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DEGREE OF LINEAR ASSOCIATION AMONG EASE OF DOING BUSINESS AND SOME OTHER MACRO ECONOMIC VARIABLES IN INDIA- A CROSS SECTION DATA ANALYSIS

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Abstract: The ease of doing business index is meant to measure regulations directly affecting business and does not directly measure more general conditions such as nations proximity to large markets, quality of infrastructure ,inflation or crime. A nation's ranking on the index is based on the average of ten such sub indices. Economies are ranked on their ease of doing business, from 1–190. A high ease of doing business ranking means the regulatory environment is more conducive to the starting and operation of a local firm. The rankings are determined by sorting the aggregate scores on 10 topics, each consisting of several indicators, giving equal weight to each topic. India's rank in ease of doing business is 63 out of 190 nations. Regarding 10 indicators, India ranks 136 in starting a business, dealing with construction permits rank is 27, getting electricity rank is 22. But the worst rank are in the indicator enforcing contracts,' rank 163, registering property rank is 154, and paying taxes rank is 115. On the other hand protecting minority investors India's rank is comparatively good (13).

The objective of this study is to explore the linear relation between Ease of doing business and many other macro economic variables in India. The data has been taken from Statistical Hand Book published by Reserve Bank of India . Regarding methodology the correlation matrix , the regression based on significant linear association of the variables, are used in this study. The rank for ease of doing business is an indicator to attract foreign or private investor to invest for capital formation as well as for employment generation and economic growth. The ranks among 190 nations regarding the 10 indicators provides the government to modify the rules or regulations of amend or modify the existing regulations for further reform which will be conducive for minor , small or medium entrepreneurs. Now a day's the government's open intention is to advice the unemployed youth, not to seek job but try to provide job by initiating your entrepreneurship potentiality.

Keywords: Ease of Doing Business, Correlation matrix, India

INTRODUCTION

The ease of doing business index is an index created by World Bank group. Higher rankings imply better or simpler regulations for business and stronger protections of property rights. Empirical studies show that the economic growth impact of improving these regulations is strong. The ease of doing business index is meant to measure regulations directly affecting business and does not directly measure more general conditions such as nations proximity to large markets, quality of infrastructure , inflation or crime. A nation's ranking on the index is based on the average of ten such sub indices. Each based on the following necessary information. Procedures, Time, Cost and minimum capital to open a new business

(1) Starting a Business:

(2) Dealing with Construction permits

(3) Getting Electricity

(4) Registering Property

(5) Getting credit: Strength of legal rights index, depth of credit information index

(6) Protecting investors: indices on the extent of disclosure, extent of direct liability and ease of share holder suits.

(7) Paying taxes: number of taxes paid, hours per year spent preparing tax returns, and total tax payable as share of gross profit.

(8) Trading across borders: number of documents, cost and time necessary to export and import.

(9) Enforcing contracts: procedures, time and cost to enforce a debt contract.

(10) Resolving insolvency: the time cost and recovery rate (%) under bankruptcy proceeding.

Doing Business uses a simple averaging approach for weighing sub indicators and calculating rankings.

The doing business project also offers information on following datasets.

(1) Distance to frontier: it shows the distance of each economy to the frontier which represents the highest performance observed on each of the indicators across all economies included, since each indicator was included in doing business.

(2) Entrepreneurship: measures the entrepreneurial activity of the newly registered firms over the past few years.

(3) Good practices: it provides insights into how governments have

improved the regulatory environment especially in the areas measured by Doing Business.

(4) Transparency in Business regulation: Data on the accessibility of regulatory information measures how easy it is to access fee schedules for first four regulatory processes in the largest business city of an economy.

India's rank in ease of doing business is 63 out of 190 nations. Regarding 10 indicators, India ranks 136 in starting a business, dealing with construction permits rank is 27, getting electricity rank is 22. But the worst rank are in the indicator enforcing contracts,' rank 163, registering property rank is 154, and paying taxes rank is 115. On the other hand protecting minority investors India's rank is comparatively good (13).

The objective of this study is to explore the linear relation between Ease of doing business and many other macro economic variables in India. The data has been taken from Statistical Hand Book (2019) published by Reserve Bank of India (*WWW.RBI.Org*) , the correlation matrix , the regression based on significant linear association of the variables, are used in this study as research methodology. The variables that are used are Ease of doing business index, number of Units, Employment both male and female, per capita availability of power, rain route, and roads length, rural and urban unemployment, poverty, population density, real per capita income, population growth and literacy rate etc. on the other hand Newzeland's rank is one in the world in ease of doing business.

EMPIRICAL FINDINGS

First the correlation matrix has been calculated by using excel software, then the t value and the p value has been calculated.

Table 1: Correlation Matrix

	Ease of Dbus	f Units(la	ale emplo	male empl	al employ	pk avl.power	rail rot.	oads lenth	unemploymen	unemplo	}tendulk	opul.densit	ice sdp	ba	lation gr	teracy rat
Ease of Dbusl	1															
No of Units(lakh	0.527506	1														
no. of female em	0.480239	0.924088	1								Correlation Matrix					
no.of male empl	0.519202	0.974981	0.806685	1												
total employees	0.524758	0.991378	0.913251	0.99001	1											
pk avl.power	0.183045	-0.12731	-0.05404	-0.09129	-0.08428	1										
rail rot.	0.85581	0.834253	0.675253	0.884713	0.856312	-0.0690357	1									
roads lenth	0.571051	0.755955	0.658363	0.783443	0.774301	-0.14973447	0.810779	1								
Rural unemploy	-0.53356	-0.32971	-0.29016	-0.3377	-0.33547	-0.11928218	-0.47711	-0.35565	1							
Urban unemploy	-0.50598	-0.3141	-0.29366	-0.33075	-0.33104	-0.32431612	-0.39949	-0.33914	0.845231649	1						
Poverty(%)tendu	0.028349	0.065528	-0.06203	0.083612	0.047648	-0.68570492	0.163239	0.163243	-0.21179273	-0.04698	1					
popul.density	-0.15903	-0.01638	-0.04434	0.026924	0.00882	0.257079025	-0.12599	-0.14288	0.275390809	-0.09687	-0.18811	1				
pk cont.price sdp	-0.06252	-0.23	-0.12909	-0.20192	-0.1889	0.83154662	-0.2876	-0.23122	0.124229699	-0.22182	-0.62459	0.465029	1			
population grow	-0.00686	-0.03125	-0.17437	0.022811	-0.02872	-0.19405307	0.110223	-0.07201	-0.56404846	-0.39832	0.501041	0.105789	-0.2736	1		
literacy rate	-0.30305	-0.2689	-0.116	-0.26814	-0.23609	0.321333218	-0.45033	-0.22721	0.371792459	0.206428	-0.42006	0.203798	0.551066	-0.41842	1	

Table 2: t-values

	Ease of Dbus	of Units(la	ale emplo	male empl	al employ	pk avl.power	rail rot.	oads lenth	unemploymen	unemplo	)tendulka	opul.densi	ice sdp ba	ulation gr	teracy rat
Ease of Dbusi	1														
No of Units(lakh)	3.104611	1													
no. of female em	2.737533	12.08973	1												
no of male empl	3.037504	21.93047	7.956145	1											
total employees	3.082276	37.83003	11.20834	35.10705	1										
pk avl.power	0.930952	-0.64179	-0.27058	-0.45837	-0.42291	1				t value					
rail rot.	4.343538	7.565109	4.577451	9.489857	8.290241	-0.34600399	1								
roads lenth	3.47814	5.773968	4.373339	6.303218	6.117886	-0.75720892	6.92557	1							
Rural unemploy	-3.15434	-1.74618	-1.51601	-1.79388	-1.78052	-0.60069968	-2.71441	-1.90263	1						
Urban unemploy	-2.93309	-1.65425	-1.53605	-1.7524	-1.75413	-1.71423726	-2.17888	-1.8025	7.908228878	1					
Poverty(%)tendu	0.141803	0.328344	-0.31076	0.419528	0.238511	-4.71029058	0.827293	0.827314	-1.08354431	-0.23517	1				
popul.density	-0.80541	-0.08192	-0.22193	0.13467	0.044102	1.330099252	-0.635	-0.72179	1.432339224	-0.48666	-0.95764	1			
pk cont.price sdj	-0.3132	-1.18166	-0.6509	-1.03082	-0.96183	7.48527487	-1.50142	-1.18833	0.625997795	-1.13742	-3.99894	2.626402	1		
population grow	-0.0343	-0.15635	-0.88544	0.114086	-0.14364	0.98906649	0.55449	-0.361	-3.42340645	-2.17131	2.894776	0.531931	-1.42228	1	
literacy rate	-1.59004	-1.39594	-0.58394	-1.39166	-1.21477	1.696645674	-2.5218	-1.16654	2.002510507	1.054857	-2.32042	1.040834	3.309681	-2.30243	1

Table 3: p-Values

	Ease of Dbus	of Units(la	ale emplo	male empl	al employ	pk avl.power	rail rot.	oads lenth	unemploymen	unemplo	)tendulka	opul.densi	ice sdp ba	ulation gr	teracy rat
Ease of Dbusi	1														
No of Units(lakh)	0.00469	1													
no. of female em	0.011236	6.12E-12	1												
no of male empl	0.005517	7.62E-18	2.6E-08	1											
total employees	0.004951	1.37E-23	3.06E-11	8.57E-23	1					P value					
pk avl.power	0.360782	0.526853	0.788935	0.650643	0.675976	1									
rail rot.	0.000204	6.41E-08	0.000111	9.13E-10	1.22E-08	0.73223467	1								
roads lenth	0.001865	5.11E-06	0.000189	1.35E-06	2.15E-06	0.456002673	2.93E-07	1							
Rural unemploy	0.004155	0.093058	0.14206	0.084937	0.087149	0.553447521	0.011856	0.068667	1						
Urban unemploy	0.007087	0.110581	0.137088	0.091964	0.09166	0.098858833	0.038975	0.083536	2.89795E-08	1					
Poverty(%)tendu	0.888372	0.745386	0.758562	0.678414	0.813429	7.89481E 05	0.415888	0.415887	0.288906886	0.815996	1				
popul.density	0.428178	0.935362	0.826168	0.893951	0.965173	0.195493357	0.531198	0.477122	0.164432779	0.630741	0.347416	1			
pk cont.price sdj	0.756779	0.248458	0.521047	0.312495	0.345345	7.72753E-08	0.145773	0.245871	0.536990369	0.266148	0.000497	0.014522	1		
population grow	0.972906	0.877013	0.384359	0.910081	0.886939	0.332107373	0.584169	0.72113	0.002138338	0.039604	0.007763	0.59947	0.167303	1	
literacy rate	0.124393	0.175008	0.564494	0.176284	0.235804	0.102182003	0.018416	0.254406	0.056188616	0.301579	0.02877	0.307914	0.002837	0.029851	1

The Regression Model: the regression model is based on keeping ease of doing business as dependent variable and the variables which are significant in as shown by correlation matrix are taken as independent variable.

Table 4: Regression Results

	Coefficients	*Standard Error*	*t- Stat*	*p-value*
Intercept	55.94132	12.35313	4.528513	0.00026
No of Units(lakh)	1.903796	1.996454	0.953588	0.352923
no. of female employees(lakh)	382.3155	475.7392	0.803624	0.432099
no of male employees	381.2602	476.364	0.800355	0.433942
total employees	-382.772	476.4253	-0.80342	0.432212
rail route.	0.011974	0.00629	1.903827	0.073046
roads length	3.42E-05	6.37E-05	0.536846	0.597948
Rural unemployment(000)	-0.03916	0.339082	-0.11549	0.909338
Urban unemployment	-0.15411	0.192614	-0.80011	0.43408

Observations =27, R Square=0.580833, Adjusted R Square=0.394536

FINDINGS

From the above tables we find

(i)   Ease of doing business index and number of units(enterprises) are positively correlated

(ii) Number of male and female employment or total employment is also positively related with ease of doing business index

(iii) Ease of doing business index is also positively correlated to the road infrastructure development of the nation as a result it is positively correlated with rail route and roads lengths. But it is not significantly correlated to per capita availability of power.

(iv) Ease of doing business is negatively correlated to both rural and urban unemployment. It implies with the upliftment of the business environment of the nation unemployment reduces. So entrepreneurship or taking the initiative for starting business or establishment (both farm or non-farm) may be a solution to reduce unemployment problem in India.

(v)   Poverty, population density, per capita income, population growth, and literacy rate are not significantly correlated with the ease of doing business index in India.

(vi) The regression results shown in table 4 in shows that there is no causal relation among the independent variables and ease of doing business. This means we cannot predict ease of doing business index from any particular value of the independent variables. Only the intercept is significant.

CONCLUSION

Economies are ranked on their ease of doing business, from 1–190. A high ease of doing business ranking means the regulatory environment is more conducive to the starting and operation of a local firm. The rankings are determined by sorting the aggregate scores on 10 topics, each consisting of several indicators, giving equal weight to each topic. The rank for ease of doing business is an indicator to attract foreign or private investor to invest for capital formation as well as for employment generation and economic growth. The ranks among 190 nations regarding the 10 indicators provides the government to modify the rules or regulations of amend or modify the existing regulations for further reform which will be conducive for minor , small or medium entrepreneurs. Now a day's the government's open secret intention is to advice the young educated unemployed youth , not to seek job but try to provide job by initiating entrepreneurship potentiality.

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