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## Investigating Factors Related to Easy of Doing Business Score in Asian Countries

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### ABSTRACT

The objective of this study is to investigate the relationship between ease of doing business score (EDBS) and cost of business start-up procedures (CBS), age dependency ratio (ADR), strength of legal rights index (SLRI), time required to get electricity (TRGE), domestic credit to private sector (DCPS), and start-up procedures to register a business (SPRB). Since 2004, the World Bank evaluates 190 economies based on business regulatory indicators ignoring other factors that may be related to business environment. This paper investigates new factors related to EDBS ignored by the World Bank since 2004. The results of correlation analysis show a negative and significant correlation between EDB and CBS, ADR, TRGE, and SPRB. Nevertheless, a positive and significant correlation was found between EDB and SLRI and DCPS. The linear regression model finds that SLRI and DGPS affected EDB positively and significantly. However, TRGE and SPRB affected negatively to EDB. Asian policymakers should reinforce SLRI and increase DCPS. However, they should also reduce TRGE and SPRB to improve EDB. Further research should be conducted on other regions and test also other factors.

**Keywords:** Ease of Doing Business, Getting Electricity, Cost of Starting Business, Procedures

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### INTRODUCTION

Since 2004, the World Bank (W.B.) produces a report evaluating 190 economies indicating how economies are ranked on ease of doing business. Only regulations that may have impact on 12 areas of the life of a business are assessed. The W.B focuses on regulation ignoring other factors that may affect business environment. Those areas include procedures on opening a business, recording property, accessing to construction permits, receiving electricity, accessing to credit, defending minority investors, taxes payment, transaction across borders, implementing contracts, undertaking insolvency, engaging workers, and contracting with the government (World Bank, 2020). The W.B. (2020) also indicated that business-friendly regulation was related with a lower poverty head count at the economy level especially when data on getting credit and enforcing contracts are considered. Canare (2018) said that ease of doing business was positively associated to business creation. Moreover, liberty regarding wages and prices, property

rights, and licensing requirements leads to economic development (W.B, 2020). The W. B. (2020) has reported that higher levels of entrepreneurship are correlated with greater ease of doing business. Better job opportunities, higher government tax revenues, and better personal earnings are generated by growing entrepreneurship.

The real life of Business is not affected only by these areas considered by the W.B. The ranking report produced annually by the W.B. may be misleading as it does not consider country or regions specificities (João et al., 2020). Some other factors were found to have impact on business life. For example, having ease access to financial resources was found to be related to entrepreneurial intention (Valentina and Angela, 2019). A greater number of populations supported by working-population will reduce the income of working-population. The situation will prevent working population from saving or investing in new business. Dey (2019) said that low-income level is used in consumption purposes. Huang, Lin and Lee (2019) demonstrated that old-age dependency ratio had a significant negative impact on economic growth. Jaoui and Rashid (2015) suggested reinforcing the legal rights of borrowers and lenders under collateral and bankruptcy laws to improve access to finance in Qatar.

The limitations of the report on ease of doing business regarding the considerations of potential investors are expressed by the World Bank. Potential investors have considered a range of factors such as the overall nature of the business climate of the economy and its national competitiveness, macroeconomic stability, the growth of the financial system, the size of the market, the rule of law and the quality of the labour force (W. B., 2020). Okrah and Nepp (2018) found that accessing to financing was the most influential factor of innovation in developed countries. Interbank interest rate changes and the unemployment were found to have the greatest impact on profitability of small and medium enterprises in Lithuania (Bekeris, 2012). Khader, Rajan and Sen (2014) concluded that lending interest rates, access to internet and a country's GDP per capita were the most influential factors of ease of business.

No study has been conducted to understand how business areas evaluated in doing business report are related to ease of doing business score in Asian countries. Moreover, no study has investigated how factors such as age dependency ratio, strength of legal rights index, and domestic credit to private sector may be related to ease of doing business score in Asian countries. However, previous studies have shown that macroeconomic factors were related to business environment. Therefore, the purpose of this study is to determine the factors related to ease of doing business score in Asian countries. Specifically, the study tends to achieve the following sub-objectives: To investigate the relationship between ease of doing business score and cost of business start-up procedures; To examine the relationship between ease of doing business score and age dependency ratio; To explore the relationship between ease of doing business score and strength of legal rights index; To understand the relationship between ease of doing business score and time required to get electricity; To discover the relationship between ease of doing business score and domestic credit to private sector; To study the relationship between ease of doing business score and start-up procedures to register a business.

## THEORETICAL REVIEW

Entrepreneurship is recognized as a key growth factor because it contributes in creating new enterprises, new jobs, increasing income, reducing poverty, developing innovation, and developing competitiveness (Valentina and Angela, 2019). Additionally, entrepreneurship was found contributing positively on economic growth (Stoica, Roman and Rusu, 2020). Countries are making progress in developing business regulatory which is more favorable to business environment. For instance, the W. B. (2020) indicated that 58 economies have deleted the need for paid-in minimum capital to start a business, while 48 others have condensed the amount of capital required at starting a business. 56 new credit offices and 32 new credit offices have launched worldwide. 63 economies have launched online systems for filing and paying taxes. 45 economies have approved reforms on implementing or strengthening reorganization procedures to resolve insolvency. Prior study stated that ease business regulatory increase business creation. The W. B. (2020) for instance, indicated that greater ease of doing business was connected to higher levels of entrepreneurship. Canare (2018) affirmed that ease of doing business was positively correlated to business creation. Divanbeigi and Ramalho (2015), after analyzing 180 countries, determined that an upgrading of 10 points in the overall measure of business regulations was associated to an increase of around 0.5 new businesses per 1,000 adults.

Nevertheless, business regulatory as it is evaluated by the W.B. in doing business report is not enough. Macro-economic factors and socio-demographic factors may affect business activities. This was confirmed by João et al. (2020) who indicated that regulating business environment does not sufficiently explain the tendency to start a business. Álvarez, Amorós and Urbano, (2014) said that regulations have numerous effects on entrepreneurship, depending on the economic growth of the region. The ease of doing business score as the dependent variable measures the distance between an economy and the "frontier," which reflects the best performance observed in all economies and years since 2005 on each Doing Business subject (W.B. 2020).

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### **Cost of Business Start-up Procedures**

The W. B. (2020), indicated that as the paid-in minimum capital requirement for business start-ups becomes high, the business entry rate in the economy becomes small demonstrating a negative correlation between minimum capital and business entry. Darnihamedani et al. (2018) indicated that costs of company start-up like notary charges or registration costs constitute one-off costs that increase the barriers to entry into entrepreneurship. High start-up costs are typically correlated with low entrepreneurship rates. It is found that lower business costs are a much stronger indicator of business creation than the ease of doing business (Canare, Francisco, and Morales, 2017). Based on these empirical studies, the hypothesis is:

H1: There was a negative relationship between ease of doing business score and cost of business start-up procedures in Asian countries.

### **Age Dependency Ratio**

Age dependency ratio as percentage of working-age population is the ratio of dependents-people younger than 15 or older than 64-to the working-age population-those ages 15-64 (W.B.,2020). Huang, Lin and Lee (2019) specified that old-age dependency ratio had a significant negative impact on economic growth. Klasen and Lawson (2007) indicated that the current high population growth in Uganda is related to households becoming persistently poor and heading to poverty. Bidisha, Abdullah and Islam (2019) discovered a negative and significant long-run impact of dependency ratio on per capita growth of Bangladesh. When out of work people increases, it will reduce the revenue of working people which reduce their ability of investing and saving. With limited revenue, demand of goods and services will be reduced. Therefore, business environment will be affected negatively. The hypothesis becomes:

H2: There was a negative correlation between ease of doing business score and age dependency ratio.

### **Strength of Legal Rights Index**

Strength of legal rights index evaluates the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and consequently facilitate lending (W.B., 2020). Okrah and Nepp (2018) indicated that accessing to financing was the most influential factor of innovation in developed countries. Interbank interest rate changes were found to have the greatest impact on profitability of small and medium enterprises in Lithuania (Bekeris, 2012). Khader, Rajan and Sen (2014) concluded that lending interest rates, was the most influential factors of ease of business. Accessing to credit at low lending interest rate will enhance business environment. Yoshino and Taghizadeh-Hesary (2018) Asian small and medium-sized enterprises (SMEs) face significant challenges in accessing cheap finance, largely due to the asymmetric knowledge issue between fund suppliers and requesters and the high transaction costs. This leads to more collateral requirements for lending to small and medium-sized enterprises with higher lending interest rates, hampering their growth.

H3: There was positive correlation between ease of doing business score and strength of legal rights index.

### **Time Required to Get Electricity**

Time required to get electricity indicates the approximative number of days to get a permanent electricity connection (W.B., 2020). Electricity is important in production process especially for industrial company. The time of getting electricity affects negatively ease of doing business since the cost is high in low-income countries (Geginat & Rita, 2018). Frederick and Josephine (2016), indicated that electricity outages were found to have negative effects on company performance. Accessing to electricity is not ensured to everyone in Asia. Access deficits were predominantly concentrated in South and Southwest Asia, the Pacific, and South-East Asia. There were 255 million people without access to electricity in South and Southwest Asia, comprising 13 percent of the population of the subregion (United Nations, 2019).

H4: There was a negative relationship between ease of doing business score and time required to get electricity.

### **Domestic Credit to Private Sector**

Domestic credit to private sector as measured by the percentage of gross domestic product denotes financial resources provided to the private sector by financial establishments, including loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment (W.B.,2020). In Central Asia, access to finance for SMEs was limited, with commercial banks and other lenders seeing SMEs as high-risk borrowers in general. As a result, small businesses in the area also faced high interest rates and collateral requirements that they did not meet (Organisation for Economic Co-Operation and Development, 2013). Linh et al. (2019) indicated that positive relationship among credit access, output production, productive efficiency, and total household income were identified in most papers.

H5: There was positive connection between ease of doing business score and domestic credit to private sector.

### **Start-up Procedures to Register a Business**

Start-up procedures to register a business refers to the whole obligatory to start a business, counting interactions to obtain necessary permits and licenses and to complete all inscriptions, verifications, and notifications to start actions (W.B., 2020). Improved procedures for company registration will help to enhance the overall private sector climate and improving the standards of quality and accountability for other sectors agencies of Government (Liliana, 2005).

H6: There was a negative association between ease of doing business score and start-up procedures to register a business.

## **METHODOLOGY**

To answer the research question aiming at identifying the most influential factors related to ease of doing business score in Asian countries annual data 2019 were collected from World Indicator of the World Bank web site. Data collected are related to ease of doing business score, cost of business start-up procedures, age dependency ratio, strength of legal rights index, time required to get electricity, domestic credit to private sector, and start-up procedures to register a business. The sample is made by following Asian countries: Russia, China, India, Kazakhstan, Saudi Arabia, Iran, Islamic Republic, Mongolia, Indonesia, Pakistan, Turkey, Myanmar, Afghanistan, Yemen Republic, Thailand, Turkmenistan, Uzbekistan, Iraq, Japan, Vietnam, Malaysia, Oman, Philippines, Lao PDR, Kyrgyz Republic, Syrian Arab Republic, Cambodia, Bangladesh, Nepal, Tajikistan, Korea Republic, Jordan, Azerbaijan, United Arab Emirates, Georgia, Sri Lanka, Bhutan, Armenia, Israel, Kuwait, Timor-Leste, Qatar, Lebanon, Cyprus, Brunei Darussalam, Bahrain, Singapore, and Maldives. After checking for missing data, following Saudi Arabia, Iran Islamic Republic, Yemen Republic, Turkmenistan, Iraq, Lao PDR, Syrian Arab Republic, Kuwait, Lebanon, and Bahrain.

To investigate the relationship between ease of doing business and other variables, Pearson correlation. Correlation coefficients indicate strength and direction of the relationship between variables (Schober, Boer & Schwarte, 2018; Patric & Christa, 2018). A t test was used to test the null hypothesis that the correlation coefficient was zero. To find the most influential factors of ease of doing business in Asian countries, multiple regression was used. Assumptions of linear regression was tested to validate the model. All assumptions tested were verified and validated the model. Rainbow test was used to test the adequation of the linear model. The model was Check for Multicollinearity using Variance inflation factor (VIF). The model was also checked for the normality distribution of the residuals using Shapiro-Wilk normality test. The model was checked for independence of residuals or lack of autocorrelated errors using Durbin-Watson Test.

## RESEARCH RESULTS

### Statistical Descriptive Test

The Table 1 presents the results of Pearson correlation analysis. The first column contains the variables, the second column indicates the Pearson correlation coefficients with significance flags. The third column indicates the p-value. The null hypothesis in correlation analysis is that the correlation is zero meaning that there is no correlation between A and B variables. When the p-value is less than 0.05 of significance level, the null hypothesis will be rejected.

**Table 1. Pearson Correlation Analysis**

Variables	Correlation coefficient r	p-Value
EDBS- CBS	-0,437 **	0,002
EDBS – SLRI	0,430 **	0,003
EDBS - TRGE	-0,566 ***	0,001
EDBS-DCPS	0,524 ***	0,001
EDBS-SPRB	-0,388**	0,008
EDBS-ADR	-0,483***	0,001

Significance Codes : \* p < 0,05, \*\* p < 0,01, \*\*\* p < 0,001

The Table 1 indicates the direction and the strength of the correlation between EDB and other variable. As it can be seen on the Table 1, there was a negative moderate correlation between EDB and CBS of – 0,437. The correlation coefficient is statistically different from zero as the null hypothesis of no correlation is rejected at confidence level of 0,002. The hypothesis that H<sub>0</sub> there was a negative relationship between easy of doing business score and cost of business start-up procedures in Asian countries is therefore confirmed.

To increase ease of doing business in Asian countries, policymakers should reduce cost of cost of business start-up procedures. Costs of company start-up constitute barriers to entry into entrepreneurship (Darnihamedani et al., 2018). The results are consistent with the W. B. (2020), as the paid-in minimum capital requirement for business start-ups becomes high, the business entry rate in the economy becomes also low indicating a negative correlation.

There was positive moderate correlation between EDB and SLRI of 0,43. The correlation coefficient is statistically different from zero as the null hypothesis of no correlation is rejected at confidence level of 0,003. The hypothesis that there was positive correlation between ease of doing business score and strength of legal rights index is therefore confirmed.

To increase ease of doing business countries, policymakers should strengthen regarding accessing to credit. Especially the regulation should protect borrowers and lender. This is consistent with the suggestion of Jaoui and Rashid (2015) who indicated that

reinforcing the legal rights of borrowers and lenders under collateral and bankruptcy laws would improve access to finance in Qatar.

There was strongly negative considerable high correlation between EDB and TRGE of -0,566. The correlation coefficient is statistically different from zero as the null hypothesis of no correlation is rejected at confidence level of  $< 0,001$ . The hypothesis that there was a negative relationship between ease of doing business score and time required to get electricity is therefore confirmed. The results are consistent with Geginat and Rita (2018) who indicated that the time of getting electricity had a negative on ease of doing business since the cost is high in low-income countries.

To increase ease of doing business countries, policymakers should reduce time of getting electricity as it has negative impact on ease of doing business. They should also reduce access deficits that was concentrated in South and Southwest Asia, the Pacific, and South-East Asia. They should also reduce electricity outages as they have negative effects on company performance as indicated by Frederick and Josephine (2016).

There was strongly positive considerable high correlation between EDB and DCPS of 0,524. The correlation coefficient is statistically different from zero as the null hypothesis of no correlation is rejected at confidence level of  $< 0,001$ . The hypothesis that there was positive connection between ease of doing business score and domestic credit to private sector is then confirmed.

Policymakers in Asian countries should define clear strategies allowing increasing credit to private sector. Financial institutions should reduce their lending interest rate to increase access to their services of potential investors. Financing small businesses in the area who faced high interest rates and collateral requirements that they did not meet can improve ease of doing business in Asian countries (Organisation for Economic Co-Operation and Development, 2013). This is due the fact that there was a positive relationship among credit access, output production, productive efficiency, and total household income as indicated by Linh et al. (2019).

There was weak negative correlation between EDB and SPRB of  $- 0,388$ . The correlation coefficient is statistically different from zero as the null hypothesis of no correlation is rejected at confidence level of  $0,008$ . The hypothesis that there was a negative association between ease of doing business score and start-up procedures to register a business is then confirmed.

As stated by the W. B. (2020) an entrepreneur spends about 50,0% of income per capita to launch a company in a low-income economy, while an entrepreneur in a high-income economy spends about 4,2% of income per capita. Policymaker should reduce cost of business start-up procedures. This will increase new business creation in Asian countries. As indicated by the World Bank (2020), as the paid-in minimum capital requirement for business start-ups becomes high, the business entry rate in the economy becomes also low indicating a negative correlation. Furthermore, costs of company start-up like notary charges or registration costs constitute one-off costs that increase the barriers to entry



into entrepreneurship. High start-up costs are typically correlated with low entrepreneurship rates as indicated by Darnihamedani et al. (2018).

There was negative moderate correlation between EDB and ADR of  $-0,483$ . The correlation coefficient is statistically different from zero as the null hypothesis of no correlation is rejected at confidence level of  $< .001$ . This allows to confirm the hypothesis that there was a negative correlation between ease of doing business score and age dependency ratio.

As it was indicated in variable definition, age dependency ratio is the ratio of younger than 15 or older than 64 population and the working-age population, population between ages 15-64. However, regarding dependency population, the ratio underestimates the real number of dependent age as all population that have working age is not employed. Unemployment rate is not considered as unemployed population constitutes a charge for working-population. It is reported that unemployment rate was estimated at 8,5 percent for April 2020 for OECD countries (United Nations, 2020). While the global youth unemployment rate was 13,6%, with substantial regional variation, from less than 9% in North America and Sub-Saharan Africa to 30% in North Africa. In most sub-regions, unemployment is more prevalent among young woman (International Labour Organization, 2020).

As one cannot prevent people from aging, to reduce the number of dependent population policymaker should regulate births to reduce dependent-population. Instead of encouraging birth in those countries, population should be encouraged to reduce the number of births per family. Additionally, unemployment rate should be reduced in those countries by creating new jobs especially for young people without forgetting woman.

The Table 2 presents the results of the regression analysis. The correlation analysis shows that all independent variables and cost of business start-up procedures (CBS), age dependency ratio (ADR), strength of legal rights index (SLRI), time required to get electricity (TRGE), domestic credit to private sector (DCPS), and start-up procedures to register a business (SPRB) were related to ease of doing business score (EDBS). However, the correlation analysis did not show the most influential variables among independent that can be threatened first to improve EDBS in Asian countries. Therefore, all independent variables are regressed on dependent variable to identify the most influential.

**Table 2. Regression Analysis**

Coefficients	Estimate	Std. Error	t value	Pr(> t )
Intercept	71,48045	5,21870	13,697	6,22e-15 ***
SLRI	0,82657	0,38596	2,142	0,039939 *
TRGE	-0,12844	0,03407	-3,770	0,000664 ***
DCPS	0,11036	0,02871	3,844	0,000541 ***
SPRB	-1,26935	0,46742	-2,716	0,010574 *

Significance codes: \*  $p < 0,05$ , \*\*  $p < 0,01$ , \*\*\*  $p < 0,001$

Before making any analysis, it important to make sure whether the model meets all regression assumptions. Therefore, Rainbow test was used to test the linearity of the model under the null hypothesis that the model is linear. The result indicated 1,28 with a p-value of 0,328 confirming the linearity of the model.

The model was also checked for multicollinearity using variance inflation factor (VIF) (Fajr, Wihandaru, and Hakim, 2020). Multicollinearity occurs when independent variables in regression are highly correlated. In such case, standard error will be increased which can make some variables statistically insignificant when they should be significant (Daoud, 2017). The results indicated that the VIF is 1,07 for SLRI, 1,1 for TRGE, 1,1 for DCPS, and 1,07 for SPRB. All the variables of the VIF are acceptable as they under 5. There is multicollinearity among the predictors in the regression model if  $VIF \geq 5$  to 10, however if  $VIF > 10$ , the regression coefficients are feebly calculated with the presence of multicollinearity (Shrestha, 2020).

The model was also checked for the normality distribution of the residuals using Shapiro-Wilk normality test. The result of the test  $W=0,95637$ , with a p-value of 0,1548 indicating that the residuals are normally distributed. The model was checked for independence of residuals or lack of autocorrelated errors using Durbin-Watson Test. The result of the test indicates 1,6 with a p-value of 0,21, indicating that residuals are not autocorrelated. conclusion, the assumptions of the fitted model are respected.

The most influential variables were identified by using “backward stepwise” consisting of beginning with a full model with all independent variables and at each step gradually eliminates variables from the regression model to find a reduced model that best explains the data. Under estimate there are intercept (bo) and the beta coefficient estimates associated to each predictor variable. Std.Error indicates the standard error of the coefficient estimates. Standard error estimates the variability/accuracy of the beta coefficients. In the model the standard error of the regression coefficients is small indicating higher confidence in the coefficients. The t value refers to the t-statistic, which is the coefficient estimate divided by the standard error of the estimate. The t-statistic (and its associated p-value) evaluates whether or not there is a statistically significant relationship between a given predictor and the outcome variable, that is whether or not the beta coefficient of the independent variable is highly different from zero. The null hypothesis being tested is that the coefficients are equal to zero (no relationship between EDBS and SLRI for instance). As it can be seen in the Table 2, the null hypothesis is rejected for all predictors as p-value is less than significance level of 0,05. In

other term the variables indicated in the Table 2 have significant impact on easy of doing business in Asian countries. The t statistical test indicates whether all the independent variables involved in the model have a partial effect on the dependent variable (Fajr, Wihandaru, and Hakim, 2020).

**Table 3. Model Performance**

Parameters	Estimates
Residual standard error	7,581
Multiple R-squared	0,6357
Adjusted R-squared	0,5902
F-statistic	13,96; p value 1,074e-06

Residual standard error provides the average difference between the observed outcome values and the predicted values by the model (Kassambara, 2018). In the model residual standard error is 7,581 meaning that the observed EDBS value deviates from the predicted values by approximately 7,851 units in average. Multiple R-Squared indicates the proportion of information/ variation in the data that can be explained by the model. In the present model, multiple R-squared is 0,6357. However multiple R-squared depends on the number of independent variables included in the model. Adjusted R-squared is corrected from this limitation, then is preferred. Adjusted R-squared is therefore 0.5902. Therefore, the model explains 59% of variation in EDBS. This indicates that other variables not included in the model explains EDBS in Asian countries.

The F statistical test indicated to what extent all the independent variables used in the model had a joint influence on the dependent variable. The estimated F value is 13,96 with a significance value less 0,.001. As the probability is less than 0,05, the regression model can be used to predict that ease of doing business in Asian countries.

The model of ease of doing business in Asian countries can be written as following:

$$EDBS = 71,48045 + 0,82657 * SLRI - 0,12844 * TRGE + 0,11036 * DCPS - 1,26935 * SPRB + \epsilon$$

**CONCLUSION**

Based on the fact that the reports of the World Bank on doing business do not indicate the most influential regulation on ease of doing business combined with the fact that the World Bank ignored some other factors, the purpose of this study was to determine the factors related to ease of doing business score in Asian countries. After applying Pearson correlation analysis, we came out with the following results: (i) a negative and statistically significant correlation was found between ease of doing business score and age dependency ratio; (ii) a positive and statistical correlation was identified between ease of doing business score and strength of legal rights index; (iii) a negative and statistically significant correlation was found between ease of doing business score and time required to get electricity; (iv) a positive and statistical correlation was identified between ease of doing business score and domestic credit to private sector; (v) a negative and statistically significant correlation was found between easy of doing

business score and start-up procedures to register a business; and (vi) a negative and statistically significant correlation was found between ease of doing business score and cost of business start-up procedures.

Regarding the most influential factors related to ease of doing business, multiple regression analysis revealed that strength of legal rights index, domestic credit to private sector, start-up procedures to register a business, and time required to get electricity. These variables explained 59% of the variability in ease of doing business.

The limitation of this study is not including some other regulations evaluated in doing business report to evaluate to what extent they are related to easy of doing business. The next limitation is that the variance explained by the model is low. However, the object was not to test all regulation areas as evaluated in doing business. Further researches could be conducted to evaluate other business regulation to evaluate the way they are related to ease of doing business. They should include also other macroeconomic and demographic factors to complete the limitation of the methodology of the World Bank which consists of evaluating regulation that affect 12 business areas only.

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