

# Absorptive Capacity: As a Mediator between Social Capital and Supply Chain Resilience in the Textile Industry of Thailand

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**Abstract-** absorptive capacity (ABC) develops the effectiveness of external resource for the consistent comparative advantage which in turn helps in the enhancement of supply chain resilience (SCR). ABC is considered as a crucial factor of SCR as it permits the success of obtaining, integrating, altering, and manipulating the external information. The existence of ABC is essential for turning the collude relationships into positive ending. The purpose of present study is to re-explore the relationship between social capital (SCK) and SCR by incorporating the mediating role of ABC. For this purpose, the study collected the data from 193 employees of textile industry. Data are collected through questionnaire. Study applies structural equation modeling (SEM) approach for analyzing the empirical results. study used measurement model for testing the reliability and validity of the data. study applied structural model for testing proposed hypotheses. Finally, path analysis is conducted for testing the direct and indirect relationship among variables. Results of the study showed the positive relationship between SCK and SCR. Results further show that this positive relationship is significantly mediated by ABC. Results of the study suggests that the managers of the firm should subsidize the social capital of firm through absorptive capacity. Study further suggests that the managers of the firm can collaborate with other firms, it will enhance the SCK, which in turn effect SCR positively.

**Keywords:** *Social capital, Supply chain resilience, Absorptive capacity, Thailand.*

## 1. Introduction and Backdrop

Nowadays, risk and disturbances are converted into immense intimidations, which adversely affect the long-term success of industries [8]. These risk and disturbances threaten the capability of firm to perform efficiently as they negatively affect the SCM (supply chain management) [34]. Therefore, it is essential for firms, to build supply chain resilience (SCR). SCR is defined as the ability of a firm to regulate and preserve the appropriate functions under the challenging situations, and the capability of a firm to prepare for the unpredicted events. SCR is at the temperament SCM which helps to compete with uncertainties and to retrieve from disturbances [2]. SCR is a component of the universal risk management (RM) approaches. This is true for both pre and post

management risks because SCR prepares the members of supply chain (SC) to deal with uncertainties are depending on the internal resources that are unfeasible for long-term performance. Present study focuses on the social capital (SCK) which is a potential organizer of SCR by the mediating means of absorptive capacity (ABC).

SCK is broadly accepted as a fundamental resource of the firm which is defined as the social relationship of individuals which helps in the attainment of external resources. Literature indicated SCK as a possible preservation against the disturbances. Pre-existing studies shows that the ties of SCK are important for the resilience, as it deliver competency, consistency, new ideas, and resources. However, the existing studies on the relationship between SCK and SCR provides conflicting results on weak indication [28]. For instance, [12] indicated SCK as an organizer of the development of foundational competences for SCR, [1] considered SCR as a disaster in the retrieval and subsistence [22]. Thus, there is a room for re-exploring the SCK-SCR relationship by incorporating ABC as a mediator in the relationship between SCK and SCR.

ABC is an important factor which creates the link between SCK and SCR. ABC is defined as a firm's capability of recognizing the worth of new knowledge. It is also defined as an ability of the firm of utilizing the intangible resources, resulting from inter-organizational relationships [7]. ABC develop the effectiveness of external resource for the consistent comparative advantage which in their turn help in the enhancement of SCR [5]. ABC is considered as a crucial factor of SCR as it permits the success of obtaining, integrating, altering, and manipulating the external information [36]. The existence of ABC is essential for turning the collude relationships into positive ending [15, 31, 23]. Firm and their supply chain (SC) might influence their ABC to obtain and develop the knowledge against sudden disturbances. Firms are increasingly depending on the knowledge of their SC partner for bringing the larger value to customers. For this purpose, firms need ABC which refers to the routine practices of the firm through which firms obtain, adapt and convert the information from the outside boundaries of the firm. ABC is crucial in driving the knowledge for innovative use against the disturbances, which in their turn enhance SCR [29, 17]. Literature revealed that ABC improve the effectiveness of firm to deal with the

problems that are associated with the SCM and thus enhance SCR [25].

Triangulating the discussion from above, it is concluded that SCK is essential for SCR and ABC created the link between SCK and SCR i.e., SCK collects the external information, and ABC recognizes its worth and helps in the efficient use of the information and thus enhances SCR. Therefore, the purpose of present study is to examine the mediating role of ABC in the relationship between SCK and SCR. For this purpose, study utilizes the data of textile industries of Thailand.

Remaining study has following structure: below is the review of debate on the past studies and construction of hypothesis. Next part explains the data and methodology, after this empirical result of the study are explained, and at the end conclusions are made with the discussion and implications of the study.

Below are the prior studies on the relationship between SCK and SCR with ABC as mediator. [10] empirically examined the relationship between firm's ABC and SCK and revealed the positive relationship between firm's ABC and SCK. Result of the study reveals that the employees of the firms are in the continuous interaction with their social network i.e., suppliers, retailers etc. which help the suppliers in adapting the new techniques and thus increases firm's ABC. [14] examined the influence of SCK on the organizational innovation, and ABC. For this purpose, study collected the data from the 119 respondents of the leather product exporting firms. Study applied SEM for examining the empirical results. results if the study revealed the positive influence of SCK on firm's ABC and innovation. [35] done a valuable work. They investigated the influence of SCK on firm's ABC. The study used three dimensions of SCK i.e., structural SCK, rational SCK and cognitive SCK; and two dimensions of ABC i.e., transformative ABC and exploitative ABC. Findings of the study showed the positive relationship between rational SCK, cognitive SCK and transformative ABC in beginning period while study revealed the positive relationship between structural SCK, rational SCK, transformative ABC and exploitative ABC in the execution period. [32] examined the impact of SCK and internalization on the ABC of firm. For this purpose, study utilized the data of IT firms and found the positive impact of SCK and internalization on firm's ABC. [9]; [17] and [20] investigated the effects of firm's ABC on SCR. For this purpose, the study collected the data from 263 respondents of Turkish firms. Study applied SEM for empirically examining the results. results of the study showed the direct influence of firm's ABC on SCR. [13]; [11]; [26] conducted their research on the Lathe state of Finland and investigated the relationship between SCK, and firm's ABC. For this purpose, the study collected the data from 242 respondents by using a self-designed questionnaire. Study applied OLS regression model and revealed the positive relationship between SCK and firm's ABC. [19] examined the relationship between firm's ABC and SCR of firm by utilizing the data of manufacturing firms. Results of the study showed the positive association between ABC and SCR of firm. [24] investigated the influence of cognitive SCK, and firm's transformative ABC on the resilience of supply chain. For this purpose, the study utilized the data of Turkish firms. Study applied

SEM and revealed the positive relationship among variables. [30] investigated the mediating role of SCR on the relationship between SCK and firm performance. Study applied SEM and revealed that SCR significantly mediated the relationship between firm's ABC and the firm performance. Results of the study suggested that firms should arrange programs for the enhancement of firm's absorptive capacity because firm's ABC increases the competitiveness, and revenues of firm which in their turn enhance the SCR which having significant ad positive effects on the performance of firm. [6] examined the relationship between firm's ABC, supply chain management and firm's performance. For this purpose, study collected the data from 213 respondents through an online survey. Study applied SEM and showed the positive association between firm's ABC and supply chain management. Results of the study did not reveal any significant relationship between supply chain management, and firm's performance. [21] investigated the effects of SCK on firm's knowledge attainment. Study indicated that the social network of people helps them in the achievement of knowledge and promotes recurrent learning. Study revealed the positive relationship between SCK and the knowledge attainment of firm. Study suggested that the higher level of SCK enhances the firm's capability of knowledge engrossment. [16] also showed the positive impact of SCK in increasing firm's knowledge engrossment. [3] investigated the impact of SCK in the development of firm's ability to in the assessment of reliable information. for this purpose, study used two different dimensions of SCK i.e., cognitive and rational SCK. Study applied OLS regression and found the positive and significant relationship between rational SCK and the ability of firm in the assessment of reliable information. results of the study did not find any significant association between cognitive SCK and firm's ability to in the assessment of reliable information. [4] examined the influence of firm's supply chain capital on its innovation capability. The study, therefore utilized the data of IT firms. Study applied SEC for investigating the empirical results. results of the study showed the positive association between firm's supply chain capital and firm's innovation capability. [33] showed the positive relationship between social capital and supply chain management by utilizing the data of textile industries. [37] collected the data from 123 employees of fashion industry for examining the influence of SCK on the ABC of industry. Study further examined the influence of industry's ABC on its performance. For this purpose, study applies multiple regression models and showed that ABC of fashion industry is significantly influenced by SCK. Study also showed the direct impact of industry's ABC on its performance. [18] investigated the moderation role of SCK on the relationship between ABC and firm's performance. For this purpose, the study utilized the data of 1554 firms of manufacturing industry. Study applied SEM and found the positive relationship between ABC and the performance of firm. Results of the study showed that SCK significate moderated the SCK-firm's performance relationship. Synthesizing the discussion of above literature, study proposed following hypotheses.

H<sub>1</sub>: "There is positive relationship between social capital and supply chain resilience"

H<sub>2</sub>: “There is positive relationship between social capital and firm’s absorptive capacity”

H<sub>3</sub>: “There is positive relationship between firm’s absorptive capacity and supply chain resilience”

H<sub>4</sub>: “Absorptive capacity of firm mediated the relationship between social capital and supply chain resilience”

The Figure 1 shows the conceptual relationship between SCR and SCK with the mediating role of ABC.

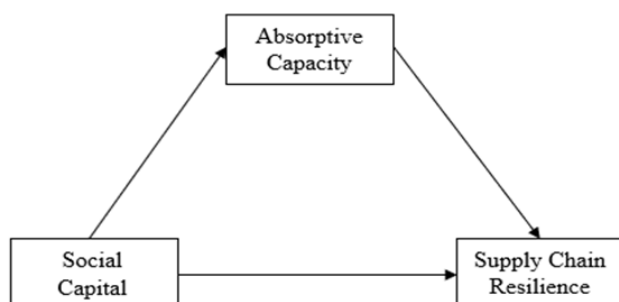


Figure 1. Conceptual Framework

## 2. Methods

This section shows the data collection techniques, sampling, description of the variables and econometrics models of the study. Present study collects the data from the 193 employees of textile industry of Thailand, having experience of more than 5 years. Study collected the data through questionnaires. Questionnaire is based on 5-type Likert scale, starts from 5=completely disagree to 1=completely agree. Questionnaire are divided into two sections. Section one collects the information about the demographics of the respondents i.e., information regarding gender, age, qualification, experience, and nature of job. Section two contains seven items of SCK, three items of ABC, and four items of SCR. All the respondents voluntarily filled the questionnaire, as nobody was forced to respond.

In the present study, SCK is used as independent variable (IV), SCR works as dependent variable (DV) and ABC operationalizes as mediating variable (MV) of the study. *Social capital (SCK)*: study uses SCK as an IV of the study. SCK is defined as the social relationship of individuals which helps in the attainment of external resources. *Absorptive capacity (ABC)*: ABC is used as a MV of the study. It is defined as a firm’s capability of recognizing the worth of new information. It is also defined as an ability of the firm of utilizing the intangible resources. *Supply Chain resilience (SCR)*: SCR is used as a DV of the study. SCR is defined as the ability of a firm to prepare for the unpredicted events.

Study examines the data by using the software of smart PLS. Study calculates the descriptive statistics first. Study used SEMA (structural equation modeling approach) for analyzing the empirical results as it is linked with the multiple advantages, the most important of which is the estimation of multiple regressions at one click. SEM comprises on two models i.e., measurement model, which tests the reliability and validity of different items and constructs; and structural model, which tests the proposed hypothesis of the study. Study conducted path analysis for obtaining the direct and indirect coefficient of variables.

Present study uses following econometric models for investigating the relationship between SCK and SCR with mediating impact of ABC:

$$SCR = \beta_0 + \beta_1 (SCK) + \mu \text{ --- (1)}$$

$$ABC = \beta_0 + \beta_1 (SCK) + \mu \text{ --- (2)}$$

$$SCR = \beta_0 + \beta_1 (ABC) + \mu \text{ --- (3)}$$

$$SCR = \beta_0 + \beta_1 (SCK) + \beta_2 (ABC) + \mu \text{ --- (4)}$$

Where: “SCR is supply chain resilience, SCK is social capital, ABC is absorptive capacity,  $\beta_0$  is intercept,  $\beta_1$  and  $\beta_2$  are beta coefficients, and  $\mu$  is normally distributed error term”.

## 3. Data Analysis

This section provides descriptive measures, measurement model, CFA (confirmatory factor analysis), discriminate validity, structural model, collinearity and path analysis for mediating impact of ABC on the association between SCK and SCR. Table 1 demonstrates the results of descriptive statistics of the study. Study calculates mean, standard deviation (SD), minimum (min.) and maximum (max.) values of each item. Result shows that the survey is accomplished with 5-type Likert scale, consist of 21 items. The response of 10 items varies from one to five, response of 4 item varies from two to five, response of 6 items varies from one to four. Mean values shows that the average response of participants varies from 2.234 to 4.2845. Value of SD shows the normal distribution of data which ranges from 0.282 to 1.936. Figure 2 shows the measurement model of the study. Measurement model is used to test the validity and reliability of the data. Model contains 3 latent variables i.e., ABC (MV), SCK (IV) and SCR (DV). The model tests the convergent validity of each construct and item, reliability and validity of each construct by using CFA.

Table 1. Descriptive Statistics

Items	Mean	Min	Max	Standard Deviation
INL1	2.345	1	4	0.435
INL2	3.657	1	5	0.747
INL3	3.224	1	5	1.384
INL4	3.595	1	5	0.026
INL5	3.235	1	4	1.936
INL6	3.863	1	5	0.373
PSS1	3.679	2	5	0.224
PSS2	3.742	1	4	0.436
PSS3	3.458	1	5	1.732
PSS4	3.123	2	5	0.358
PSS5	3.356	1	4	1.127
PSS6	3.842	1	5	1.459
PSS7	4.285	1	5	0.284
PSS8	3.235	1	5	1.474
IWB1	3.236	1	4	1.937
IWB2	2.768	2	5	0.282
IWB3	2.842	1	5	0.993
IWB4	2.098	1	4	0.735
IWB5	3.029	2	5	1.374
IWB6	2.743	1	5	0.457
IWB7	2.234	1	4	0.568

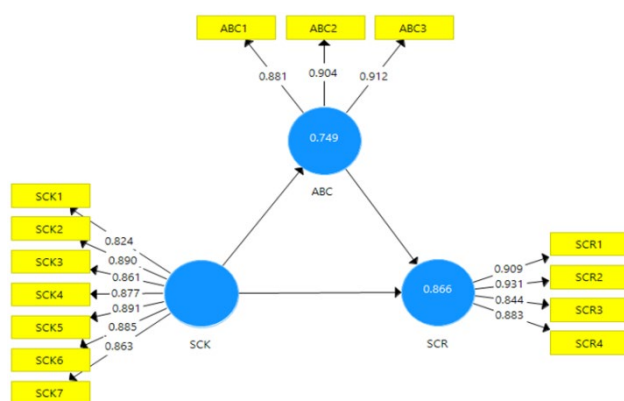


Figure 2. Measurement Model

Table 2 shows the results of confirmatory factor analysis (CFA), comprising of the loading values, value of Cronbach alpha, CR and AVE. The convergent validity of each item is test with the help of loading values. Loading value of each item must be greater than 0.4. Results of the table depict that the loading value of each item is greater than 0.4. i.e., the loading value of SCK1, SCK2, SCK3, SCK4, SCK5, SCK6, SCK7, ABC1, ABC2, ABC3, SCR1, SCR2, SCR3, and SCR4 is 0.824, 0.890, 0.861, 0.877, 0.891, 0.885, 0.865, 0.881, 0.904, 0.912, 0.909, 0.931, 0.844 and 0.883 respectively. Thus, it is concluded that convergent validity is present in each item of the construct. The convergent validity of each construct is test with the help of AVE. coefficient of AVE should be greater than 0.5. Results of the table shows that the coefficient of AVE of all construct is greater than 0.5 i.e., the value of AVE for SCK, ABC and SCR is 0.927, 0.956 and 0.940 respectively. Hence it is verified that convergent validity is present in each construct. Study uses the value of Cronbach's alpha for testing the reliability of each construct. As shown in table 2, the value of CBa for SCK, ABC and SCR is 0.881, 0.946 and 0.914 respectively. All the values meet the criteria of reliability and internal consistency as all the values are greater than 0.5. thus it is concluded that the data of each construct is reliable and internally consistent. Results further show that the data of SCK is highly reliable as the value of CBa is greater than 0.8, and the data of ABC and SCR possesses excellent reliability as the value of CBa exceeds from 0.9. CR tests the construct validity of the data. Table shows that the score of CR for each construct is greater than 0.5 i.e., the score of SCK=0.884, ABC=0.947 and SCR=0.916. Thus, construct validity is present in the data.

Table 2. Confirmatory Factor Analysis (CFA)

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
SCK	SCK 1	0.824	0.881	0.884	0.927
	SCK 2	0.890			
	SCK 3	0.861			

ABC	ABC 1	0.881	0.946	0.947	0.956	
	ABC 2	0.904				
	ABC 3	0.912				
	SCR	SCR 1	0.909	0.914	0.916	0.940
		SCR 2	0.931			
		SCR 3	0.844			
		SCR 4	0.883			

Table 3 demonstrates the results of discriminate validity which is used to test the distinctiveness of a constructs. Study uses the criteria of Fornier-Larker for testing the discriminate validity of the data, which measures the discriminate validity with the help of correlation matrix. According to the criteria, the diagonal values (shown in bold) of correlation table must be greater than the remaining values. Table shows that the diagonal values of the table i.e., 0.934, 0.935, 0.942 are greater than the remaining values i.e., 0.820, 0.732, and 0.745. Thus, the condition of discriminate validity is satisfied.

Table 3. Discriminate Validity-Fornier Larker criteria

	SCK	ABC	SCR
SCK	<b>0.934</b>		
ABC	0.820	<b>0.935</b>	
SCR	0.732	0.745	<b>0.942</b>

After testing the reliability and validity of the data, study uses structural model for testing the proposed hypotheses of the study. Structural model deals with the collinearity issues; tests the significance and provide the direct and indirect coefficient of variables with the help of path analysis. Figure 3 shows the structural model of the study. Testing the issue of collinearity is the first step of structural model because if the variables are correlated then path analysis will provide biased results. The issue of collinearity is test with the help of correlation matrix. Table 3 shows the results of correlation matrix. According to the rule, the value of correlation between two variables should less than 0.5, otherwise there will be the issue of multicollinearity in the data. Results of the table shows that the value of correlation among all the variables is less than 0.5. The highest value of correlation is 0.289 which is in between ABC and SCK, while the lowest value of correlation is 0.128, which is in between SCR and SCK

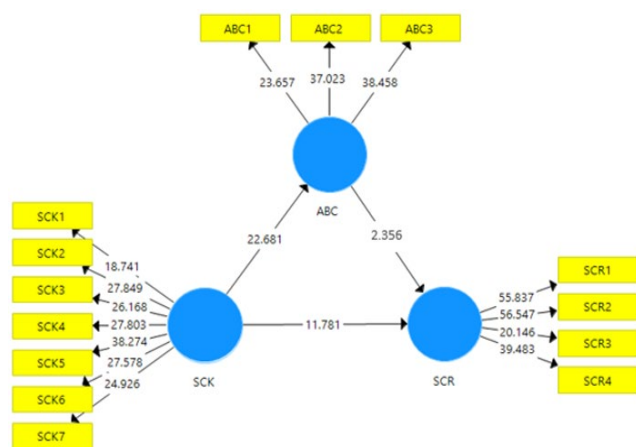


Figure 3. Structural Model

Table 3. Collinearity Matrix

	SCK	ABC	SCR
SCK	1		
ABC	0.289	1	
SCR	0.128	0.217	1

Study conduct path analysis with the help of structural model for testing the proposed hypothesis of the study. The findings of Model 1 show the positive impact of SCK on SCR. The coefficient of SCK (0.645) is significant at the level of 1% as p value is less than 0.01 (0.000<0.01). The coefficient shows that 1-unit increase in SCK increases 0.645 units of SCK. Thus, Result supports the 1<sup>st</sup> hypothesis of the study. Findings of Model 2 show the positive relationship between SCK and ABC. The coefficient of SCK (0.457) is significant at the level of 1% as the p value is less than 0.1 (0.000<0.01). Coefficient depicts that 1-unit increase in SCK results an increase of 0.457 units in ABC. Results also supports the 2<sup>nd</sup> hypothesis of the study. The findings of model 3 reveals the positive effects of ABC on SCR. The coefficient of ABC (0.326) is significant at the level of 5% as p value is greater than 0.01 and less than 0.05 (0.01<0.035<0.05). Coefficient shows that 1-unit increase in ABC tends to increase SCR by 0.326 units. Results support the 3<sup>rd</sup> hypothesis of the study. Findings of model 4 shows the indirect effects of SCK on SCR. Comparing with model 1, result shows that the entrance of mediator in the model reduces the significance and coefficient of SCK from 0.645 to 0.534; and 0.000 to 0.033 respectively. The coefficient of SCK (0.534) reveals that ABC significantly mediates the relationship between SCK and SCR. For instance, 1-unit increase of SCK increases 0.534 units of SCR indirectly. Thus, 4<sup>th</sup> hypothesis is also supported.

Table 4. Path Analysis

Direct Effects					
H/M	Path	Beta	T-Statistics	P-Value	Decision
1	SCK→SCR	0.645***	11.781	0.000	Supported
2	SCK→ABC	0.457***	22.681	0.000	Supported
3	ABC→SCR	0.326	2.356	0.035	Supported

Indirect Effects					
4	SCK→ABC→SCR	0.534***	8.236	0.033	Supported

Note: “\*\*\*, \*\* is the significance at the level of 1% and 5% respectively, H and M denote hypothesis and model respectively”

### 4. Concluding Remarks

SCK is broadly accepted as a fundamental resource of the firm which is defined as the social relationship of individuals which helps in the attainment of external resources. However, the existing studies on the relationship between SCK and SCR provides conflicting results on weak indication. Therefore, present study re-explores the SCK-SCR relationship by incorporating ABC as a mediator of the relationship between SCK and SCR. For this purpose, the study utilized the data of 193 employees of textile industry of Thailand, having experience of more than 5 years. Data are collected through Questionnaire. Study applied SEMA (structural equational modeling approach) for analyzing the empirical results as it is linked with the multiple advantages, the most important of which is the estimation of multiple regressions at one click. SEMA comprises of two models i.e., measurement model, which tests the reliability and validity of different items and constructs; and structural model, which tests the proposed hypotheses of the study. Study conducted path analysis for obtaining the direct and indirect coefficient of variables.

Results of the study showed the positive relationship between SCK and SCR. This is so because SCK provides the external information to the employees which is beneficial in meeting the different challenges. Results of the study are consistent with [14, 13, 27]. Results further reveals that ABC significantly mediates the relationship between SCK and SCR. This is so because ABC helps the employees in recognizing the worth of external information. Results of the study concluded that ABC creates the link between SCK and SCR, and clarifies that how SCR can be used for the progress of SCR because SCK is a dynamic operand resource.

Present study has few implications: First, the study suggests that the managers of the firm should subsidize the social capital of firm through absorptive capacity. Most of the firms are having valuable resources. If these resources are not recruited against the risk, threats and difficulties then these resources can stay latent. Therefore, firm should advance their ABS to subsidize their SCK for the enhancement of SCR. Second, the study suggested that manager should make financial and behavioral investments in the ABC of firm. Third, the study suggests that the managers of the firm can collaborate with other firms, it will enhance the SCK which in their turn effect SCR positively. Finally, the managers of the firm should arrange different meetings or programs for their employees so that they could be able to know the importance of SCK.

Same as many studies, this study also has some limitations: First, the study proposed that the resources which are acquired through the inter-organizational relationships can be an essential source of SCR but the

study do not investigate that how these resources can be used for supporting the firm against disturbances. Moreover, there might be a difference between the observation and the genuineness of SCK, and the influence of these differences on SCR is not investigated yet. Therefore, future researchers can examine the influence of this difference on SCR. Moreover, future researchers can use different dimensions of SCK on the SCR. Second, most of the existing literature focused on the antecedents/positive factors of SCR. Future researchers can work on the negative factors of SCR. Third, this study is conducted on the textile industry of Thailand. Future research can be conducted on different industries. Future researches can also conduct cross industry comparisons for obtaining more clear results. Fourth, from the methodological perspective, future researchers can conduct qualitative study on SCR as it provides more detailed understanding regarding the utilization of SCK. Finally, future researchers can examine the influence of SCK and ABC on the organizational performance. They can also examine that how the disruptions can affect the performance of the firm.

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