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IDENTIFYING COMBINATIONS OF INDIVIDUAL GOVERNANCE INDICATORS ESSENTIAL FOR ATTRACTING INTERNATIONAL CAPITAL FLOWS TO ASIAN ECONOMIES

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ABSTRACT

This study identifies essential combinations of individual governance indicators which influence inward capital flows for a group of seven highly interdependent Asian economies from 1997 to 2017. The panel data was estimated using a Seemingly Unrelated Regression (SUR) model. The findings show that selected governance indicators influence capital inflows together with traditional push and pull economic factors, such as global liquidity, global GDP growth, stock market return, and GDP growth. The study discovered two essential combinations of governance indicators which attract inward capital flows, one influencing portfolio inflow and the other influencing foreign direct investment (FDI). The two combinations of individual governance indicators supplement the role of traditional economic drivers of portfolio investment and FDI. The findings offer some policy implications; policies intending to attract capital flows into the local economies by offering only push and pull economic factors, such as improving the macroeconomic environment, may not be sufficient in the absence of improvement in governance quality. However, not all individual governance indicators are equally important as drivers of capital flows. The two essential combinations of governance factors found in this study should be given top priority for improvement if policymakers intend to attract more portfolio inflows and FDI.

Contribution/Originality: This study is one of very few studies which have investigated the combinations of individual governance indicators that attract capital inflow. The paper's primary contribution is finding that there are two combinations of indicators influencing inward capital flows to Asian economies. Those combinations supplement the role of traditional economic drivers.

1. INTRODUCTION

Numerous existing studies have investigated the role of economic factors in influencing capital flows. Some studies identify push factors, such as international interest rates and business cycles in advanced economies, as primary drivers of foreign capital flows (Calvo, Leiderman, & Reinhart, 1993; Ying & Kim, 2001). However, some argue that pull factors, which include return on domestic investments and exchange rate stability, are major determining factors of foreign capital flows (Dasgupta & Ratha, 2000; Hernandez, Mellado, & Valdes, 2001). Some found that both push and pull factors matter in attracting foreign capital (Chuhan, Claessens, & Mamingi, 1993; Taylor & Sarno, 1997).

The role of institution and governance as part of the push factors influencing capital inflows has been increasingly studied since the 2000s. Institutional factors used in those studies include such factors as property rights, institutional quality index, country risks, and selected governance indicators (Mercado & Park, 2011). While some studies investigated the influence of governance as a *component* of institutional quality measurement on capital flows (Kurul & Yalta, 2017; Yakubu, 2020), some specifically measure the influence of governance (Gani, 2007). Some use the words "institution and governance" interchangeably. They use governance indicators as a measurement of institutional quality (Bouchoucha & Yahyaoui, 2019; Layla et al., 2020; Peres, Ameer, & Xu, 2018). Our study belongs to the group of studies that use governance indicators as explanatory variables to explain inward capital flows, rather than using board measures of institutions.

Measuring the impact of governance on inward capital flows, along with traditional economic factors, is important. First, some countries show varying degrees of governance quality. Most developing countries receive governance scores lower than one or fall into a negative area, while those of developed countries are positive. Second, most countries have a policy prescription intended to attract capital flows by offering correct push and pull economic factors. However, offering the right mix of those factors may not be as effective without equal importance placed on governance reform. Therefore, offering the right combination of push and pull factors, together with improving the quality of individual governance indicators, may be vital in attracting inward capital flows.

The studies on governance environment as a pull factor that influences capital inflow are prevalent and the results seem conclusive and consistent with conventional wisdom that improvement in governance quality attracts capital inflow. For example, many studies found that governance quality affects aggregate capital flows (Alvarez, 2015; Biro, Erdey, Gall, & Markus, 2019; Khan, Khan, Jan, Jandan, & Khan, 2019; Wijethunga & Dayaratne, 2018; Wu, Li, & Selover, 2012); some provide evidence that governance quality attracts portfolio investment and FDI (Behera, Mishra, Priyadarshini, & Satpathy, 2020; Bouchoucha & Yahyaoui, 2019; Buchanan, Le, & Rishi, 2012; Gok & Dogru, 2016; Layla et al., 2020; Sabir, Rafique, & Abbas, 2019; Yakubu, 2020). However, the studies that identify a set of essential individual governance indicators that attract capital flows are rare.

There is some empirical evidence suggesting that not all individual governance indicators are equally important as pull factors to attract capital inflow. For example, while Gangi & Abdulrazak (2012) found government effectiveness important in attracting FDI into African countries, Aloui (2019) found that it is not significant in ASEAN countries.

This study is an explicit effort to specifically investigate the combinations of individual governance factors that play essential roles in attracting capital flows from 1997 to 2017 for seven highly interdependent Asian countries – Malaysia, the Philippines, Thailand, Indonesia, South Korea, Singapore, and Japan. It identifies two combinations; one attracts foreign portfolio investment and the other attracts FDI. Identifying the combinations of governance indicators is important as it may help policymakers make better decisions regarding improving selected individual governance indicators and provide the right economic push and pull factors to attract capital inflow.

We structure the rest of the paper as follows: Section 2 presents the review of literature, followed by the research methodology in Section 3; the analysis is contained in Section 4, followed by discussion in Section 5, and Section 6 concludes the paper with the findings and policy implications.

2. REVIEW OF LITERATURE

Previous studies have extensively investigated economic drivers of international capital flows. Some researchers studied push factors, such as international interest rates and business cycles, in advanced economies as primary drivers of foreign capital flows (Calvo et al., 1993; Ying & Kim, 2001). However, some argue that pull factors, which include return on domestic investments and exchange rate stability, are major determining factors of foreign capital flows (Dasgupta & Ratha, 2000; Hernandez et al., 2001). Many contend that both push and pull factors matter in attracting foreign capital (Chuhan et al., 1993; Taylor & Sarno, 1997). Mercado & Park (2011)

identified factors that explain the size and volatility of various types of capital flows to Asia's developing economies. They estimated a panel dataset and showed that per capita income growth, trade openness, and change in stock market capitalization are important determinants of capital inflows to developing Asia. Trade openness increases the volatility of capital inflows, while a change in stock market capitalization, global liquidity growth, and institutional quality lowers the volatility.

Since the ground-breaking paper "Institutions as a Fundamental Cause of Long-Run Growth" (Acemoglu, Johnson, & Robinson, 2005), a new strand of literature on drivers of capital flows has emerged, showing the roles played by institutional factors and political environments in determining growth of capital flows.

One group under the new-strand literature investigates the role of institution as a pull factor, while the other studies influence of political environment on inward capital flows. The institution scholars contend foreign agents might base their foreign investment decision not only on economic pull factors but also on institutional pull factors. They assert that institutional quality plays a role in attracting capital flows because it influences the expected value of investment as investors take into consideration property rights and credibility of government policy (Alvarez, 2015). Therefore, an improvement in institutional quality should attract more capital flows. Buchanan, Le, & Rishi (2012) found that institutional quality is positively associated with FDI, and Alvarez (2015) found that government effectiveness and regulatory quality are the most important determinants of capital flows.

From the political environment perspective, inward capital flows depend on the total productivity factor (TFP), credit market imperfections, and political conditions. Countries with a low TFP are unattractive to international investors. Differences in TFP can be because of political factors that facilitate the development of technology, institution, and human capital (Sauter & Walter, 2008). Göktan (2015) demonstrated how institutional quality explains low capital flows to developing nations.

Regarding credit market imperfections, the political environment of host countries determines credit market imperfections (Sauter & Walter, 2008). There are asymmetric information problems between borrowers and lenders. Asymmetric information causes the detrimental effects of credit market imperfections on foreign capital flows (Gertler & Rogoff, 1990). Increased transparency could ease informational friction on equity markets (Portes & Rey, 2005).

The political conditions leading to high government capacity enhances intrinsic interests of governments to attract foreign capital. Governments with high levels of political capacity with an open market policy framework send clear signals of a political environment conducive to profitability. In terms of inward capital flow, governments attract FDI when they have the political capacity to realize their commitments to open market policies (Coan & Kugler, 2008). Coan and Kugler's findings coincide with those of Feng (2003) that political capacity not only has a modest impact on domestic private investment, but it also has significant effects on attracting aggregate FDI stock.

The institutional quality and political environment perspectives imply the role of politics and institution in attracting capital flows. Politics can affect policy via governance. While politics creates governance, governance creates and implements policies in a political community. Most nations have implemented policies that attract foreign capital, and a vast majority of existing studies found supporting evidence that governance environment significantly influences capital flows.

Using data from 46 developed and developing countries from 2005 to 2008, Wu et al. (2012) found that governance environment is a significant determinant of capital inflow. Similarly, analyzing the data from 56 countries during 1996–2012, Alvarez (2015) found that countries with better governance attract more inflows. Wijethunga & Dayaratne (2018) found that foreign investors were mindful of the prevailing governance mechanism before investing in the Sri Lanka Stock Market. Biro et al. (2019) showed that good governance is a factor attracting FDI to Latin American countries. Khan et al. (2019) provided evidence from 1996 to 2012 that India attracted more FDI because of improvements in governance.

A survey done by McKinsey (2010) covering over 200 institutional investors in 31 countries showed that governance had moved to the heart of investment decisions. Beard & Gossel (2019) studied the relationship between World Governance Indicators and foreign portfolio investment in 33 Sub-Saharan African countries (SSA). They found that quality of governance significantly attracts portfolio inflows. Wijethunga & Dayaratne (2018) found governance quality had a positive impact on portfolio investment in Sri Lanka between 1992 and 2017.

Gok & Dogru (2016) showed that improvements in governance and higher GDP attract more FDI inflows into developing countries. Bouchoucha & Yahyaoui (2019) studied the interaction effects of FDI and overall governance indicators and found that their interaction effects influence economic growth. This means that overall governance enhances the impact of FDI on economic growth. Behera et al. (2020) found the existence of a long-run relationship between governance indicators and FDI inflows for South Asian countries.

While studies on the influence of governance quality on capital inflow are prevalent, studies which identify a set of essential individual governance indicators that attract capital flows are rare. Nguyen & Cao (2016) found a set of three essential factors attracting FDI to Vietnam – political stability, regulatory quality, and control of corruption.

Identifying essential combinations of governance factors influencing capital inflow is important. There are six governance indicators; however, it is likely that not all governance indicators play a crucial role in attracting capital flows.

3. METHODOLODY

We collected 21 years of annual data from 1997 to 2017 for seven Asian countries from several sources, including the World Bank, the International Monetary Fund, BIS Financial Indicators, the BIS global liquidity indicators, International Financial Statistics, the Financial Development Index, and the Federal Reserve Board. The countries included in the study are Malaysia, the Philippines, Thailand, Indonesia, Singapore, South Korea, and Japan. While Malaysia, the Philippines, Thailand, South Korea, and Indonesia represent emerging market countries, Japan and Singapore represent advanced markets. These seven Asian economies are highly interdependent in terms of trade flows. We can observe this from the effect of the 1997 Asian Financial Crisis, which initially began in Thailand and then spread to the entire region, but it affected those seven economies more than the rest of the region (Chew, 2009; Ito, 1999). However, the magnitude of the impact varied from country to country.

Those countries showed substantial improvements in governance after the crisis. We added a dummy variable representing the 1997 financial crisis to the dataset. We estimated the panel dataset using a seemingly unrelated regression (SUR) model. SUR is suitable for estimating panel data models with long time periods but small sample sizes (long T, but small N) (Zellner, 1962).

3.1. Model Specification

We built the estimation models based on the concept of, and literature on, traditional push and pull factors, which play roles in attracting foreign capital, such as return on equity, economic growth, and global liquidity. However, governance indicators have emerged as pull factors along with traditional factors since the early 2000s. Therefore, our estimation models include both traditional economic variables as independent variables and governance indicators as explanatory variables. We used precise measurements of "governance" rather than broad measurements of "institution". Regarding dependent variables, we used three types of capital inflows: portfolio investment, FDI, and gross capital flow. The estimation models in Equations 1 and 2 are specified below.

Equation 1 estimates the impact of overall governance quality on gross capital flow.

$$\text{GCAPFLOW}_{ij} = \beta_0 + \beta_1 \text{STOCKRETURN}_{ij} + \beta_2 \text{GDPCAPGR}_{ij} + \beta_3 \text{GLIQUIDITYG}_{ij} + \beta_4 \text{WGDPGROWTH}_{ij} + \beta_5 \text{FINCRISIS}_{ij} + \beta_6 \text{AGOVERNANCE}_{ij} + e_{ij} \qquad (1)$$

Where,

GCAPFLOW = gross capital flow; combination of FDI and portfolio investments.

STOCKRETURN = global stock price growth.

GDPCAPGR = per capita GDP growth.

GLIQUILITYG = global liquidity growth.

WGDPGROWTH = world GDP growth.

FINCRISIS = Asian financial crisis; "1" represents the years of financial crisis, and "0" otherwise.

AGOVERNANCE = factor loading (from factor analysis) of six worldwide governance indices, comprising:

ROL = rule of law.

RQ = regulatory quality.

CC = control of corruption.

VA = voice and accountability.

GE = government effectiveness.

PS = political stability.

To estimate the impact of each individual governance indicator on each type of capital flow, we specify Equation 2 as follows:

$$CF_{ij} = \beta_0 + \beta_1 STOCKRETURN_{ij} + \beta_2 GDPCAPGR_{ij} + \beta_3 GLIQUIDITYG_{ij} + \beta_4 WGDPGROWTH_{ij} + \beta_5 FINCRISIS_{ij} + \beta_6 iGOVERNANCE_{ij} + e_{ij} \qquad (2)$$

Where,

CF = capital flow, comprising portfolio inflow and FDI (each enters Equation 2 one at a time)

FDI = foreign direct investment

PORTFOLIO = portfolio investment

iGOVERNANCE = individual governance consisting of ROL, RQ, CC, GE, VA, and PS. Each individual governance factor enters Equation 2 one at a time.

Table 1 presents the definitions of variables included in the estimation models.

Table 1. Variables in the equations and their definition.

Variable	Definition
LAGGCAPFLOW	Lag of gross capital flow
GCAPFLOW	Gross capital flow
LAGPORTFOLIO	Lag of portfolio inflow
PORTFOLIO	Portfolio inflow
LAGFDI	Lag of FDI
FDI	Foreign direct investment
STOCKRETURN	Stock market return
GDPCAPGR	Per capita GDP growth
GLIQUIDITYG	Global liquidity growth
WGDPGROWTH	World GDP growth
FINCRISIS	Asian financial crisis
TIME	Time trend
AGOVERNANCE	Aggregated governance
ROL	Rule of law
RQ	Regulatory quality
CC	Control of corruption
VA	Voice and accountability
GE	Government effectiveness
PS	Political stability

Table 2 reports the regression coefficients of regressing gross capital flows (GCAPFLOW) on aggregated governance indicators, while Tables 3 and 4 show the estimation results of regressing foreign portfolio investment (PORTFOLIO), and foreign direct investment (FDI) on each individual governance indicator, respectively.

4. ANALYSIS

In Table 2, we regressed gross capital flow (GCAPFLOW) on aggregated governance and push and pull economic factors.

Table 2. The impact of aggregate governance on gross capital flow.

Equation 1	
Dependent Variable	**GCAPFLOW**
Variable	Coefficient
	(S.E)
C	-90.2
	(87.2)
LAGGCAPFLOW	0.559***
	(0.090)
STOCKRETURN	-1.84***
	(.689)
GDPCAPGR	6.090
	(4.26)
GLIQUIDITYG	-15***
	(5.64)
WGDPGROWTH	15.2
	(14.2)
FINCRISIS	7.42
	(78.4)
TIME	11.5**
	(5.13)
AGOVERNANCE	60.4***
	(16.7)
R-squared	0.666949
Adjusted R-squared	0.64661
S.E. of regression	0.81233
F-statistic	32.79169
Prob(F-statistic)	0
Durbin-Watson stat	2.027365

Note: *** significant at < 1%; ** significant at < 5%; * significant at < 10%.

The AGOVERNANCE variable in this equation is the factor extracted from factor analysis of six governance indicators: namely, rule of law, regulatory quality, control of corruption, voice and accountability, political stability, and government effectiveness.

Table 2 shows the regression results of Equation 1, which represent the impact of aggregated governance quality on capital inflow. The coefficient of AGOVERNANCE is statistically significant. Improvement in governance quality indicators leads to increases in capital inflow.

Next, we break down capital flows into two categories: portfolio investment and FDI. Then, we estimate the impact of each individual governance variable on foreign portfolio investment and foreign direct investment according to Equation 2.

From Table 3, the coefficients of all governance variables, except voice and accountability, are statistically significant and positive. This means that the combination of individual governance indicators essential to attracting foreign portfolio investment to these seven economies comprises rule of law, regulatory quality, control of corruption, government effectiveness, and political stability. Together with those individual governance variables, stock market return and global liquidity growth are also statistically significant.

Table 3. The impact of individual governance indicators on foreign portfolio investment.

Variable	(1) ROL Coefficient (S.E.)	(2) RQ Coefficient (S.E.)	(3) CC Coefficient (S.E.)	(4) GE Coefficient (S.E.)	(5) VA Coefficient (S.E.)	(6) PS Coefficient (S.E.)
C	38.600	23.000	42	20.2	19.8	53.5
	(45.700)	(45.700)	(44.9)	(45.2)	(49.8)	(47.2)
LAGPORTFOLIO	0.372***	0.327***	0.338***	0.340***	0.433***	0.416***
	(0.104)	(0.107)	(0.104)	(0.105)	(0.103)	(0.101)
STOCKRETURN	-1.310**	-.940	-1.14*	-1.34**	-1.4**	-1.41**
	(.665)	(.688)	(0.669)	(0.657)	(0.699)	(0.666)
GDPCAPGR	2.300	.867	1.580	2.34	4.48	2.87
	(3.700)	(3.930)	(3.810)	(3.62)	(4.1)	(3.77)
GLIQUIDITYG	-10.500*	-10.800**	-11.200**	-10.400*	-11.3**	-11.2**
	(5.450)	(5.470)	(5.330)	(5.390)	(5.54)	(5.4)
WGDPGROWTH	-1.580	.235	-0.725	-0.414	4.2	-1.69
	(12.800)	(12.700)	(12.600)	(12.500)	(14.2)	(13.3)
FINCRISIS	-11.400	-20.900	-7.290	-6.09	-9.1	-8.34
	(68.800)	(69.100)	(67.500)	(67.7)	(70.8)	(68.200)
ROL	46.000***					
	(16.300)					
RQ		59.900***				
		(18.300)				
CC			41.700***			
			(12.900)			
GE				46.9***		
				(14.8)		
VA					-20.9	
					(22.6)	
PS						22.7**
						(10.2)
R-squared	0.352579	0.361418	0.35821	0.197855	0.240458	0.331063
Adjusted R-squared	0.318246	0.327553	0.324176	0.982883	0.20018	0.295589
S.E. of regression	0.824214	0.815085	0.820419	88.67958	0.795794	0.81962
F-statistic	10.26942	10.67256	10.52496	1.94064	5.969857	9.332567
Prob(F-statistic)	0	0	0		0.000005	0
Durbin–Watson stat	1.953957	1.972886	1.961341	1.94064	1.937161	1.956639

Note: Dependent variable is portfolio investment. *** significant at < 1%; ** significant at < 5%; * significant at < 10%.

We then test the impact of each governance variable on FDI. From Table 4, only four out of six governance variables are statistically significant. This shows that the combination of governance indicators essential to attracting FDI are rule of law, control of corruption, government effectiveness, and political stability. Traditional economic variables, including GDP per capita growth, global liquidity, and world GDP growth, are significant.

In summary, together with traditional economic push and pull factors, we found two different combinations of factors influencing portfolio inflow and foreign direct investment into these seven Asian economies. The five-factor combination influencing portfolio inflow comprises rule of law, regulatory quality, control of corruption, government effectiveness, and political stability. The combination essential to attracting FDI comprises four indicators – rule of law, control of corruption, government effectiveness, and political stability.

5. DISCUSSION

The findings show that, first, together with conventional economic push and pull factors, overall governance quality positively influences gross capital flow. Second, there are two essential combinations of individual governance indicators which are essential to attracting capital flow to these seven economies. The combination influencing portfolio investment comprises five factors, namely regulatory quality, control of corruption, government effectiveness, rule of law, and political stability. The combination that influences FDI comprises four indicators, namely rule of law, control of corruption, government effectiveness, and political stability.

Table 4. The impact of individual governance indicators on FDI.

Variable	(1) ROL	(2) RQ	(3) CC	(4) GE	(5) VA	(6) PS
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
	(S.E.)	(S.E.)	(S.E.)	(S.E.)	(S.E.)	(S.E.)
C	–6.91	–12.1*	–6.21	–11.4	–13.5*	1.79
	(8.02)	(7.14)	(8.07)	(7.2)	7.26	(9.22)
LAGFDI	0.840***	0.857***	0.841***	0.852***	0.887***	0.836***
	(0.050)	(0.049)	(0.049)	(0.048)	0.046	(0.048)
STOCKRETURN	0.069	0.065	0.077	0.048	0.072	.113
	(0.130)	(0.126)	(0.124)	(0.127)	0.141	(.130)
GDPCAPGR	2.9**	3.01**	2.78**	2.92**	3.23**	2.67**
	(1.24)	(1.22)	(1.22)	(1.21)	1.26	(1.23)
GLIQUIDITYG	1.41***	1.36***	1.37***	1.26**	1.3**	1.26**
	(0.506)	(0.481)	(0.487)	(0.498)	0.572	(0.500)
WGDPGROWTH	2.89	3.52**	3.23*	3.47**	3.47*	2.37
	(1.82)	(1.72)	(1.79)	(1.82)	1.86	(1.74)
FINCRISIS	5.5	7.91	7.74	9.29	8.74	2.21
	(7.15)	(6.59)	(6.59)	(6.66)	7.8	(7.3)
ROL	9.34**					
	(4.5)					
RQ		6.97				
		(5.71)				
CC			8.34*			
			(4.41)			
GE				7.99*		
				(4.49)		
VA					0.883	
					6.07	
PS						7.33**
						(2.85)
R-squared	0.782235	0.779281	0.779323	0.782744	0.775435	0.79196
Adjusted R-squared	0.770687	0.767576	0.76762	0.771223	0.763526	0.780927
S.E. of regression	0.970252	0.977425	0.972818	0.967115	0.979562	0.967978
F-statistic	67.73701	66.57782	66.59409	67.93973	65.1148	71.78459
Prob(F-statistic)	0	0	0	0	0	0
Durbin–Watson stat	2.353448	2.370371	2.36178	2.356995	2.344075	2.326726

Note: *** significant at < 1%; ** significant at < 5%; * significant at < 10%. Dependent variable is FDI.

Our findings differ from those conducted in different regions. Gangi & Abdulrazak (2012) only found three indicators – voice and accountability, government effectiveness, and rule of law – that influence inward FDI to African countries. Gossel & Beard (2019) found a combination of four factors, comprising government effectiveness, control of corruption, rule of law, and political stability, that influence portfolio inflows to Sub-Saharan Africa. Aloui (2019) found four factors, namely political stability, rule of law, regulatory quality, and voice and accountability, that affect FDI to ASEAN countries.

These findings imply that, first, distinct sets of governance indicators play a role in attracting international capital flows to specific regions/countries. For example, regulatory quality is significant in attracting capital flows to the seven Asian countries in our study; however, it is insignificant in other economies, such as those in African countries (Gossel & Beard, 2019). Second, although overall governance quality is important, not all individual governance indicators are equally important as factors that drive portfolio inflow and FDI.

6. CONCLUSION AND POLICY IMPLICATIONS

Our study aims to identify combinations of individual governance indicators that influence capital flows to seven specific economies. The findings show that, along with traditional push and pull factors, improvement in overall governance quality drives inward capital flows to local economies.

We found two essential combinations of governance indicators which influence inward capital flows, one influencing portfolio inflow, the other influencing FDI. The combination that influences foreign portfolio investment includes rule of law, regulatory quality, control of corruption, government effectiveness and political stability; while the one influencing FDI comprises rule of law, control of corruption, government effectiveness, and political stability.

Our findings offer some policy implications. Policy makers should know that usual policy prescription expecting to attract capital flows into local economies by offering correct push and pull factors, such as improving the macroeconomic environment, may not be sufficient in the absence of good governance. Improving the quality of governance supplements the effects of those traditional economic factors. However, not all individual governance indicators are equally important. The two essential combinations of governance factors found in this study should be top priority for improvement if governments intend to attract more portfolio inflow and FDI.

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