergence of the currency crisis in the euro area, can be seen. It shows the homogeneity of the economic structure among the countries of the euro area. Finally, in order to investigate the consistency of the economic structure in realizing the Mandel-Fleming model and the stability of the current account and the optimal currency region, the following model is considered.

VEX =f (C,G,S,I, CR,TN , Y ,INF,L)

VEX: balance of payments fluctuations in goods and services;
C: consumption of finished goods;
S: total domestic savings;
I: Total fixed capital formation;
G: current government spending;
CR: The ratio of domestic credit created by the banking system to GDP;
TW: weighted average tariff on all goods;
X: Export of industrial goods;
INF: Inflation 1
L: labor force participation rate.

Thus, in the structural variables side of demand, the amount of consumption, investment, government savings and current expenditures, industrial exports, average weighted tariffs on all commodities, and in the supply sector, the labor force participation rate as an indicator of structural changes on the supply side the economy is intended. In addition, the ratio of banking sector lending to GDP is also considered in the variable selection model affecting the balance of payments fluctuations, as increased lending to the private sector and credit growth may cause a crisis in the banking sector. Be. Ineffective management to direct private sector savings to highly economically justified private investments is likely to lead to increased banking crises. Consequently, banking crises will be accompanied by a decline in confidence in the performance of domestic financial institutions, which will reduce domestic savings and dramatically increase capital outflows and exacerbate the financial crisis in countries. The importance of asset and debt management is that banks are actually financial institutions that have to balance between resources and the monetary use of their activities that can not only maintain the value of assets but also increase the efficiency and effectiveness of resources and expenditures to continue their financial lives. In other words, proper bank capital and optimal asset management can act as a buffer against negative shocks. It is important to note that the statistical information needed to estimate the selected model is obtained from the World Bank statistics for the period of 1–2, and the panel data econometric method is used to estimate the model. However, before proceeding to the model estimation and analysis of their results, it is necessary to consider how to classify and select the countries of the euro area as spatial sections of the panel data econometric method. The European Union is an economic-political union made up

of 28 European countries. However, out of the EU member states, only 19 have chosen the euro as the single currency and the European monetary union. Among the 19 Eurozone countries, based on how the Eurozone is formed and the experience of member countries in dealing with the currency crisis and their contribution to its intensification, the countries in the region do not have a homogeneous economic structure and development. Accordingly, the first member states of the region are grouped according to the level of GDP per capita, which is one of the key indicators to assess the degree of economic development of a country.

Survey of GDP per capita among euro area member countries

Eurozone GDP per capita grew by an average of 0.8 percent in 2018 compared to 2017. Germany, Spain and Sudan have the highest per capita GDP among these countries. Latvia and Malta had the lowest growth.

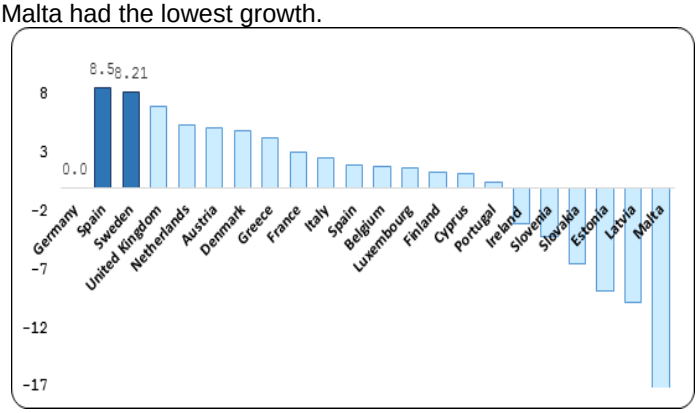

Figure 1: *Per capita GDP growth in the euro area member countries in 2018 compared to 2017*

Fig 1. World Development Indicators database, World Bank, 1 July 2018Germany had the highest GDP growth (8.5 percent), followed by Spain (8.21 percent). These countries can be categorized into two groups based on the per capita GDP of the Eurozone member states, with an emphasis on the level of the Eurozone currency crisis in 2017 and 2018: First group including: Germany, Spain, Sweden, United Kingdom, Netherlands, Austria, Denmark, Greece, France, Italy, Spain, Belgium, Luxembourg, Finland, Cyprus, and PortugalSecond group including: Malta, Slovenia, Slovakia, Estonia, Latvia, and IrelandIt is worth noting that GDP per capita decreases from group I to group II, respectively. Next, the structural factors affecting the trade fluctuations of each group of countries are examined first. Then, the difference between the variables of the selected pattern in each of the second group countries with one of the first group (Germany) is calculated and the effect of increasing or decreasing these differences on the trade fluctuations of the countries is examined. Considering these structural differences and their effects on trade fluctuations, it is important that we can provide the necessary solutions for further economic adjustment and reduction of trade fluctuations because, as stated, Considering the debt crisis, it is important for European countries that, according to critics of the fixed exchange rate system in the region, this crisis could spread to other European countries.

Commercial Instability Measurement Index

In this section, using time series technique, first the instability index is estimated and then its reliability is evaluated and finally the model is estimated using appropriate methods. These indices of measurement of instability are: Conditional Heterogeneous SD and Moving Average SD. It should be noted that according to Kotteh (1994), Vergil (2002), Clark et al (2006), there is no theoretical basis for the preference of one index over another. In empirical studies, researchers have used a variety of indicators. While Kotteh (1994) points out that the most commonly used index is GARCH (1, 1), especially in recent studies. In the present study, the GARCH index (1, 1) was used to reduce the instability of euro area countries' balance of payments.

An EGARCH or GARCH pattern was proposed by Nelson (1991). This template is another method for formulating conditional variance, which is:

(1) $$\ln \sigma^2_t = \omega + \alpha \left| \frac{u_{t-1}}{\sigma_{t-1}} \right| + \gamma \frac{u_{t-1}}{\sigma_{t-1}} + \beta \ln \sigma^2_{t-1}$$

or

(2) $$\ln \sigma^2_t = \alpha_0 + \alpha_1 \left| \frac{u_{t-1}}{\sqrt{\sigma^2_{t-1}}} \right| + \gamma \frac{u_{t-1}}{\sigma_{t-1}} + \beta \ln \sigma^2_{t-1} \quad ,$$

$$\alpha_0 = \omega - \alpha \sqrt{\frac{2}{\pi}}, \alpha_1 = \alpha$$

This model has several advantages. First, in this model, the dependent variable σ_t^2 is logarithmic form, so the coefficients of the right variables can be positive or negative. Therefore, there is no need to apply non-negative constraints on the coefficients. Second asymmetric impulse effects in this model are considered. Because γ is a coefficient of u_{t-1} that u_{t-1} can be positive or negative. While α is a coefficient that considers only absolute magnitude $|u_{t-1}|$.

If $\gamma = 0$, then the model is symmetric and otherwise is asymmetric. The effect of positive impacts is equal to the $\alpha + \gamma$ coefficient and the effect of negative impacts is equal to the $\alpha - \gamma$.

Therefore, the effect of the positive and negative impulses is the same if they are $\gamma = 0$.

In Table 2, the first equation is the conditional mean under which we have conditional variance equation. At the bottom of the table, criteria such as R^2 , etc. is given for the conditional mean equation.

In the conditional variance equation C (3) represents the constant value or the width of the origin (α_0) in equation (2), C (3), C (4) and C (5) represent the value α_1 , γ and β in equation (2), respectively. Gives γ is significant and positive, so the model is asymmetric and the effect of positive impulses is more than the effect of negative impulses.

Table 1*: Estimation of the conditional mean equation and conditional variance equation GARCH (1.1)*

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	2.56784	0.354678	7.239919	0.0000
EXCHANG(-1)	0.88345	0.10543	8.379493	0.0000

	Variance Equation			
C(3)	2.43245	0.45367	5.361716	0.0000
C(4)	1.23415	0.378473	3.260866	0.0000
C(5)	0.64235	0.136783	4.6963438	0.000
R-squared	0.823456	Mean dependent var		38.65436
Adjusted - squared	0.818534	S.D. dependent var		35.83205
S.E. of regression	14.54329	Akaike info criterion		8.842394
Sum squared resid	5673.674	Schwarz criterion		8.134976
Log likelihood	154.034 -	Hannan-Quinn criter.		7.974538
Durbin-Watson stat	1.765345			

References: Researcher

Distinction of positive and negative impulses

To distinguish between the effects of positive impacts and negative impacts on the index of the stock market, three nonlinear justifications for the exchange rate variable are presented: (1) non-symmetric determination (2) specification of scale (3) specifying the net increase of the exchange rate. In this paper, the method of specifying the exchange rate scale is used as follows:

The mean of the equation for the exchange rate variable

$$E_t = \alpha_0 + \alpha_1 E_{t-1} + \alpha_2 E_{t-2} + \alpha_3 E_{t-3} + \alpha_4 E_{t-4} + e_t$$

$$e_t \left| I_{t-1} \right. \approx N(0, h)$$

$h_t = \gamma_0 + \gamma_1 e_{t-1}^2 + \gamma_2 h_{t-1}$ equation of variance for the exchange rate variable

$$SEPI_t = MAX\ (0, \hat{e}_t / \sqrt{\hat{h}_t})$$

$$SEPD_t = MIN\ (0, \hat{e}_t / \sqrt{\hat{h}_t})$$

Where E_t is a change in the exchange rate and h_t is conditional variance. The equation of the mean AR and the variance equation GARCH (1 and 1). $SEPI_t$ shows the increased scaled exchange rate and $SEPD_t$ shows the decreased depreciation of the exchange rate scaled. According to this provision, the increase in exchange rates depends on the exchange rate fluctuation scale (h_t). An increase in the exchange rate that occurs after a period of price stability has had more effects than the exchange rate dropped in the previous period. The advantage of the model is that when plotting the positive and negative impulses of the real exchange rate, it also takes into account the environment in which the price changes, which implies that the same changes in exchange rates in different environments, have different effects on the industry index Stock market. For the nonlinear specification of the real exchange rate, the method of verifying the scale with regard to the non-linearity of the real exchange rate variable should create two SEPI series (increase currency scaled) and SEPD (decrease depreciated exchange rate) for exchange rate changes. To create SEPI and SEPD, as previously stated in the scale specification, EGARCH (1.1) is estimated for the exchange rate variable. Then the standardized wastes obtained this estimate and compared it with zero. Maximum between zero and these wastes is selected and the resulting series is named SEPI. Thus, in the series, for each negative waste is zero. The other series is SEPD, which is to replace it with zero positive waste instead of its own negative waste. The test framework is based on the autoregressive data panel model as follows:

Where INDEX is a dependent variable and independent variables including INDEX (INDEX), oil price (Oil), exchange rate (EXCHANGE), scaled exchange rate increase (SEPI), scaled exchange rate decrease (SEPD), intergroup heterogeneities (Z_i) and ε_{it} the component of the error are represented.

4 RESULTS

Results of panel-data unit-root tests

In order to study the variance of the variables, the PANEL-data unit-root tests| of Levin, Lin and Chu (LLC), Im, Pesaran and Shin (IPS), Phillips & Perron (PP) and Dicky Fuller (ADF) test were used. The results of the tests are presented in Table 3.

***Table2: Results** of panel-data unit-root tests*

Variables	Length of interruption	LLC test statistics	IPS test statistic	ADF test statistic	PPF test statistics
(Index)	0	-6.5423 * (0.0000)	-8.6291 (0.0000)	23.6723 (0.0000)	37.4582 (0.0000)
(Exchange)	0	- 13.9301 (0.0000)	- 14.2341 (0.0000)	94.3465 (0.0000)	110.6784 (0.0000)

* Above table is numbers statistical coefficients of tests for variables and numbers in parentheses are Possibility.

Reference: research results.

Selection between fixed effects and combined effects (Chow Test)

Considering the values of the calculated statistics and their probability level, the hypothesis cannot be accepted and therefore the model will be estimated by panel data method.

Selection between random effects and cumulative effects (LM Test) The results in Table 4 show that the zero hypotheses are based on the existence of cumulative effects is rejected and therefore accepted with random effects. Selection between fixed and random effects (Hausman test) According to the results presented in Table 4, the method of fixed effects is accepted.

***Table 3.** Test results*

Tests	statistics	Value	Degrees of freedom	probability level
Chow test	F	15.53	(6،375)	0.0000
Breusch-Pagan test	x^2	1731.45	1	0.0000
Hausman test	$\mathbf{x}^2$	13.17	2	0.0245

Source: Research findings

Estimation of model by generalized moment's method (GMM)
One of the most important steps before pattern estimation is the static examination of pattern variables. One-way root tests were used to evaluate the variables, panel unit tests of Levin, Lin and Chu (LLC), Im, Pesaran and Shin (IPS), Phillips & Perron (PP) and Dicky Fuller (ADF) test. The results of these tests show that the variables used in this model are all at the mana level and, finally, the whole model is at the static level. After the stationary test of the variables, using the Hausman test, we determine which methods of fixed effects or random effects are more appropriate to estimate the model under investigation. The results of this test show that the random effects method is more suitable for estimating the pattern

Table 4: *The results of estimating the pattern of effects of economic heterogeneity on trade fluctuations in first group countries*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.32561	0.052670	14.22492	0.0000
CREDIT	0.538954	0.037305	14.447232	0.0000
FINALC	0.15734	0.011856 1	8.454594	0.0000
G	0.089539	0.023427	3.822042	0.0000
SAVINGS	0.257891	0.097901 1	2.634199	0.0020
FIXEDCAPITAL	0.003634	0.012371 2	0.293749	0.8145
INF	0.005620	0.017840 0	0.322988	0.7299
LABOR	0.007812	0.021551 4	0.335251	0.6894
MANUX	0.006897	0.001987 4	0.321564	0.7845
TWALL	0.35666	0.045775 1	0.452121	0.8966
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.71471	Mean dependent var		12.57342
Adjusted R-squared	0.70647	S.D. dependent var		11.83452
S.E. of regression	6.90341	Sum squared resid		23644.01
Durbin-Watson stat	2.15834	J-statistic		27.87964
Instrument rank	12	Prob(J-statistic)		0.000001

The results show the countries of Germany, Spain, Sweden, United Kingdom, Netherlands, Austria, Denmark, Greece, France, Italy, Spain, Belgium, Luxembourg, Finland, Cyprus, Portugal increased labor force participation, export of industrial goods, current government spending, fixed capital formation, the ratio of credit created by the banking sector to GDP, average weighted tariff on goods and inflation respectively have the most significant effect on reducing trade fluctuations in countries. In contrast, the increase in domestic savings has led to an increase in trade fluctuations. It should be noted that the positive effect of increased end-use consumption on trade balance fluctuations in these countries is not statistically significant. Based on the results of the calculation of heterogeneous economic structure differences in the second group of countries, which have lower GDP, Malta, Slovenia, Slovakia, Estonia, Latvia, Ireland, with the first group countries, it is observed that the level of credit, current expenditure. Government, consumption, savings, fixed capital formation and industrial exports in these countries were lower than in the first group. In contrast, these countries have had more labor force participation and also experienced higher inflation. Based on the results of estimating the effects of the economic structure gap on trade fluctuations in these countries, it can be stated that increasing savings, decreasing government current expenditures and decreasing bank credit created by the banking sector in the end result in savings management in these countries. It can have a huge impact on economic and trade stability as well as on the compatibility of euro area countries. Indeed, some countries in the region have been key contributors to the debt crisis in the euro area, due to the gap between the degree of economic homogeneity and the current account balance of the member states due to the widening current government spending and the banking sector's domestic credit. What can be deduced from the results of the reduction of economic structure differences between countries with Tier 1 countries, such as Germany, is that the structure of the supply side of the economy and indeed the flexibility of the labor market as well as the competitiveness of industrial goods exports play an effective role in reducing There will be trade fluctuations, such that inappropriate performance in the two indices will have a negative impact on the increase in government current spending and bank lending credits on reducing trade fluctuations (fluctuations intensify and investor confidence and capital outflows and currency crises).

Table 5: *The results of estimating the pattern of effects of economic heterogeneity on trade fluctuations in second group countries*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.23564	0.122648	10.63598	0.0001
CREDIT	0.451003	0.126855	10.550332	0.0000
FINALC	0.23569	0.127899	7.363652	0.0000
G	0.122085	0.002121	2.788012	0.0000
SAVINGS	0.13296	0.978022 4	1.363552	0.0012
FIXEDCAPITAL	0.128454	0.120236 6	0.323659	0.02448
INF	0.015585	0.189902 56	0.223659	0.001725
LABOR	0.120289	0.196635 2	0.522215	0.5536
MANUX	0.026635	0.012448 9	0.463003	0.3566
TWALL	0.048445	0.032256 5	0.333650	0.7845
	Effects Specification			

Cross-section fixed (dummy variables)			
R-squared	0.67885	Mean dependent var	11.46302
Adjusted R-squared	0.85022	S.D. dependent var	10.78415
S.E. of regression	5.62552	Sum squared resid	36522.02
Durbin-Watson stat	1.33262	J-statistic	20.63120
Instrument rank	2225.0	Prob(J-statistic)	0.000001

The results of the pattern estimation in countries with low GDP per capita in the euro area indicate that increased consumption of final goods, export of industrial goods, domestic savings and inflation leads to a decrease in trade fluctuations in these countries. While the increase in fixed capital, labor force partnerships, government current expenditures, the ratio of credit created by the banking sector to GDP and the weighted average tariff on all commodities has led to increased trade fluctuations.

5 CONCLUSION

Regional economic integration is largely based on the creation of a larger economic unit. One of the relatively successful cases of EU regional cooperation. But with the currency crisis in the Eurozone, the question is how stability has in the member states of the region suddenly become a crisis? Accordingly, the present study examined the role of economic adjustment of euro area member countries in the emergence of regional currency crisis. The results of estimating the effects of economic structure on trade fluctuations of countries show that the degree of economic development of countries has played a major role in the multiplicity of economic factors affecting the intensification of trade fluctuations. Accordingly, in order to reduce disparities in economic structure among countries, the Group of First was considered a model of the euro area in terms of economic stability and high GDP per capita. Then, the economic heterogeneity of this country was calculated with other countries with less GDP (second group countries) and the effects of its decrease or increase on the reduction of trade fluctuations were analyzed. The results show in Group II countries - Malta, Slovenia, Slovakia, Estonia, Latvia, Ireland reducing the gap between these countries and the first group countries in enhancing banking credit, saving, consumption and labor force participation will intensify trade fluctuations in these countries. In contrast, reducing the increase in government current spending, fixed capital formation and industrial exports will reduce the intensity of trade fluctuations. Also, reducing the gap between the second-tier countries and the first-tier countries in increasing credit levels by the banking sector, government current expenditures and fixed capital formation will lead to intensified trade balance fluctuations in these countries. But, on the other hand, the decrease in disparities (increased consumption, savings and industrial exports in these countries will bring about a decrease in trade fluctuations. In addition, an increase in the disparity in the labor forces participation and inflation of the second group with the first group). There will be an increase in trade fluctuations.

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