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Interest Rate Pass-through and Monetary Policy Transmission in SADC and EAC Countries: Implications for Monetary Union

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Abstract

Southern African Development Community (SADC) and East African Community (EAC) countries are exploring the feasibility of establishing a monetary union. This study assesses the economic integration in the two blocs, using the interest rate pass-through mechanism to determine the convergence of interest rates in the two regions. This study evaluates the potential for forming a monetary union using the panel autoregressive distributive lag model (PARDL) with monthly data from January 2000 to December 2022, including central bank and retail bank interest rates. The dynamic common correlated effects (DCCE) results suggest that the complete interest pass-through to retail bank rates does not hold for the two blocs. Secondly, there are varying speeds of adjustment for banking rates in response to changes in policy rates. In addition, the incomplete interest-rate pass-through for the two blocs indicates the presence of banking market imperfections, weak banking asset quality, and information asymmetries, which are more pronounced in the EAC. Monetary policymakers should implement measures

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to enhance the efficiency and competitiveness of their financial systems to minimise these imperfections.

Keywords: interest rate pass-through, financial integration, monetary union, SADC, EAC

JEL: F02, F15, F45

Introduction

Many African countries have been working on establishing regional economic communities and trade blocs (Redda 2021). Notable examples include the Southern African Development Community (SADC) and the East African Community (EAC). These groups are working towards economic integration to support the grand continental objective of a monetary union in the near future (McCarthy 2008; Redda 2021). The study aims to investigate the interest pass-through within SADC and the EAC as a step towards achieving economic integration.

One of the criteria for attaining economic integration is economic convergence among bloc members (Henning 1996). For instance, a member country's interest rates should not exceed far more than 2 percent of the highest three performing member states in the bloc (Henning 1996). Nonetheless, the member countries have significant differences. For instance, SADC is the largest trading bloc in Africa, consisting of 16 member countries: Angola, Botswana, Comoros, the Democratic Republic of Congo (DRC), Eswati[1], Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe. Within this bloc, South Africa has the largest economy. It plays a dominant role, with its GDP alone greater than the combined GDPs of the other 14 SADC member countries (Redda 2021). Therefore, South Africa is likely to have a major influence should a monetary union take place in the region. The EAC is a much smaller grouping than the SADC, comprising of eight-member countries. Members include Burundi, DRC, Kenya, Rwanda, Somalia, South Sudan, Tanzania, Uganda, and, Jobarteh (2023). For the EAC bloc, the economy in this region is dominated by Kenya and Uganda, while, and Burundi and Tanzania have much smaller economies.

The effectiveness of economic integration depends on factors such as macroeconomic conditions, financial market structure, and regulatory framework (Gigineishvili 2011). Therefore, a comprehensive economic and financial integration analysis must be conducted to establish whether interest rates (repo rate, deposit, and lending rate) move in the same direction before embarking on such economic integration. This paper contributes to the debate on whether the economic union between the SADC and EAC is as desirable as envisaged in their programs by establishing the interest rate pass-through mechanism in both regions.

1 Eswatini was previously known as Swaziland. It changed its name to Eswatini in 2018.

The empirical literature

Interest rate transmission in an economy is regarded as one of the most important monetary policy transmission mechanisms. It is closely associated with the effectiveness of monetary policy and is also critical for communicating central banks' policy stance to market participants (Liu 2019; Li, Si, and Ge 2021). Gigineishvili (2011) notes that several studies have examined the heterogeneity of interest rate pass-through in several countries and markets. However, the analysis of the structural determinants of these differences has received considerably less attention, possibly because of the difficulties in compiling consistent cross-country series of macroeconomic and structural variables. Based on the pioneering work of Cottarelli and Kourelis (1994), this study attempts to determine the level of economic integration in the two blocs through interest rate pass-through analysis. Interest rate pass-through refers to the process by which changes in the central bank's policy interest rate (repo rates) are transmitted, or "passed through", to the interest rates set by financial institutions, such as commercial banks, in the broader economy (Li, Si, and Ge 2021).

Interest rate pass-through analysis can reveal the degree and speed of monetary policy changes pass-through to the retail banking rates (Tai, Sek, and Har 2012). Sander and Kleimeier (2006) state that, within the context of economic integration, the monetary transmission process can easily be investigated through interest rate pass-through analysis, revealing how fast and complete changes in monetary policy rates are passed onto bank lending and deposit rates. Liu (2019) examined the determinants of interest rate pass-through to lending rates in China. The study found that commercial banks' asset quality influences interest pass-through to lending rate.

Hofmann (2002), Sander and Kleimeier (2006), and Aydin (2007) argue that the nature of interest rate pass-through reveals the degree of competitiveness and the soundness of the financial system. Sander and Kleimeier (2006) further assert that the pass-through's speed and size (completeness) depend upon the banking market structure and potential information asymmetries in the markets. A quicker, symmetric, complete interest rate pass-through indicates a well-functioning, competitive, and efficient financial system (Tai, Sek, and Har 2012). Such a financial system is essential to forming a well-functioning monetary union (Henning 1996).

While Hofmann (2002) and Aydin (2007) focused on the degree and speed of adjustment of banking rates to changes in money market rates, lending rates, and deposit rates, other studies (e.g., Aziakpono, Kleimeier, and Sander 2012; Tai, Sek, and Har 2012) have investigated the interest pass-through of monetary policy rates into the short-term and long-term market rates.

This study uses interest rate pass-through analysis to examine the integration of central bank and retail banking rates in the SADC and EAC to assess the feasibility of a monetary union. We will determine how quickly interest rate pass-through

will affect retail banking rates. It is a tool to understand the monetary transmission process and the competitiveness of the financial system. Quicker and complete pass-through indicates a well-functioning system. The method and econometric modelling applied in the study are presented in the next section.

Methodology

Data and sampling

To investigate the interest pass-through within the SADC and EAC, we analysed the integration of central bank and retail banking interest rates in each bloc. The sample includes monthly data from January 2000 to December 2022, encompassing central bank interest rates and retail banks' interest rates, represented by lending and deposit rates, from SADC countries and EAC countries for which consistent data are available for the sample period. The data were obtained from the World Bank and the International Financial Statistics (IFS) through the IRESS databases.

Burundi, the Seychelles, Somalia, South Sudan, and Zimbabwe were dropped due to a great deal of missing data. Therefore, the final sample size consists of 12 SADC countries and four EAC countries for which consistent data are available for the entire sample period. We also sampled the original member states before any extensions. For instance, South Sudan became an EAC member in 2016, while the DRC became a full member of the EAC bloc in 2022. Therefore, these two countries were not grouped with the EAC bloc in Table 1. In addition, DRC and Tanzania are in both groups, although, for the purposes of this study, DRC will be treated only as a member of the SADC. Table 1 presents the list of countries and each country's regional blocs. Tanzania belongs to both blocs.

Table 1. Panel data of countries in the two regions

SADC	EAC
Angola	Kenya
Botswana	Rwanda
Comoros	Uganda
DRC	Tanzania
Eswatini	
Lesotho	
Mauritius	
Mozambique	
Namibia	
South Africa	

SADC	EAC
Tanzania	
Zambia	

Source: authors' elaboration.

Model specification

To model the interest rate pass-through in the regions, the following function was considered.

$$y_{it} = f\left(y_{it-1}, Repo_{rateit}\right), \tag{1}$$

where y_{it} represents bank rates in country i at time t. The bank rates proxied are the monthly lending rate and deposit rate. The lending rate is the cost of obtaining a loan from the bank. The deposit rate is the savings rate on monies kept with the bank. $Repo\_rate_{it}$ is the monthly central bank rates for each country in the study.

Estimation techniques

To estimate the function in Equation 1, this study adopted the panel autoregressive distributed lag (PARDL) model. The PARDL is selected because it can simultaneously estimate short- and long-run dynamics while accommodating different lags on each variable (Muzindutsi and Mposelwa 2021). The PARDL equation:

$$Lending\_rate_{it} = \alpha_i + \sum_{j=1}^{p} \lambda_{ij} Lending\_rate_{i,t-j} + \sum_{j=0}^{q} \delta_{1,ij} Repo\_rate_{i,t-j} + \varepsilon_{it}, \tag{2}$$

$$Deposit\_rate_{it} = \alpha_i + \sum_{j=1}^{p} \lambda_{ij} Deposit\_rate_{i,t-j} + \sum_{j=0}^{q} \delta_{1,ij} Repo\_rate_{i,t-j} + \varepsilon_{it}. \tag{3}$$

The reparameterisation of Equations 2 and 3 is estimated as:

$$\begin{aligned} \Delta y_{it} = \alpha_i + \phi_i y_{i,t-1} + \beta_{1i}^{'} Repo\_rate_{it-1} + \sum_{j=1}^{p-1} \lambda_{ij}^{*} \Delta y_{i,t-j} + \\ + \sum_{j=0}^{q-1} \delta_{2,ij}^{*'} \Delta Repo\_rate_{i,t-j} + \varepsilon_{it}. \end{aligned} \tag{4}$$

In terms of the econometric properties of Equation 4, the coefficients β and δ capture the interest rate pass-through to y. It also captures the impact of the specified

explanatory variable on the bank rates. ε_{it} is the error term for country i in year t. It captures the speed of adjustment of repo rate pass-through towards long-run equilibrium.

Results and discussion

Descriptive analysis

Table 2.1 presents summary statistics for the EAC bloc. The descriptive statistics of interest rate variables for the EAC show that the repo rate is 11.84, the deposit rate is 8.46, and the lending rate is 17.51. Table 2.2 presents summary statistics for the SADC bloc. The results show that SADC has the highest repo rate but the lowest deposit rate, while the EAC has the highest lending rate. Although the official central bank rate (repo rate) is higher for the SADC, the spread between the repo rate and lending rate is low at 3.51 compared to 5.67 for the EAC. This shows that lending to customers is cheaper in the SADC than in the EAC.

Nevertheless, the lending rate is double-digit for the two blocs, making loans expensive to bank customers in African countries. One of the criteria for economic integration is that there must be economic convergence, where the cost of lending should not be significantly different between the two blocs (Henning 1996). However, achieving economic convergence in interest rates remains a distant goal, which is evidenced by the standard deviation in Table 2.1 for the EAC and Table 2.2 for the SADC. There is a wide variation in the interest rates between the two blocs.

Table 2.1. Summary statistics of interest rates for the EAC countries

Variable	Obs	Mean	Std. dev.	Min	Max	Variance	Skewness	Kurtosis
Repo_rate	598	11.84	4.39	5.75	29	19.29	1.38	5.08
Deposit_rate	596	8.46	2.6	3.54	23.85	6.75	1.76	9.14
Lending_rate	598	17.51	3.27	11.75	27.58	10.72	.61	3.17

Source: authors' elaboration.

Table 2.2. Summary statistics of interest rates for the SADC countries

Variable	Obs	Mean	Std. dev.	Min	Max	Variance	Skewness	Kurtosis
Repo_rate	2,922	13.1	20.07	.92	150	396.1	5.44	35.56
Deposit_rate	2,913	6.94	6.13	0	65.58	37.26	4.01	27.62
Lending_rate	2,926	16.61	14.66	5.25	125.97	210.66	3.94	20.87

Source: authors' elaboration.

Table 3 summarises the country-specific descriptive statistics. The result shows that there are high variations in interest rates among individual member countries, which may hinder economic convergence and progress towards a monetary union. All the countries, excluding Mauritius, have an average double-digit lending rate. We have not established a steady similar spread between the repo rate and lending rate across countries SADC bloc, which may suggest an incomplete convergence of monetary and banking market integration among the SADC countries. According to Ndou and Mokoena (2019), persistently high lending rates are driven by economic policy uncertainty shocks, where the actual rise of the lending rate exceeds the counter effect of the repo rate adjustment. This is further supported by Liu (2019), who found that the quality of financial institutions in countries with high lending rates is weak.

Table 3. Country-specific descriptive statistics

Countries	Repo_rate	Deposit_rate	Lending_rate
	%	%	%
Angola	36.77	12.82	46.7
Botswana	9.84	5.51	11.46
Comoros	2.75	2.24	10.47
DRC	19.08	7.77	32.65
Eswatini	7.38	4.28	10.80
Kenya	9.21	7.26	14.68
Lesotho	11.49	3.47	12.22
Mauritius	4.66	5.7	9.45
Mozambique	9.95	10.94	19.12
Namibia	7.45	5.75	10.69
Rwanda	10.44	7.92	16.65
South Africa	7.14	6.98	10.63
Tanzania	11.43	8.65	16.01
Uganda	15.95	10.23	21.21
Zambia	16.50	11.02	21.43
Total	12.88	7.2	16.76

Source: authors' elaboration.

Specification tests for repo rate and bank rates

Unit root tests and cross-dependency tests were carried out for PARDL estimations for Equation 4. Pesaran, Frees and Friedman's cross-dependency test suggests a presence of cross-dependence; therefore, the pooled mean group (PMG) estimation technique

becomes an inefficient estimator for this study. This study employs the dynamic common correlated effects (DCCE) model developed by Chudik and Pesaran (2015), which accounts for cross-sectional dependency, to achieve the study objectives.

Panel unit roots test for PARDL

The augmented Dickey–Fuller (ADF) and Phillips Perron test (PPT) unit root tests, which are appropriate for unbalanced panels, were conducted to identify whether the key variables are stationary at level. These tests established that the panel is stationary at I(1), confirming that PARDL can be used to estimate Equation 4 (see Appendix 1). Since the study employs DCCE, it allows variables to be first differenced.

The study further tests for the unit root using a second-generation panel unit root, as the first-generation unit root test in Appendix 1 assumes cross-sectional independence. Appendix 2 provides the results of the second-generation unit root test, known as the cross-sectional augmented panel unit root test (CIPS) by Pesaran (2007). The interest rate variables are stationary at levels and first difference. The repo rate is stationary at first difference, while the bank rates are stationary at level.

Interpretation and result discussion

The study applied the DCCE model to estimate equation (4), and the results are presented in Tables 4 to 6. Table 4 presents the repo rate pass-through for each bloc of EAC and SADC countries.

For the EAC countries, the short-run estimation shows the absence of short-run repo rate pass-through to the bank rates. This implies that the bank rates in the EAC bloc are slow to reflect the central bank's monetary policy changes. The lack of a significant relationship shows that the financial market does not react to changes in the repo rate. For instance, interest rates charged on loans or earned on deposits remain unchanged regardless of changes in policy rates.

For the SADC countries, in the short run, the repo rate has a positive and significant effect on deposit and lending rates at the 5 percent and 1 percent significance levels. This implies that a change in the repo rate is immediately passed through to the deposit and lending rate in the short run.

In the long run, there is no homogeneity in the repo rate pass-through to the bank rates. The result indicates a repo rate pass-through to the lending rate for the SADC bloc in the long run, while the EAC bloc shows a long-run repo rate pass-through to the deposit rate at the 1 percent significance level. This shows that, for the two blocs, the effect

of change in central bank monetary policy passed through to one type of bank rate in the long run, but not both.

There is a low and incomplete repo rate pass-through for the two blocs. The coefficient of the repo rate on bank rates is less than 1 for the EAC and SADC blocs. At 0.14 for the deposit rate and 0.29 for the lending rate, the estimates of the short-run repo rate pass-through for the SADC bloc are higher than the coefficients for the EAC bloc, at 0.021 and 0.06. The low-rate incomplete repo rate pass-through to bank rates may be interpreted as the presence of banking market imperfection (Aziakpono, Kleimeier, and Sander 2012).

Table 4. Repo rate pass-through for the EAC and SADC blocs

	EAC			SADC	
	D.Deposit_rate	D.Lending_rate		D.Deposit_rate	D.Lending_rate
SR					
D.Repo_rate	0.021	0.006		0.141**	0.291***
	(0.095)	(0.045)		(0.057)	(0.104)
ECM	−0.159***	−0.102*		−0.121***	−0.103**
	(0.033)	(0.062)		(0.036)	(0.046)
LR					
Repo_rate	0.075***	0.045		0.030	0.068***
	(0.020)	(0.033)		(0.025)	(0.021)
N	757	759		2968	2980
R-squared	0.84	0.90		0.93	0.89

Note: Standard errors are in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.001.
Source: authors' elaboration.

In addition, the repo rate pass-through reflects bank behaviour in response to changes in the repo rate in bank rates. Banks may not be motivated to raise interest rates too much on loans or savings. Although there is a low and incomplete repo rate pass-through, the SADC exhibits a stronger repo rate pass-through than the EAC bloc. This may be because interest rates are lower for SADC countries. Therefore, SADC banks may be more incentivised to increase loan interest charges than in EAC countries.

In contrast, the EAC countries can only marginally increase bank rates following a change in the repo rate because interest rates charged on loans are already high. Thus, bank borrowers may not be willing to accept an increase in lending rates. As a result, banks may not have an incentive to increase the lending rate. This may be the reason for incomplete repo pass-through with very low estimates of 0.06 for the lending rate.

The speed of adjustment to changes in the repo rate towards a long-run equilibrium is small, as shown by the error correction model (ECM) of –0.16 and –0.10 for the EAC bloc and –0.12 and –0.1 for the SADC bloc. This implies that with any change in the repo rate, the speed of adjustment rate towards the long-run equilibrium is in the range of 10 percent and 16 percent for the deposit rate and lending rate in both EAC and SADC, and long-run repo rate pass-through is still incomplete in the long run. The ECM is significant and negative, indicating a stable and converging long-run relationship between repo rate and bank rates. However, there is no long-run relationship between the repo rate and deposit rate for the SADC bloc. Meanwhile, the EAC bloc has no long-run relationship between the repo rate and the lending rate.

Table 5 presents the results of the full sample, providing insight into the potential for a monetary union among African countries. The results show incomplete repo pass-through to bank rates in both the short run and long run. Still, among the two bank rates, the lending rate has the highest repo pass-through by banks to their customers in the short- and long run.

The speed of adjustment to changes in the repo rate towards a long-run equilibrium is small, as shown by the ECM of –0.122 and –0.104. There is a significant and positive result for the repo rate and lending rate, which may imply the presence of a long-run relationship between the repo rate and the lending rate. This shows that the effect of change in central bank monetary policy is still passed through to the lending rate in the long run. However, there is no long-run relationship between the repo rate and the deposit rate. The results in Table 5 suggest that the SADC countries may be driving the outcome of the result, as it is similar to Table 4 for the SADC bloc.

Table 5. Repo rate pass-through, full sample

	1	2
	Deposit_rate	Lending_rate
SR		
D.Repo_rate	0.123**	0.234***
	(0.052)	(0.088)
ECM	–0.122***	–0.104**
	(0.027)	(0.044)
LR		
Repo_rate	0.030	0.068**
	(0.024)	(0.028)

	1	2
	Deposit_rate	Lending_rate
N	3561	3575
R-squared	0.93	0.89

Note: Standard errors are in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.001.
Source: authors' elaboration.

Table 6 shows whether any changes in bank rates influence the central bank's monetary policy. We find that both lending and deposit rates influence the repo rate in the short run. Regionally, only the lending rate positively and significantly influences the repo rate (at the 5 percent level of significance) for the EAC bloc in the short run. These findings contrast the findings in Table 4 for the EAC bloc, where the repo rate had no influence on bank rates in the short run. The findings in Table 6 for the EAC imply that bank lending rates have a significant effect on the central bank's repo rate, but this monetary policy instrument of the central bank has no significant or immediate influence on lending rates for the EAC countries. Furthermore, the lending rate pass-through to the repo rate is high at 0.17 in Table 6 compared to the repo rate pass-through to lending at 0.06 in Table 4 for the EAC countries.

Both bank rates significantly influence the repo rate for the SADC countries in the short run. Similar to the results in Table 4 for the SADC bloc, each interest rate affects the other.

Table 6. The effect of bank rates on the repo rate

	All panel	EAC	SADC
	D.Repo_rate	D.Repo_rate	D.Repo_rate
SR			
D.Deposit_rate	0.158**	0.163	0.143**
	(0.063)	(0.112)	(0.072)
D.Lending_rate	0.345***	0.177**	0.401***
	(0.092)	(0.077)	(0.108)
ECM	−0.102**	−0.067**	−0.105**
	(0.041)	(0.027)	(0.051)
LR			
Deposit_rate	0.133	0.101	0.142
	(0.124)	(0.079)	(0.157)
Lending_rate	0.073	−0.110	0.074*
	(0.054)	(0.082)	(0.043)
N	3561	757	2968
R-squared	0.90	0.83	0.90

Note: Standard errors are in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.001.
Source: authors' elaboration.

The three major findings are as follows: Firstly, the SADC bloc exhibits different behaviours following changes in the repo rate compared with the EAC bloc. According to Iris and Howells (2002), the first link in all monetary regimes is between central bank rates and bank rates, in particular, how banks react to the changes in the policy rates to lending and deposit rates. This study's findings establish no significant link between central bank rates and bank rates in the EAC bloc. Therefore, bank rates do not move in a similar direction following changes in the policy rate for the EAC and SADC blocs.

Secondly, there is incomplete repo rate pass-through for the two blocs; as such, there is banking market imperfection. However, the EAC bloc has more banking market imperfection, as evidenced by the very low repo rate pass-through transmission to bank rate, both in the short- and long run. In addition, according to Liu (2019) and Sander and Kleimeier (2006), incomplete repo rate pass-through suggests that the banking industry in these blocs is not very competitive, and the markets have information asymmetries.

Thirdly, SADC countries have a repo rate pass-through to bank rates immediately following changes in the repo rate in the short run, with significant market reaction.

For EAC countries, an immediate interest rate pass-through from the central bank onto bank rates could not be established in the short run. However, a long-run influence on the deposit rate was observed. The EAC countries are a small bloc compared with SADC countries, and the findings suggest that these blocs react to monetary policies differently. The possibility of a monetary union between the two blocs may not be feasible as the EAC bloc lacks an efficient, immediate monetary policy transmission to banking interest rates. Finally, the results indicate what monetary integration would look like in Eastern and Southern Africa, which would provide an indication of the ultimate goal of having a common monetary union throughout Africa.

Conclusion and recommendations

The study examined interest rate pass-through to determine the feasibility of a monetary union between SADC and EAC in the near future. Firstly, the findings suggest that the SADC and EAC blocs react to monetary policies differently following changes in the repo rate. Secondly, although there is an incomplete repo rate pass-through for the two blocs, the SADC exhibits immediate significant changes in market reactions to bank rates following monetary policy changes in the short run. Only a long-run relationship was established for the EAC bloc for the deposit rate. The possibility of a monetary union between the two blocs may not be feasible as the EAC bloc lacks an efficient, immediate transmission of monetary policy onto banking interest rates compared with the SADC bloc. The incomplete repo rate pass-through for the two blocs indicates the presence of banking market imperfection, weak banking asset quality, and information asymmetries, with the situation being more severe in the EAC.

One can conclude that given the SADC region's stronger repo rate pass-through, monetary policymakers should continue to use interest rate adjustments to influence the broader economy to achieve their macroeconomic objectives. Monetary policymakers should, therefore, work to identify these imperfections and implement measures to enhance the efficiency and competitiveness of their financial systems.

For the EAC, the low and incomplete repo rate pass-through points to potential challenges in transmitting monetary policy to bank rates such as deposit and lending rates. Monetary policymakers should investigate and address the factors that cause this inefficiency to make monetary policy instruments work effectively. In light of the findings regarding the lack of efficient, immediate transmission of monetary policy onto banking interest rates in the EAC region, the monetary union seems unfeasible. Monetary policymakers considering a monetary union in the EAC should carefully assess the readiness of the financial and banking sectors to ensure effective policy transmission across member countries before implementing any form of monetary union.

References

Aydin, H.I. (2007), *Interest Rate Pass-Through in Turkey*, "Working Paper", 07/05, Research and Monetary Policy Department, The Central Bank of The Republic of Turkey, pp. 1–42, https://ideas.repec.org/p/tcb/wpaper/0705.html (accessed: 9.09.2023).

Aziakpono, M., Kleimeier, S., Sander, H. (2012), *Banking market integration in the SADC countries: Evidence from interest rate analyses*, "Applied Economics", 44 (29), pp. 385–386, https://doi.org/10.1080/00036846.2011.583219

Chudik, A., Pesaran, M.H. (2015), *Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors*, "Journal of Econometrics", 188 (2), pp. 393–420, https://doi.org/10.1016/j.jeconom.2015.03.007

Gigineishvili, N. (2011), *Determinants of Interest Rate Pass-Through: Do Macroeconomic Conditions and Financial Market Structure Matter?*, "Working Paper", WP/11/176, International Monetary Fund, pp. 1–19, https://www.elibrary.imf.org/view/journals/001/2011/176/article-A001-en.xml (accessed: 7.02.2023).

Cottarelli, C., Kourelis, A. (1994), *Financial structure, bank lending rates, and the transmission mechanism of monetary policy*, "International Monetary Fund Economic Review", 41, pp. 58–623, https://www.elibrary.imf.org/view/journals/001/1994/039/article-A001-en.xml (accessed: 7.02.2023).

Henning, C.R. (1996), *Europe's Monetary Union and the United States*, "Foreign Policy", 102, pp. 83–100, https://doi.org/10.2307/1149261

Hofmann, B. (2002), *The pass-through of money market rates to business loan rates in the euro area countries*, Center for European Integration Studies (ZEI), University of Bonn, Bonn.

Iris, B.-F., Howells, P. (2002), *Central Banks and Market Interest Rates*, "Journal of Post Keynesian Economics", 24 (4), pp. 569–585, https://doi.org/10.1080/01603477.2002.11490344

Jobarteh, M. (2023), *EAC. Geographic Furutes*, https://futures.issafrica.org/geographic/recs/eac/#cite-this-research (accessed: 9.09.2023).

Li, X.L., Si, D.K., Ge, X. (2021), *China's interest rate pass-through after the interest rate liberalization: Evidence from a nonlinear autoregressive distributed lag model*, "International Review of Economics & Finance", 73, pp. 257–274, https://doi.org/10.1016/j.iref.2020.12.031

Liu, K. (2019), *The determinants of China's lending rates and interest rates pass-through: A cointegration analysis*, "Research in Economics", 73 (1), pp. 66–71, https://doi.org/10.1016/j.rie.2019.02.002

McCarthy, C. (2008), *The Roadmap towards Monetary Union in Southern Africa – is the European experience commendable and replicable?*, Third GARNET Annual Conference, Bordeaux, Panel IV –2: Monetary and Financial Governance, pp. 1–18, https://www.tralac.org/images/docs/4682/mccarthy-roadmap-towards-monetary-union-in-southern-africa-20081022.pdf (accessed: 9.09.2023).

Muzindutsi, P.F., Mposelwa, S. (2021), *A Comparative Analysis of the Expectations Hypothesis of the Term Structure of Interest Rates between the BRICS and G7 Countries*,

"Comparative Economic Research. Central and Eastern Europe", 24 (2), pp. 87–102, https://doi.org/10.18778/1508-2008.24.13

Ndou, E., Mokoena, T. (2019), *Does Economic Policy Uncertainty Impact the Pass-Through of the Repo_rate to the Bank Lending Rates?*, [in:] E. Ndou, T. Mokoena, *Inequality, Output-Inflation Trade-Off and Economic Policy Uncertainty*, Palgrave Macmillan, Cham, pp. 425–435, https://doi.org/10.1007/978-3-030-19803-9_30

Pesaran, M. (2007), *A simple panel unit root test in the presence of cross-section dependence*, "Journal of Applied Economics", 22 (2), pp. 265–312, https://doi.org/10.1002/jae.951

Redda, E.H. (2021), *Convergence Criteria-guided Regional Economic Integration in SADC and EAC: Lessons from Europe's Experience*, "Journal of African Union Studies", 10 (3), pp. 39–65, https://doi.org/10.31920/2050-4306/2021/10n3a3

Sander, H., Kleimeier, S. (2006), *Interest rate pass-through in the common monetary area of the SACU countries*, "South African Journal of Economics", 74 (2), pp. 215–229, https://doi.org/10.1111/j.1813-6982.2006.00073.x

Tai, P.N., Sek, S.K., Har, W.M. (2012), *Interest Rate Pass-Through and Monetary Transmission in Asia*, "International Journal of Economics and Finance", 4 (2), pp. 163–174, https://doi.org/10.5539/ijef.v4n2p163

APPENDIX

Appendix 1. Panel unit root test

Variable	ADF	PPT	Stationary
Repo_rate	0.0000	0.0000	I(1)
Deposit_rate	0.0000	0.0000	I(1)
Lending_rate	0.0000	0.0000	I(1)

Appendix 2. Second-generation panel unit root test

Variables	z-stat	Difference level
Repo_rate	– 18,935***	I(1)
Deposit_rate	– 2,597***	I(0)
Lending_rate	– 1,777***	I(0)

Note: * p < 0.1, ** p < 0.05, *** p < 0.001.

Przeniesienie stóp procentowych i transmisja polityki pieniężnej w krajach SADC i EAC: implikacje dla unii walutowej

Kraje Południowoafrykańskiej Wspólnoty Rozwoju (SADC) i Wspólnoty Wschodnioafrykańskiej (EAC) analizują możliwość ustanowienia unii walutowej. Niniejsze badanie poddaje ocenie proces integracji gospodarczej w obu blokach, wykorzystując mechanizm przenoszenia stóp procentowych w celu określenia konwergencji stóp procentowych w obu regionach. Wykorzystując dane miesięczne od stycznia 2000 r. do grudnia 2022 r., obejmujące stopy procentowe banku centralnego i banków detalicznych, niniejsze badanie ocenia możliwości stworzenia unii walutowej. Zastosowano ilościowe podejście badawcze z wykorzystaniem panelowego modelu autoregresyjnego o rozłożonych opóźnieniach (PARDL).
Wyniki uzyskane dzięki zastosowaniu *dynamic common correlated effects* (DCCE) sugerują, że w obu blokach nie występuje pełne przeniesienie stóp procentowych banku centralnego na stopy banków detalicznych. Po drugie istnieją różne prędkości dostosowań stóp bankowych w odpowiedzi na zmiany stóp procentowych banku centralnego. Ponadto niepełne przeniesienie stóp procentowych w obu blokach wskazuje na obecność niedoskonałości rynku bankowego, słabej jakości aktywów bankowych i asymetrii informacji, przy czym kwestie te są bardziej widoczne w EAC. Aby sprostać tym wyzwaniom, decydenci w obszarze polityki pieniężnej powinni wdrożyć środki mające na celu zwiększenie wydajności i konkurencyjności ich systemów finansowych w celu zminimalizowania tych niedoskonałości.

Słowa kluczowe: przeniesienie stóp procentowych, integracja finansowa, unia walutowa, SADC, EAC