

Original research Articles

EXPORT - EMPLOYMENT RELATIONS IN TRANSITION ECONOMIES

ABSTRACT

This study has been analyzing the long and short term of the relationship between exports and employment in twenty-two transition economies by using data covering the years 1993-2011. Estimation results of the relationship between exports and employment supports in the context of transition economies. Based on the findings, there is a long run relationship between exports and employment. It has been found that employment has the explanatory power on export in the second model. In the second model where export is dependent variable, the long-term coefficient is more powerful and error correction coefficient is negative and significant in nine countries.

Key Words: Foreign Trade, Export, Employment, Transition Economies

Jel kod: F16, F1

1. INTRODUCTION

Upon termination of the bipolar system, the world has witnessed rapid development at the end of the 1980s. At the beginning of the developments, collapse of the USSR and later many countries from USSR declaring their independence have become an actor in the both political and economic system. Those new actors have initiated a transformation towards a free market economy giving up from a centrally planned economic system to the outside, which was once applied in USSR between 1917 -1990. The post-independence period has been known as market economy transition and has brought many challenges. In the transitional period, reducing the weight of the state in the economy, having no sufficient knowledge about the market system of decision makers in the economy, legal basis is related to centrally planned economy period, Having no enough concept of private property, having no adequate knowledge about entrepreneurship and having no enough capital accumulation of society are some of major challenges.

In the period of post-independence, as for willpower of political authority in the country to pass onto a market economy has been one of the key elements of these countries' dissociation of the transitional period in these countries. Whereas Baltic Countries make rapid reforms towards the completion of the transitional process, The Central Asian economies, especially Uzbekistan, Turkmenistan and Tajikistan have followed the process further behind. Transition to market economy is based on reducing the weight of the state in the economy, private property, intellectual property rights and encouraging the promotion of entrepreneurship, setting of prices in a free market circle and liberalization of foreign trade. According to "Transition Report" published by European Bank for Reconstruction and Development in 2012 (EBRD, 2012; 14), the following table shows the situation in some sectors in terms of transition performance.

39 Table: 1 Transitional Performance of Countries

	Countries	Agricul tural Busines s	Industr y	Urban Transpo rtation	Banki ng	Insuran ce and Financi al service s	Priva te capit al	Financi al Market s
East Europe- Caucasus	Azerbaijan	2+	2	2	2	2	1	2-
	Belarus	2+	2	2	2	2	1	2+
	Georgia	3-	3-	2+	3-	2	1	2-
	Armenia	3-	3	2+	2+	2	1	2
	Moldova	3-	2-	3-	2+	2+	2-	2+
	Russia	3-	3-	3	3-	3-	2+	4-
	Ukraine	3-	2+	3	3-	3-	2+	4-
Central Asia	Kazakhstan	3-	2	2+	3-	2+	2-	3
	Kyrgyzstan	2+	2	2	2	2-	1	2-
	Mongolia	3-	2+	2	2+	2	2-	2+
	Tajikistan	2	2-	2	2	2-	1	1
	Turkmenist an	1	1	1	1	2-	1	1
	Uzbekistan	2	1	2	1	2	1	1
South- eastern Europe	Bulgaria	3	3	3+	3	3+	3+	3
	Romania	3	3+	3+	3	3+	3	3
	Macedonia	3-	3	3-	3-	3-	1	2-
Baltic	Latvia	3	4-	4-	3+	3+	3-	3
	Latonia	3	4-	4-	3+	3+	3-	3
	Poland	3+	4-	4-	4-	4-	3+	4
	Slovakia	3+	4+		4-	3+	2+	3
	Slovenia	4-	3+	3+	3	3	3-	3

40 Source: EBRD, 2012 Transition Report

41 Considering EBRD's transition performance scores of 1-4, Baltic countries show the highest
42 performance, whereas Central Asian Turkic Republics have the lowest performance.
43 Although nearly 24 years have passed since Central Asia, Eastern Europe and the Caucasus
44 economies gained their independence, it is seen that they haven't reached desired level in the
45 fields such as private capital, financial market development, financial services and banking in
46 order to acquire the functioning of market economies which is necessary and also to develop
47 foreign trade. The development of industrial sector which provides employment has also been
48 slow due to poor performance in the development of private equity, banking and financial
49 markets.

50 The increase in foreign trade of these countries will also contribute to a market economy in
51 the transitional period. In addition, the promotion of foreign investments will help the
52 elimination of scarcity of investment resulting from a lack of knowledge transfer and private
53 equity.

54 2. THEORETICAL FRAMEWORK AND LITERATURE SUMMARY

55 It is clearly seen that the theoretical framework of the relationship between foreign trade and
 56 employment significantly are formed by Hesksher-Ohlin theory. According to this theory,
 57 trade among countries under certain assumptions is determined by factor intensity among
 58 countries. Accordingly, while the countries where labor is abundant labor-intensive goods
 59 have been producing and exporting, the countries where capital is abundant capital-intensive
 60 goods have been manufacturing and exporting, and thus the profit from foreign trade has been
 61 increasing. As for the effect of process on employment, increase on the use of labor in the
 62 countries where labor-intensive goods have been exporting, as for that the countries where
 63 capital-intensive goods have been exporting, increase on the use of capital have been
 64 emerged. Therefore according to the theory in question, it is possible to increase employment
 65 and exports (Greenaway, 1998:4 translated by Karaçor: 2011).

66 A number of studies also have an explanation is as follows on the basis of Hesksher-Ohlin
 67 theory: Trade among countries affects product prices and demand factors in the country
 68 through these factors affect the price. Thus, trade, while improving demand factors used
 69 intensively in profitable sectors, factors that are not profitable in the sector leads to a decrease
 70 in demand. This decreases wages of unskilled workers due to increase the demand for skilled
 71 labor compared to the demand for unskilled labor. As a result trade causes a very small
 72 change in the prices and owing to this very small change in the wages of employees is largely
 73 not possible, so it has been stated that the effect of trade on employment is very little as well.
 74 (Arslan, 2006: 7)

75 A number of empirical studies have discussed the effect of trade on employment. However,
 76 previous studies on trade and employment focused mainly on the effect of imports rather than
 77 exports (Revenga 1992). In this study, there are at least three dimensions to be further
 78 investigated. First, affects of export on employment, secondly effects of import on the labor
 79 market, thirdly effects of openness on employment. Results of earlier studies are different due
 80 to method, data's and time periods that they used. Another factor may be concerned that
 81 employment can be measured not by the number of workers but by the worker hours (i.e., the
 82 number of workers times average working hours in Kiyoto's paper 2012). Moreover the
 83 earlier studies focused on the effect on the industry's own employment and did not pay much
 84 attention to the effect on other industries' employment. As an example of work about the
 85 effect of trade on employment in the literature will be mentioned following lines.

86 Revenga (1992), in his study, analyzed the effect of the increase in import competition on
 87 employment and wages in the U.S. manufacturing sector using OLS data between the years
 88 1977-1987. He revealed that Estimation results of changes in import prices significantly affect
 89 employment and wages. The test results showed that the appreciation of the U.S. dollar
 90 between the years 1980-1985, which was the subject of the research in the sector caused to
 91 decrease 2% in wages and 4-7, 5% in employment. Wood (1994) studied the effect on the
 92 labor market for North and South in the manufacturing industry. Unskilled labor in the
 93 southern part on the trade sourced employment provides more earnings, nevertheless the
 94 earnings in the northern part concentrated on skilled labor and there was a decline in the
 95 wages of unskilled labor. It was concluded that the best solution in the long term for the north
 96 was to increase the qualifications of employees by investing more in the education sector.

Baldvin (1994), studied the effects on wages and employment of foreign investment and trade in OECD countries. In consequence, the changes in employment had much more importance than the concepts such as labor supply, technology and the increase in demand compared with the effect of the increase in trade. Harrison and Revenga (1995) examined the effects of import on employment for Costa Rica, Peru Uruguay, Poland, Czechoslovakia and Romania. The result of their study found that effects are higher on employment in Latin Economies while it is lower for Transition Economies.

Milner ve Wright (1998), studied the response to trade liberalization of the labor market in industrialized country Mauritius. The responses of employment and wages in the short and long term were tested by supportive empirical studies using trade as a specific factor model. Employment and wages of importing and exporting sectors in Mauritius were tested by means of panel data pre and post liberalization in trade. Results of empirical analysis were supportive to theoretical assumptions of different effects across sectors. They found that, trade liberalization resulted in expanded labor demand in export industries. More surprisingly, labor demand appears to increase even in import-competing industries.

Pryor, (1999), in his study in USA, searched for the effects of trade on unskilled employment. In his study, he observed that there was direct relationship with net export and training and Import competition and protection measures increased more investment and the effect level of labor skills. However, the findings of study showed that there was not much effect of foreign effect on unskilled workers' employment.

Greenaway, Hine and Wright (1999), studied the effects of trade on employment in 167 manufacturing industrial firms in the UK example. Dynamic labor demand equation, inducing exports and imports of the years in 1979-1991 was examined with the panel data analysis. Based on the study results, the increase in exports and imports reduced the demand for labor. As the reason for the decline in labor demand, opening to foreign trade along with the increase in labor productivity brought about. Contrary to popular opinion, the effect of trade on East Asia and Japan seemed less obvious than the import from European Union.

Ghose (2000) examined this issue for East Asian countries. His study result indicated that trade liberalization accelerated manufacturing employment growth in both export-oriented and import-competing sectors for. Baldwin and Cain (2001), Sakurai (2004) found that the effect of trade on relative wages between production and nonproduction workers was rather small in Japan. LeClair (2002) examined the effect of U.S. exports on employment for different industry. The study results concluded that the exact gains in terms of total employment depend upon the labour-intensity of the products being exported. Foreign sales by the chemical and textile industries result in a far greater increase in employment than exports by the petroleum refining or steel industries.

Leichenko and Silva (2004), searched for the industrial employment of foreign trade in rural areas and the effects on wages in the United States. By the outcome of the study, it was found that low export prices in both rural and urban areas increased employment and wages, and low import prices reduced employment in the rural areas, but increased employment in urban

areas. In addition, the countries, to a large extent turned towards export due to low employment and wage both in urban and rural areas.

Davidson and Matusz (2005), made an observation on 399 firms in the United in the years from 1974 to 1992. As a method, regression analysis was applied. They concluded that there was a strong negative relationship between labor losses with net exports, on the other hand as a weaker finding; the contribution of net exports to business is weak but positive. Dutt, Mitra and Ranjan (2009), studied the relationship between trade and unemployment particularly on the basis of Hecks-Ohlin and Ricardo's theory of comparative advantages. The method of panel data analysis was applied. They ended up with the result of negative relationship between unemployment and openness with strong and valid evidences.

Ayaş and Çeştepe (2010), studied the effects of changes in foreign trade on employment within the scope of manufacturing industry. 1998 and 2002 input-output tables were used as basis together with Factors of intensity and input-output models. It was seen that in the calculations of the effects of changes in foreign trade on employment differed in some sectors, while increasing employment in some sectors, reducing in some others. As a result, the net employment effect was found to be positive for the manufacturing industry. Polat and Uslu (2010), did a research on the manufacturing sector by means of dynamic panel data in 95 manufacturing sectors in Turkey in 1992-2001. Trade data on employment in manufacturing industry revealed to be no significant effect. Cuyvers et al. (2010) searched for the effect of internationalization on the demand for labor in firms of Belgium in 1997-2007. Analysis results showed that imports from low-income countries and the demand for unskilled workers was significantly narrowed, but that increased the demand for skilled workers; increased in exports; similarly; it increased the demand for workers with higher productivity, and reduced the demand for labor with less productivity. Feenstra and Hong (2010) examined the effect of China's exports on employment. They concluded that exports have become increasingly important in stimulating employment in China but domestic demand led to three times more employment gains than did exports.

Gül and Kamacı (2012) studied trade and unemployment relation selected developed and developing countries. Their research result concluded that there is causality from export and import to unemployment both developed and developing economies.

Yanikkaya (2013) also indicate that higher trade volumes have adverse effect on industrial employment in developed countries. Moreover, while they have positive effect on employment in industry and services in developing countries, trade barriers have adverse effect on employment growth in services for developed countries.

3. ECONOMETRIC MODEL AND RESULTS

Testing for unit roots has become a standard procedure in time series analyzes. For panel data, panel unit root tests have been proposed by Levin and Lin (1992), Im, Pesaran and Shin (1997), Harris and Tzavalis (1999), Madala and Wu (1999), Choi (1999), Hadri (1999), and Levin, Lin and Chu (2002)(Chen 2013:1)

If two variables are potentially non-stationary variables, so the long term relationship can be investigated between these series. Especially two variables are both I(1), co-integration relationship exists between these series (see Engle and Granger, 1987).

To determine whether a co-integrating relationship exists, the recently developed methodology proposed by Pedroni [1999a] is employed. Basically, it employs four panel statistics and three group panel statistics to test the null hypothesis of no co-integration against the alternative hypothesis of co-integration. Having established that there is a linear combination that keeps the pooled variables in proportion to one another in the long run, it can be proceeded to generate individual long-run estimation. In view of the fact that the OLS estimator is a biased and inconsistent estimator when applied to co-integrated panels that are utilized the “group-mean” panel fully modified OLS estimator (FMOLS) developed by Pedroni [1999b; 2001]. Although FMOLS and DOLS estimation methods examine only long run parameters, the PMG and MG estimation methods calculate both long and short run parameters. MG estimation method proposed by Pesaran and Smith (1995) derives the long run parameters for the panel from averages of the long run parameters of the ARDL models for individual unit. (Yerdelen 2011:103)

Employment and export relations of 22 countries in this study, between the years of 1993 to 2011 will be examined by using employment rate and export data through panel data methods. Data set for econometric analysis were taken from World Bank Indicators (WDI) and E-views 8 and stata11 econometric package programs have been used. In panel data analysis, both horizontal section dimension (22 countries, Azerbaijan, Bulgaria, Belarus, Czech Republic, Georgia, Armenia, Kazakhstan, Kyrgyzstan, Lithuania, Latvia, Poland, Romania, Russia, Macedonia, Moldova, Mongolia, Slovakia, Slovenia, Uzbekistan, Tajikistan Turkmenistan and Ukraine) and time series dimension (1993-2009; 17 years) are in equation. Stationary of panel series have been investigated through applying Levin, Lin and Chu (LLC), Im, Pesaran & Shin, ADF and PP Fisher unit root test in order to determine the statistics of the variables whether they contain unit root.

Table 2. Panel Data Unit Root Test Results

	Employment rate (EMP)		Export (EXP)	
	Level	Difference	Level	1.Difference
Levin, Lin &Chu stat	-1.00347 (0.157)	-11.517 (0.000)	2.129 (0.989)	-19.182 (0.000)
Im, Pesaran & Shin W-stat	-1.17694 (0.119)	-8.616 (0.000)	-2.01760 (0.678)	-13.0706 (0.000)
ADF-Fisher Chisquare	56.4722 (0.098)	148.891 (0.000)	20.844 (0.997)	352.672 (0.000)
PP-Fisher Chisquare	51.6826 (0.198)	158.231 (0.000)	23.136 (0.99)	357.214 (0.000)

First, it is applied several panel unit root tests for employment rate and Export, the pooled panel unit root tests results are represented in Table 2. The lag orders are chosen by Akaike information criterion. Pooled unit root test results show that the unit root null hypothesis for panel data cannot be rejected in level for both series, According to the results of panel unit

212 root tests EMP (employment) and EXP(export) variable are non-stationary at level.
 213 However null hypothesis is rejected for the first differences: both employment and export
 214 series are I(1) stationary.

215 Panel co-integration test has been conducted to measure the existence of long-term
 216 relationships between variables. Pedroni (1999) Panel Co-integration test results are given in
 217 Table 3. the lag orders are chosen according to the Akaike information criterion and the
 218 model does not include individual intercepts and trends. It cannot be rejected co-integration
 219 relationship between unemployment rate and GDP for 22 Transition countries for both model
 220 1 (dependent variable: employment rate) and model 2 (dependent variable: EXP) with most of
 221 co-integration test statistics. Pedroni co-integration test results reveal the existence of a long-
 222 term relationship between employment and exports.

223 Table 3. Pedroni Co-integration Test

	EMP (dependent variable)		EXP (dependent variable)	
		weighted stat.		Weighted stat.
Panel v-Statistic	-3.324235 (0.999)	-3.518752 (0.999)	4.373980 (0.000)	2.764359 (0.002)
Panel rho-Statistic	-2.407051 (0.003)	-1.380591 (0.054)	-2.817446 (0.000)	-1.982944 (0.013)
Panel PP-Statistic	-3.354096 (0.000)	-1.995079 (0.023)	-3.563543 (0.000)	-2.942996 (0.001)
Panel ADF-Statistic	-3.238554 (0.000)	-2.504452 (0.0061)	-3.852777 (0.000)	-2.746698 (0.003)
Group rho-Statistic	0.116210 (0.414)		-0.120469 (0.319)	
Group PP-Statistic	-4.502827 (0.000)		-4.241304 (0.000)	
Group ADF-Statistic	-4.664242 (0.000)		-4.272803 (0.000)	

The next step is to estimate short run and long run estimators models. The results are shown in Table 4-5 for pooled, in Table 6-7 for individual. PMGE, MGE and DFE methods are used to estimate both short run and long run coefficients. Moreover Hausman test is implied for testing the hypothesis that long run coefficients are the same for all of the countries, displaying that the null hypothesis could not be rejected for both models. Thus, the PMGE and DFE methods are valid; in other words, the long run coefficients are homogenous and do not change according to the country. The Akaike information criterion is chosen lag length for all estimation methods.

When analyzed in terms of countries, the error correction parameter is negative and significant in Romanian and Russian economies hence long-term relationships between employment and export for these countries is valid and 19% and 15% of deviations that occur in short-term will achieve balance respectively the following term according to PMGE results in model 1. The long run coefficient is significant and its value is the same for all countries.

Table 4: Long Term and Short term relations test (dependent variable is employment)

	PMGE	MGE	DFE
Long term coefficient	-1.45 (0.004)	1.77 (0.303)	0.10 (0.051)
Error correction coefficient	0.67 (0.626)	-0.25 (0.000)	-0.135 (0.00)
Short term coefficient	0.134 (0.266)	0.006 (0.668)	0.003 (0.702)
Hausman Test	0.130		

The long run coefficient is significant and its value is 1.97 for all countries according to PMGE results for model 2. The error-correction parameters for PMGE, MGE and DFE are significant. Accordingly, there are long-term relationships between variables and 32% of the short-term deviations in this relationship will be corrected and will move closer to the long-term equilibrium in the next term. We can conclude that employment explains the export in the long term for these countries.

Table 5: Long Term and Short term relations test (dependent variable is export)

	PMGE	MGE	DFE
Long term coefficient	-1.975 (0.00)	1.972 (0.327)	-.2127 (0.666)
Error correction coefficient	-.31683 (0.000)	-.463981 (0.000)	-.327869 (0.000)
Short term coefficient	1.855 (0.007)	1.099(0.030)	0.718 (0.023)
Hausman Test	0.090		

The error correction coefficients of second model, and speeds of reaching equilibrium are greater than Model 1. The error correction coefficient is negative and significant in the economies of Azerbaijan, Georgia, Lithuania, Latvia, Macedonia, Russia, Poland, Turkmenistan and Ukraine. The country whose short-term deviations of variables reach

equilibrium the most quickly is Ukraine with the percentage 68%, and Lithuania, Latvia, Macedonia, follow it respectively, 56%, 55%, 52%

CONCLUSION

This study analyzed the long and short term of the relationship between exports and employment in twenty-two transition economies using data covering the years 1993-2011. Estimation results of the relationship between exports and employment supports in the context of transition economies. Based on the findings, there is a long run relationship between exports and employment, but long-term coefficient is weak. Besides the low coefficient, PMGE results for the units forming the employment effect of exports in Macedonia, Romania, Russia, and Poland's economies make sense in the long term, but for short term relations, it make sense in Armenia, Belarus, Macedonia and Russia. These results show that there are raw materials in export items and density of primary goods and this could be interpreted they have no substantial contribution to employment growth.

It has been found that employment has the explanatory power in the second model. In this model, the long-term coefficient is more powerful and error correction coefficient is negative and significant in nine countries. But for short relations, it doesn't make sense except for Russia. In addition, the employment growth has higher explanatory power for export growth in terms of this model.

In conclusion, in addition to reveal the existence of the relationship between export and employment in particularly transitional economies, estimation results validate that the effect of employment growth is much effective in explaining the export growth for many counties.

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328 **Table6. Individual Long and Short Run Estimation (Dependent Variable: (Δexp_{it}))**

		Armenia	Azarbaija	Belarus	Bulgaria	Check	Georgia	Kazahstan	kyrgyzsta	latvia	lithuania	makedoni	moldivia	MNG	Romanial	Russia	Polond	Slovakia	Slovenia	Tajikstan	Turkmeistan	Ukrain	uzbekstan
Long Run Coeff. (θ_i)	PMG	-1.97*	-	-1.97*	-	1.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*	1.97*
	MGE	-4.53	14.15	0.34	1.15	-4.5*	-3.35	0.9	6.36	-0.6	-9.06*	-1.19	0.67	6.8*	-0.42	-1.68	-4.13*	-9.13	2.05	35	10.59	-2.68*	6.01
Error Corr. Coeff.	PMG	-	-0.16	-0.49	-0.24	-0.34	-	-0.47	-0.06	-	-0.55*	-0.52*	-0.03	-0.35	-0.05	-0.47*	-0.12*	-0.18	0.08	-0.17	-0.46*	-0.68*	-0.26
	MGE	-0.27	-	-0.58	-0.80*	-0.75*	-	-0.5*	-0.16	-0.74*	-0.37*	-0.61	-0.57	-0.54*	-0.41*	-0.5	-0.08*	-0.15	-0.14	-0.44	-0.45	-0.75*	-0.49*
Short Run Coefficients																							
emp	PMG	-0.28	-0.07	6.78	1.42	1.55	0.73	0.68	0.12	0.67	1.39	2.55	0.61	0.06	-0.02	2.31*	0.63	0.85	0.009	14.32	4.32	1.77	0.36
	MGE	-0.54	-2.35	8.58	0.31	4.03*	1.09	0.33	-0.48	0.33	2.38*	2.7	-0.2	-1.98	-0.22	2.97	0.47*	1.03	0	3.28	2.57	2.1	-1.57

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330 **Table 7. Individual Long and Short Run Estimation (Dependent Variable: (Δemp_{it}))**

		Armenia	Azerbaijan	Belarus	Bulgaria	Czech	Georgia	Kazakhstan	Kyrgyzstan	Latvia	Lithuania	Macedonia	Moldova	Mongolia	Romania	Russia	Poland	Slovakia	Slovenia	Tajikistan	Turkmenistan	Ukraine	Uzbekistan
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Long Run Coeff. (θ_i)	PMG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MGE	0.21	0.05	-0.19	0.29	-0.41	-0.04	0.76	0.07	-0.06	-0.04	0.33	1.57	0.05	-1.27*	-1.03	37.87	0.09	0.12*	0.01	-0.04	0.03	0.12
Error Corr. Coeff.	PMG	0.03	0	-0.01	-0.01	0.02	0	0.03	0	0.07	0.01	0.08*	0	0	-0.19*	0.15*	0.08*	0.03	-0.01	0	0	0.02	0.05
	MGE	-0.21*	-0.23	-0.1*	-0.2	0.16	-0.37	-0.08	-0.52*	-0.4*	-0.72*	-0.15	0.004	-0.87*	-0.21	0.22	-0.02	-0.32	-0.81*	-0.3	-0.14	-0.14	0.12
Short Run Coefficients																							
exp	PMG	-0.06*	0	0.03*	0.06	-0.03	0	-0.03	0	0.06	0.06	-0.07*	0.03	-0.01	0.15	0.13*	-0.02	-0.02	0.01	0	0	-0.01	0.04
	MGE	-0.09*	-0.02	0.02*	0.02	-0.04	0.001	-0.04	-0.01	-0.01	-0.03	-0.09*	0.03	0.002	0.15	0.16	-0.07	-0.04	-0.09*	0.01	0.009	0	

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