Financial Liberalization Index of Pakistan: Factorial Approach

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Abstract
Financial liberalization is a process that involves the adoption and implementation of various reforms in the financial sector of the country and it is imperative to measure the level of liberalization at different time period. The aim of this study is to construct a financial liberalization index *(FLI)* for Pakistan employing principal component method over a period of 24 years from 1991 to 2014. The present study is an attempt to improve the financial liberalization index formation by considering the real time change in implementation process. However previous studies Chowdhury (2006) and Amaira and Amaira (2014) considered single entry for one reform. The index prefigures the degree of financial liberalization over a given time period. The formulated index reveals that the process of financial liberalization accelerated from 1998-2003, for rest of the years the pace remained sluggish.
Keywords: Financial Liberalization, Principal Component Analysis, Structural Adjustment Program, Pakistan.

Since last decade liberalization of financial system has become an integral part of economic policy of developing countries in the world. Financial liberalization measures are implemented to make the financial institutions independent for alleviating financial repression (Rodrik, 2006). Financial liberalization policies intend to provide environment for financial innovation. Additionally, it aids reducing directed credits and facilitates external flow of financial resources in the country (Demetriades & Andrianova, 2004). The process of liberalizing the financial system began at different time period in various parts of the globe.

In Latin America it began in 1970s and substantial liberalization occurred around 1990s. Financial liberalization started in 1980s in East Asian countries like Indonesia liberalized interest rates in 1984 and Republic of Korea in 1992. However in transition economies, liberalization of financial system took place in 1990s (Bokros, Fleming, & Votava 2001 and Sherif, Borish, & Gross 2003). In rest of the part of world like South Asia the liberalization took place in early 1990s with gradual freeing of interest rates, reduction in reserve requirement, liquidity, and equity market liberalization.

Financial Liberalization Reforms in Pakistan

In Pakistan, State bank and commercial banks were nationalized in 1974 aimed to achieve socio economic benefits; however it could not achieve the desired results (Mujahid, Hashmi, & Abbas, 2014).

Multifarious financial deficiencies like wretched private investment, low range of financial products in the money and capital market, insufficient financing options, high risk exposure to investor, holding of financial assets by state owned institutions, deficient liquidity, limited arbitrage options, high transaction cost, low response to monetary and fiscal incentives, and vulnerable stock market capitalization were encountered by the financial markets in Pakistan (Goyal, 2014). The economic growth was slowed due to these deficiencies. Consistent and efficient financial mechanism is important for reducing the distortion in financial markets that shall amplify economic growth.

Therefore, to overcome the financial sector deficiencies Government of Pakistan initiated diverse financial reform in early 1990s under structural adjustment programs (SAP). During initial phase notable reforms include privatization of state owned banks, recovery of bank loans, and implementation of international accounting standards. Afterwards from several reforms related to financial markets for instance minimum capital requirements for the banks, permission to start subsidiaries (mutual funds), venture capitalist financing, foreign exchange and asset management firms, etc. Consumer financing was also introduced in the same time period to support middle and lower level income sector (Munir, et al., 2013).

The process of financial liberalization commenced in year 1990 in Pakistan under manifolds. The reforms from 1990-2014 are categorized by State Bank of Pakistan as Privatization Reforms, Institutional Strengthening, Nonperforming Loan, Debt Management, Monetary Management Measures, Exchange Payment, Capital Market Reforms, Banking Reforms, and Prudential Regulations.

The aim of implanting financial reforms is to widen and deepen the financial sector of the country. Few policy measures were targeted to increase the competition in the country and some focused for improving the efficiency of the financial sector (Amel, Barnes, Panetta, & Salleo, 2004). Such as removal of entry barrier for foreign banks and restructuring of state owned banks. The reforms also include the interest rate deregulation and reserve requirement of banks. Similarly introduction to prudential regulations and strengthening the capital markets were the target of financial reforms. The target of these policy measures was to strengthen financial markets for attaining efficiency and stability in the country (Ataullah, Cockerill, & Le, 2004). The present study incorporates the categorization by the State Bank of Pakistan for the collection of data regarding financial reforms for the period (1990-2014) for development of financial liberalization index for Pakistan. The financial reforms are described briefly below:

Privatization

Liberalization of financial sector embarked with the privatization of commercial banks in Pakistan in 1990. Privatization is process through which public (Government) owned organizations transfer ownership to the private sector. The business may be for profit or a nonprofit organization (Savas & Savas, 2000). This may also include the outsourcing of some operations like collection of taxes, revenues, management (Shrestha & Chowdhury, 2006). Privatization started in 1990 in Pakistan with the aim to nationalize the commercial banks. Therefore, under the privatization process 26 percent share of MCB and ABL (commercial banks) were sold to private sector. In 1991 ten private and three foreign banks were permitted to operate in Pakistan (State Bank of Pakistan, 2003) Furthermore, some provincial banks were also scheduled under the State Bank of Pakistan in 1994 and another reform was introduced in 1994 and this paves the way for the privatization reforms in Pakistan.

Institutional Strengthening Reforms

Strengthening the financial system of the country reforms were introduced for institutional strengthening. The aim was to refine the governance mechanism of corporate, private, and public sector level. The reforms in this area addressed the most critical aspects like transparency, rule of law, accountability etc. For strengthening financial institution setting up of Credit Information Bureau (CIB) was a milestone in June 1990 (State Bank of Pakistan, 2003). The target of CIB was to manage the data of borrowers from the lending institutions. Another important step was to develop National Credit Commission (NCC) in 1991 to review the credit policy in the economy. Important initiatives were taken by the Government like setting up Non Banking Financial Institutions regulations in 1992, development of credit rating agency in 1995, fund management and investment advisory companies in 1997, conformity with International Accounting Standards in 1997, and establishment of corporate & Industrial Restructuring Corporation in year 2000 (State Bank of Pakistan, 2003).

Non Performing Loan (NPL) Reforms

The loan may be classified as non-performing, when the interest and principal payments are late by 90 days. It may also be categorized as non-performing loan, if principal amount is refinanced and payments are delayed more than 90 days as per the agreement (IMF Global Financial Stability Report, 2005). Banking sector plays a pivotal role in the financial stability of the country and it is due to the fact the Government of Pakistan targeted the rising NPLs in the country under the financial liberalization reforms in 1992. Important reforms in this category were introduced like commercial banks were instructed to aggregate the data of NPLs and classify it on the basis of substandard performer, doubtful, or complete loss. It was also directed to categorize them at the rate of 20%, 50% and 100% (State Bank of Pakistan, 2003). In the preceding years loan recovery laws were developed and implement in 1997. Later on to resolve the non-performing loan dilemma incentive schemes were introduced to loan defaulters (Khan, 1998).

Debt Management Reforms

The purpose of debt management is to develop and implement strategies for managing the debt of the government for raising funds. The process of debt management attempts to create efficient market for the government securities and achieve the cost objectives set by the government (IMF - Global Financial Stability Report, 2016). Furthermore, productive debt management helps to minimize financial vulnerabilities, improve stability in the macroeconomic environment, and enhance investor confidence because debt managers rely on diverse sources of finance to meet the borrowing cost at low level (Blommestein & Turner, 2011). In 1991 public debt auction system was introduced by the government of Pakistan and SBP established securities department. In addition to this, different national saving schemes were initiated and federal investment bonds (FIBs) were introduced with 3, 5, and 10 years maturities in 1991. Government of Pakistan formulated secondary market for the government securities in the mid of 1998. Initially two debt management primary dealers were appointed in 2002 and by the year 2004 they were increased to eleven. Under financial liberalization various measures were taken to strengthen this area (State Bank of Pakistan, 2006).

Monetary Management Measures

Financial reforms demands to follow monetarist approach by the governments. In monetarist approach targets are set regarding the growth rate, inflation, and foreign investment etc. The aim of the monetary management measures was to shift towards market based instruments (Janjua, 2005). In 1991 cash reserve requirement (CRR) for banks was introduced and to maintain minimum balance of 5% with the State Bank of Pakistan. Afterwards, non banking financial institutions were informed regarding statutory liquidity requirement in 1992. Along with these monetary management measures in August 1992 credit ceiling was substituted with flexible credit deposit ratio in every quarter. Later on new market based system was introduced to replace credit deposit in September 1995. Discount rate was approximately up to 14% in 2001 which was gradually decreased to 7.5% by the end of year 2002 (State Bank of Pakistan, 2006). Many other monetary management measures were introduced in the preceding years to optimize the financial system.

Exchange and Payment Reforms

A comprehensive package of exchange and payment reforms was announced by the Government of Pakistan in January 1991. Under the financial liberalization reforms Pakistani residents were allowed to hold foreign currency accounts on the same basis as non residents.

Foreign banks were allowed to underwrite up to 30% publicly offered shares of individual company in February 1991(State Bank of Pakistan, 2003). Foreign corporations were allowed to transfer profits to their home country without the permission of State Bank of Pakistan. In the next year, ceiling on the payments to non-residents in the form of royalty and technical fee was excluded by the government of Pakistan. In 1992 multinational corporations were allowed to generate funds from the local markets and several initiatives were taken to liberalize the foreign currency remittances. Particularly, investment banks were permitted to generate financial resources from outside the country utilizing certificates of investment having maturity date not less than three months in 1992. Most importantly, 100% of foreign equity investment was allowed on repatriable basis. Besides these initiatives, foreign investors were permitted to trade freely in the capital markets in March 1993 and government granted permission to foreign companies to borrow funds from the domestic market in 1997 (State Bank of Pakistan, 2003).

Capital Market Reforms

To strengthen regulatory & institutional framework, the Government of Pakistan in collaboration with Asian Development Bank (ADB) formulated capital market development program in March 1997. Later on central depository company (CDC) was created in association with International Finance Corporation (IFC) and other leading commercial banks to facilitate the electronic transfer of shares in the same year. For enhancing the confidence of the investors stock exchanges were automated. Government of Pakistan achieved the milestone by replacing Corporate Law Authority (CLA) by establishing Security and Exchange Commission (SECP) in 1999 (State Bank of Pakistan, 2003). SECP was operational in 1999 and since then many reforms were implemented to strengthen the performance of capital markets in the country.

Banking Reforms

Government of Pakistan took several initiatives in the banking sector of the country. Some important steps under the liberalization of financial system include insurance products to depositors from bank and non-banking finance institutions. Evening commercial banking was initiated in December 2000 to provide services to the clients and stimulating economies of scale. Some new reforms in the banking sector includes enhancement in the minimum paid up capital of commercial and non-banking financial institutions in 2001. State bank allowed commercial banks to setup automatic teller machines and restriction on banks to pay higher rates of return on deposits of public sector agencies, which was imposed on July 4, 1978, were lifted. Various other reforms in the banking sector were brought to strengthen the banking industry till 2014 (Economic Survey of Pakistan, 2015).

Prudential Regulations

The State Bank of Pakistan is consistently trying to assure that the regulatory framework meet the essentials of global financial markets for deposit finance institutions (banks/DFIs). The aim of the regulations is to provide new financial products that help to achieve maximum benefits for the society and economy. The prudential regulations shall be assumed as the baseline to improve the regulatory framework and individual banking organizations shall take improved measures. Margin between the buying and selling rates was revised in October 2002 and pre-payment to foreign private loans was allowed. The significant regulations include prepayment facility to the borrower and sanctions of third currency exposure to importers in December 2002. Furthermore, authorized dealers were granted general permission to extend loans to foreign nationals subject to the observance of relevant Prudential Regulations (State Bank of Pakistan, 2006).

Data and Method for Construction of Financial Liberalization Index

Financial liberalization is a process that involves the adoption and implementation of various reforms in the financial sector of the country. It is deemed important to measure the degree or level of liberalizing the financial segment at a certain time period (Ahmad et al., 2013).

Previous studies developed index to measure the level of financial liberalization in different parts of the world. Demetriades and Luintel (1997) constructed the financial liberalization for India, Bandiera (2000) and Leavens (2003) for different developed and developing countries, Laurenceson and Chai (2003) for China, Chowdhury (2006) for Nepal, and Amaira and Amaira (2014) for Tunisia. These studies used only six areas to construct the financial liberalization index which include Deregulation of Interest Rates, Removing Barriers to Entry, and Reduction in compulsory reserve requirements, Relaxation in credit control, Regulation and Banking Supervision, and Privatization. These studies only recorded the reform in the year in which it is introduced and in the later years the further developments by the Governments are not taken into account for capturing the real time change in financial liberalization process. These studies allocated 1 if financial liberalization is introduced completely at one time, 0.5 if liberalization is introduced partially, and 0.3 if the liberalization had to be implemented in 03 years. Whereas, some of the studies gave only one to each category and that unit 1 is repeated in the upcoming years which do not reveal new development in the financial reforms area. One of the domestic literature made an attempt to develop the financial development index by incorporating three proxies namely liquid liabilities to GDP (LLG), credit to GDP (CRD), and ratio of commercial bank assets to the sum of commercial banks and central bank assets Rizwan-ul-Hassan et al., (2017). Whereas, the present study used nine areas to build the financial liberalization index for Pakistan. All the reforms that were introduced throughout the sample period 1990-2014 were incorporated to develop the index to record all the changes in the specific category of financial reforms.

Former researchers utilized principal component method to develop the index for different countries. Bandieria et al., (2000) and Leavens (2003) applied principal component method for constructing the index. Shrestha and Chowdhury (2006) developed financial liberalization index for Nepal applying principal component method. Laurenceson and Chai (2003) construct a similar financial repression index for China. Demetriades and Luintel (1997) constructed an index of financial repression for India using the method of principal components.

This research is conducted by collecting data of financial reforms which were implemented by the Government of Pakistan from 1990 to 2014. The data for the construction of financial liberalization index was collected from two major sources; financial sector assessment progress report published by the State Bank of Pakistan from 1990-2004 and Economic survey of Pakistan from 2005-2014. A total of 362 reforms were undertaken to construct the financial liberalization index from 1990 to 2014. Out of 362 reported financial reforms 171 reforms were reported by State Bank of Pakistan in financial sector assessment report and remaining 191 reforms were reported in annual Economic survey of Pakistan under all categories mentioned above. This study utilized all the reported reforms for the construction of financial liberalization index.

In present study the financial liberalization index ($\boldsymbol{FLI_t}$) is constructed by applying principal component method (***PCM***) and incorporating nine (09) dimensions of financial sector reforms as categorized by the State Bank of Pakistan. The description of the variables uses in the construction of financial liberalization index for Pakistan is as follows:

PRV: *Privatization Reforms*
IS: *Institutional Strengthening Reforms*
NPL: *Nonperforming Loan Reforms*
DMR: *Debt Management Reforms*
MMM: *Monetary Management Measures*
EPR: *Exchange Payment Reforms*
CMR: *Capital Market Reforms*
BR: *Banking Reforms*
PR: *Prudential Regulations*

The table 3.1 reports the year wise reforms according to the dimensions of financial liberalization.

Table 1. *Year Wise Financial Liberalization Reforms*

Years	PRV	IS	NPL	DMR	MMM	EPR	CMR	BR	PR
1990	1	1	0	3	0	0	0	0	0

1991	3	2	0	3	4	9	0	0	0
1992	0	2	1	0	4	2	0	0	0
1993	0	1	1	0	2	2	0	0	0
1994	1	2	0	0	0	5	1	0	0
1995	0	1	0	0	3	0	0	0	0
1996	0	0	0	0	2	0	1	0	0
1997	0	4	3	0	2	1	3	0	0
1998	0	2	0	0	0	1	0	0	0
1999	0	0	0	2	2	1	2	0	0
2000	0	1	0	0	0	3	0	3	3
2001	0	0	0	1	5	9	0	8	12
2002	0	2	0	2	3	20	3	10	11
2003	0	0	0	4	0	0	0	0	4
2004	0	0	0	0	0	0	1	2	0
2005	0	0	0	0	0	0	0	3	0
2006	0	3	2	0	6	3	17	0	0
2007	0	0	0	0	0	0	16	3	3
2008	0	0	4	0	0	4	4	0	0
2009	0	1	0	0	0	0	10	3	0
2010	0	0	5	4	2	1	4	1	0
2011	0	2	1	6	0	0	6	0	2
2012	0	0	2	6	0	2	8	7	6
2013	0	0	0	0	0	0	6	5	0
2014	0	0	0	0	0	0	10	7	0

Source: Developed by the Authors

To calculate the financial liberalization index for Pakistan reforms are recorded in each year. Therefore, twenty three (24) reforms in the area of institutional strengthening, five (05) in privatization, nineteen (19) in non-performing loans, thirty one (31) in debt management, thirty five (35) in monetary management, sixty three (63) in exchange payment, ninety two (92) in capital market, fifty two (52) in banking, and forty one (41) in prudential regulations were implemented from 1990 to 2014. A total of three hundred and sixty two (362) reforms in various dimensions of financial sector were recorded for the construction of financial liberalization index of Pakistan. From the values given in table 3.1 the financial liberalization index for Pakistan is constructed.

The weight of each component is calculated by applying the principal component method. The following equation is used to measure the financial liberalization index ($\boldsymbol{FLI_t}$) for the time (t):

$$\boldsymbol{FLI_t = W_1PRV_t + W_2IS_t + W_3NPL_t + W_4DMR_t + W_5MMM_t + W_6EPR_t + W_7CMR_t + W_8BR_t + W_9PR_t}$$

Where, t= 1990, 1992……….. 2014 and W_t is the calculated weight of each component. The financial liberalization index for each year is obtained by summing up all the individual indices for a respective period as indicated in equation. The study takes into account the first principal component which accounts for 76 percent of total variance of in all dimensions of financial liberalization. The weight for each financial reform dimension is captured. The weight of each policy dimension is multiplied with the respective value of the reform in each year. The weight of each financial reform dimension is entered in equation no (i).

$$\boldsymbol{FLI_t = 0.0883\,PRV_t + 0.0811\,IS_t + 0.1469\,NPL_t + 0.0455\,DMR_t + 0.3259\,MMM_t + 0.5791\,EPR_t + 0.0455\,CMR_t + 0.4231\,BR_t + 0.5765\,PR_t}$$

The financial liberalization index for each year is captured by adding the calculated values of each element in the respective year. However, individual and overall year wise index is presented in table 2.

Table 2. *Financial Liberalization Index of Pakistan*

YEARS	PRV	IS	NPL	DMR	MMM	EPR	CMR	BR	PR	*FLI*
1990	0.0177	0.0034	0.0000	0.0044	0.0000	0.0000	0.0000	0.0000	0.0000	*0.0254*
1991	0.0530	0.0068	0.0000	0.0044	0.0372	0.0827	0.0000	0.0000	0.0000	*0.1841*
1992	0.0000	0.0068	0.0077	0.0000	0.0372	0.0184	0.0000	0.0000	0.0000	*0.0701*
1993	0.0000	0.0034	0.0077	0.0000	0.0186	0.0184	0.0000	0.0000	0.0000	*0.0481*
1994	0.0177	0.0068	0.0000	0.0000	0.0000	0.0460	0.0005	0.0000	0.0000	*0.0709*
1995	0.0000	0.0034	0.0000	0.0000	0.0279	0.0000	0.0000	0.0000	0.0000	*0.0313*
1996	0.0000	0.0000	0.0000	0.0000	0.0186	0.0000	0.0005	0.0000	0.0000	*0.0191*
1997	0.0000	0.0135	0.0232	0.0000	0.0186	0.0092	0.0015	0.0000	0.0000	*0.0660*
1998	0.0000	0.0068	0.0000	0.0000	0.0000	0.0092	0.0000	0.0000	0.0000	*0.0160*
1999	0.0000	0.0000	0.0000	0.0029	0.0186	0.0092	0.0010	0.0000	0.0000	*0.0317*
2000	0.0000	0.0034	0.0000	0.0000	0.0000	0.0276	0.0000	0.0244	0.0577	*0.1130*

2001	0.0000	0.0000	0.0000	0.0015	0.0466	0.0827	0.0000	0.0651	0.2306	*0.4264*
2002	0.0000	0.0068	0.0000	0.0029	0.0279	0.1838	0.0015	0.0814	0.2114	*0.5157*
2003	0.0000	0.0000	0.0000	0.0059	0.0000	0.0000	0.0000	0.0000	0.0769	*0.0827*
2004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0163	0.0000	*0.0168*
2005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0244	0.0000	*0.0244*
2006	0.0000	0.0101	0.0155	0.0000	0.0559	0.0276	0.0084	0.0000	0.0000	*0.1175*
2007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0079	0.0244	0.0000	*0.0323*
2008	0.0000	0.0000	0.0309	0.0000	0.0000	0.0368	0.0020	0.0000	0.0000	*0.0697*
2009	0.0000	0.0034	0.0000	0.0000	0.0000	0.0000	0.0049	0.0244	0.0000	*0.0327*
2010	0.0000	0.0000	0.0387	0.0059	0.0186	0.0092	0.0020	0.0081	0.0000	*0.0825*
2011	0.0000	0.0068	0.0077	0.0088	0.0000	0.0000	0.0030	0.0000	0.0000	*0.0263*
2012	0.0000	0.0000	0.0155	0.0088	0.0000	0.0184	0.0040	0.0570	0.0000	*0.1036*
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0407	0.0000	*0.0437*
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0049	0.0570	0.0000	*0.0619*

Source: Developed by the Authors

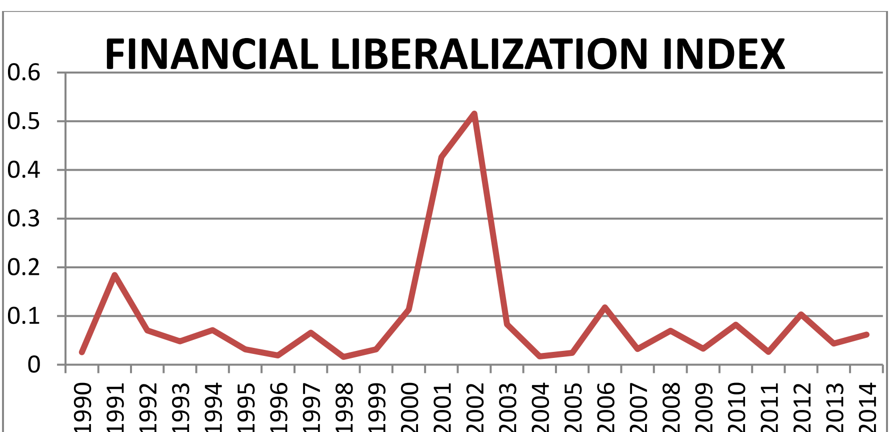

Figure 1. Financial Liberalization Index of Pakistan

Findings and Conclusion

The financial liberalization index of Pakistan is constructed by incorporating nine elements of financial sector reforms covering various dimensions of financial liberalization aspects including capital account, bank, and stock market liberalization. The index is based on factorial method. The financial reforms started in 1990 and in the next few years very few reforms were initiated till 1998. The findings of the study further explains that reforms accelerated from 1999 to 2003 whereas, the process of liberalization remained slow in the later time period. The findings of the study are unique in context of Pakistan as no such study observes financial liberalization reforms in the context of capturing continuous reforms from 1990's to 2014. Previous studies conducted in Pakistan focuses on trade openness, broad money, investment, or foreign direct investment (Munir, Chaudry, & Akhtar, 2013) as a determinant of financial liberalization process in the prior literature. Whereas, in comparison to studies conducted in various parts of the world to measure the level of financial liberalization like Demetriades and Luintel (1997) for India, Bandiera (2000) and Leavens (2003) for different developed and developing countries, Laurenceson and Chai (2003) for China, Chowdhury (2006) for Nepal, and Amaira and Amaira (2014) for Tunisia, this study approached to measure financial liberalization mechanism in a unique manner by incorporating the upcoming changes in the financial sector which is not covered in prior domestic and international literature.

Policy Recommendations

In short Pakistan has made progression in the adoption of financial sector reforms and applied various policies. However, the financial liberalization policies in Pakistan shows a downward trend after year 2003. The monetary policy makers should introduce more reforms to strengthen the financial system for achieving maximum benefits in the area of money market measures and Non-performing loans. The regulatory authorities shall also focus on the privatization policy reform as various state owned enterprises are suffering from week profitability. It is further suggested that upcoming financial liberalization policies shall be implemented with great credibility and provide conducive environment to achieve desired economic results. Future studies may be directed to evaluate the effect of financial liberalization on various segments (financial and non-financial) of the economy.

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