

Effects of Financial Risks on Profitability of Sugar Firms in Kenya

Dr Gongera Enock George*1 Barrak Otieno Ouma*2 Jane Nasimiyu Were*3

1. Dean Post Graduate Studies, Mount Kenya University, P.O BOX342-00100 Thika, Main Campus
Mobile- +254726115950 Email- gongerageprge@gmail.com
2. School of Business, Jomo Kenyatta University, P.O BOX 62000, Nairobi, Kenya Mobile- +254725404324
3. Chandaria School of Business, United States International University, P.O. BOX 14634-00800, Nairobi, Kenya
Mobile +254 720761864 Email-janewere33@yahoo.com

ABSTRACT

The sugar industry plays a significant role in socio-economic development of the Kenyan economy and by the nature of its operations, faces a myriad of challenges as a result of financial risk exposure. With the liberalization of trade and free movement of financial assets, risk management through the use of derivatives has become a necessity and despite enormous benefits that can be derived from using derivatives to manage financial risks, Kenyan sugar firms have not embraced their use to full potential and there is lack of a thriving derivative market locally due to limited number of derivative instrument and lack of knowledge of existence of the instrument. This research examined the effects of financial risks on profitability of sugar firms in Kenya. Financial risks examined included credit risks, interest rate risks and liquidity risks. Census research design was used where all the 48 finance officers of the 8 sugar firms registered by the Kenya sugar board were studied. Questionnaires were used to solicit data. Descriptive data was analyzed using frequency counts, percentages, and mean while inferential analysis was done using Pearson correlation analysis. The study established that, a significant, negative correlation existed between firms level of liquidity risk and firms profitability, $r = -0.777$, $P < 0.01$. A significant, strong, negative correlation between firms risk rating and profitability $r = -0.689$, $P < 0.01$ and a strong, positive correlation also existed between firms efficiency of risk management and profitability $r = 0.714$, $P < 0.01$. This indicates that as the firm manages its risks more efficiently, the chances of loss are minimized hence higher profitability is realized. Financial risk management practices are therefore useful to sugar industry that operates in dynamic and competitive environments like Kenya. Liquidity risks have an effect on the profitability of sugar firms in Kenya and therefore the firms should ensure that they are financially stable so that there is smooth running of all operations. Since sugar firms extend credit to farmers in the form of seed cane, fertilizers, and other farm inputs, the firms should ensure constant monitoring of the credit through stringent internal credit control mechanisms. Firms should also try to reduce the sources of funding from loans by diversifying their activities like production of ethanol and being listed in the Nairobi securities exchange to supplement their capital to minimize the effects of fluctuations in interest rates on their profitability.

Key Words: Kenya Sugar firms, Financial Risks, Profitability

1. Background

Business in the 21st century is facing new risks and impacts that threaten the very survival of every organization including the Sugar industry. Sugar industry operates in an environment of economic uncertainty and the industry players are doing everything possible to reduce financial risk and improve on its profitability. While this is understandable, a broader view may be necessary to reduce the risk of failure in both the short and long-term. There has been some experimentation with hedging financial risks, such as foreign currency exchange rates, interest rates and fuel prices. According to Fernando (2006), the credit risk exposure is insignificant due to counterparties of financial instruments being selected based on their credit rating and policies in place restricting any one counterparty to be exposed to a large amount. According to Bartram (2006), risk management has received increased attention in both corporate practice and literature especially the management of financial risks. It is on this basis that all organizations operate in highly competitive markets and cannot grow or compete without taking risks. Therefore trying to achieve the right balance between risk and reward is the optimum goal of organizations including the Sugar industry (Sheedy, 2006). Despite the fact that sugar firms are exposed to a wide array of risks, these risks stand out and are often interrelated. Interest rate is often the trigger for other forms of risk (Obiyatullah, 2004). An increase in interest rate would trigger credit risk as it leads to liquidity problems. Some firms use derivative instruments to

manage their risk exposure and thereby reduce the volatility of a firm's cash flows and firm's value, while other firms use derivatives to speculate and to take advantage of arbitrage opportunities. Derivative instruments are used for risk management by non-financial firms around the world, primarily to manage interest rate risk and foreign exchange risk. Commodity price derivatives are also used, but are specific to certain industries. The ultimate objective of a firm which employs derivatives as a part of its risk management strategy is to maximize the value of the firm.

In Kenya, exchange rates were deregulated and were allowed to be determined by markets in 1994. The fixed exchange system was replaced by a floating rates system in which the price of currencies is determined by supply and demand for the particular money. According to (Ndung'u, 2001), the floating exchange rate system adopted in the 1990's was expected to have several advantages to Kenya which includes allowing more continuous adjustments of exchange rates to shifts in the demand for and supply of foreign exchange. The economic liberalization of the early nineties facilitated the introduction of derivatives based on interest rates and foreign exchange. Currently, forwards, swaps and options are available in Kenya and the use of foreign currency derivatives is permitted for hedging purposes.

The development of the sugar industry in Kenya started with private investments at Miwani in 1922, followed by Ramisi Sugar Company in 1927 (KSB, 2010). After independence, six additional companies were established namely: Muhoroni (1966), Chemelil (1968), Mumias (1973), Nzoia (1978), South Nyanza (1979), West Kenya (1981), Soin (2006) and Kibos (2007). The establishment of the Parastatals was driven by a national desire to accelerate social economic development, address regional economic imbalances, increase Kenyan citizen's participation in the economy, promote indigenous entrepreneurship and promote foreign investments through joint ventures.

The sugar industry plays a significant role in socio-economic development of the Kenyan economy. The sector directly supports 200,000 small-scale farmers who supply over 85 percent of the cane milled by the sugar companies, an estimated six million Kenyans derive their livelihood directly or indirectly from the sugar industry and the industry is estimated to employ some 12,500 Kenyans in sugar plantations and sugar factories (KSB, 2010). In addition, the industry saves Kenya in excess of US\$ 250 million in foreign exchange annually. Other benefits accruing from the industry are social amenities such as schools, roads and bridges, health facilities provided to the communities by the sugar companies and out grower institutions. The industry is facing pressures that include; globalization and the trend towards mergers and alliances which requires financial stability and effective management of the risks.

2. Statement of the Problem

Sugar industry, by the nature of its operations, faces a myriad of challenges as a result of the financial risk exposure. Interest rates volatility, foreign exchange fluctuations, credit risk and unstable commodity (fuel) prices have led to unpredictability of profits and cash flows in these firms. As a consequence of the risk exposure from the above challenges, the management of this risk through sound practices is of vital importance to the sugar industry. As was noted by (Kothari, 2009), risk management has received increasing attention in both corporate practice and literature due to the fluctuation in foreign currency denominated transactions. This is particularly true to the management of financial risks. With the liberalization of trade and relatively free movement of financial assets, risk management through the use of derivatives has become a necessity in Kenya, just like in other developed countries. As sugar firms business in Kenya becomes more global in its nature, evolution of a broad based, active and liquid foreign exchange derivative market is required to provide them with a spectrum of hedging products for effectively managing their foreign exchange exposures (Ndung'u, 2001) and this applies to all other financial risk exposures.

Profitability is the ultimate test of the effectiveness of risk management. It is the bottom-line of any institutions and thus superior risk management practices are really good for the bottom line. Therefore knowing the effects that the financial risks have on the profitability of the firm is an important agenda for all firms as it would enable the firm to manage those risks effectively. Moreover, a strong and profitable sugar industry promotes broader financial stability and increases the economy's resilience to adverse macroeconomic shocks (Stewart, 2007). The trade off between risk and return is well acknowledged - the higher return comes with higher risk. Therefore in order to increase the return, firms should know which risk factors have greater effect on profitability.

3. LITERATURE REVIEW

3.1 Introduction

A risk management framework entails the scope of risk to be managed, the process and procedures to manage risk and the roles and responsibilities of individuals involved in risk management. An effective framework should be comprehensive enough to capture all financial risks a sugar firm is faced with and have flexibility to accommodate any change in business activities. Theories of optimal hedging demonstrate that capital market imperfections create incentives for firms to use derivative instruments. While these imperfections might be necessary for optimal use of derivatives, they are not sufficient conditions. Elliot, Huffman and Makar (2003), argue that, given incentives, a firm's ultimate decision to use derivatives also depends on the cost of managing foreign exchange risk. The results of some empirical studies however show that it will be possible to make speculative gains in certain markets over certain periods of time. Thus unless financial risks are seriously distorted by the government restrictions on intervention, it appears to be very difficult indeed to generate profits on the basis of forecasting the financial risk.

A valuable and effective risk management framework should include clearly defined risk management policies and procedures covering identification, acceptance, measurement, monitoring reporting and control as well as clearly constituted organizational structure defining clearly roles and responsibilities of individuals involved in risk management (Jorion, 2001). Sugar industry also needs to institute a committee that supervises financial risk management practices to ensure effective use of the derivatives. The individuals responsible for review function should be independent from risk taking units and report directly to senior management to ensure compliance and control.

3.2 Empirical Literature review

Several studies have been conducted to validate the relationship between the theories based on capital market imperfections and the firm's decision to hedge. Limited empirical evidence exists to support this claim. The results of some of these empirical studies are provided below. Based on 169 responses received to a questionnaire sent to CEOs of Fortune 500-S&P 400 companies, (Nance, Smith, & Smithson, 1993) conclude no significant relationship between risks and profitability. (Mian, 1996) paper examines this relationship based on 3022 firms in the USA. He concludes that there is limited empirical evidence consistent with the theories mentioned above. His findings indicate that there is no empirical evidence based on his data to support the financial distress cost model. However, there seems to be weak evidence to support the tax incentives. (Howton & Perfect, 1998) in their sample of Fortune 500/S&P 500 firms and sample of random firms that don't belong to the Fortune 500 have findings that support and oppose the existing theories. While the sample of Fortune 500 firms produced results consistent with the theories mentioned above, the sample of the smaller firms had no relationship. In Kenya, Risk management has been cited in several studies as a critical factor contributing to the overall success of the organizations to meet their desired goals and objectives.

According to (Yusuf, 2005), risk management in Kenya is broadly centered on two key risks i.e. credit risk and operational risk. Geczy, Menton, & Schrand (1997) examine the use of currency derivatives to test theories of hedging behavior. The sample for their study consisted of 372 of the fortune 500 non-financial entities as of 1990. These firms have foreign currency exposure by way of foreign operations, foreign currency denominated debt and/or a high proportion of their competitors in the respective industry are foreign. They determined that the firms most likely to use currency derivatives are firms with greater growth opportunities and tighter financial constraints.

Geczy, Menton, & Schrand (1997) also examined currency derivatives use for naturally hedged firms. These are firms with both foreign operations and foreign currency denominated debt. They find that the use of currency derivatives for naturally hedged firms is not determined by research and development and short term liquidity. However the results of the sample examined shows that R&D and short term liquidity are strong determinants of the use of currency derivatives by firms with foreign operations but with no foreign currency denominated debt. (Sheedy, 2006) conducted a survey to assess if and how risk management practices vary between Hong Kong and Singapore and how risk management practices in both these countries compare to the US. The intensity in which these firms use derivatives is much higher than in the US. The highest use of derivatives is to manage foreign exchange risk and (Sheedy, 2006), notes that this could be due to the significance of imports and exports and the extensive use of offshore borrowing. Interest rate derivatives are used to a lesser extent in these two countries compared to the US.

3.3 Critical Review of Theoretical Literature

Smith & Stulz (1985) examined managerial attitudes towards risk taking and hedging, a possible mismatch of interest between shareholders, management and debt holders due to asymmetries in earning distribution, which can result in the firm taking too much risk or not engaging in positive net value projects. The study did not bring out

clearly how the managers should deal with risk to enhance the earnings of a firm and how the agency problem may be minimized to increase profitability of the firms. Nance, Smith, & Smithson, (1993) in their analysis of risks argued that the higher the probability of a firm experiencing financial distress, the greater the reduction in the cost of financial distress, they only looked at financial distress and its cost leaving out how financial distress may affect the performance of the firms and the researcher examined all the variables in the study by looking at how financial risks affects profitability of firms.

Sheedy, 2006 conducted a survey to assess if and how risk management practices vary between Hong Kong and Singapore and how risk management practices in both these countries compare to the US, he found out that derivatives are used to manage foreign exchange risks and therefore the issue of financial risks did not feature in his study. Franklin & Antony (1996) only looked at the relationship between risk and the environment and therefore they only concentrated on risk in general and did not identify the specific risks that may affect the environment. Environment is wide, it may be financial, marketing and therefore there was no specific variable that was identified in their study. Hence the researcher identified the financial risks and tried to determine how these risks affect the overall profitability of sugar firms.

3.4 Summary

This section has reviewed the literature on the use of derivative instruments by non-financial firms, by focusing on the extent and the effectiveness of these instruments for financial risk management and firm value maximization / profitability. Literature cited concludes that most non-financial firms use derivative instruments to hedge against volatile cash flows and firm value. This risk management use of the derivative instruments is contrasted by speculative derivative transactions, which are disallowed by most non financial firms. Numerous theories have been presented as to why firms use derivatives, but the results of the empirical studies done so far to validate these theories are mixed. With the ever increasing regulatory requirements emphasizing the need to disclose the nature of information to be made available public on derivatives usage, there has been and will continue to be an improvement in the data publicly available in the recent years and in the years to come.

3.5 Research gaps

Many studies have been carried out on various aspects of risk management practices in Kenya and other countries. There exists a wealth of literature on risks but only a few studies have been carried out in Kenya especially on the use of derivatives in the management of risks. Earlier studies on profitability conducted use cross sectional data of the firms to compare financial ratios and do not incorporate specific risks in their models. In studying the determinants of profitability, most of these studies examined the internal and external factors of the firms. These studies conclude that internal factors explain a large proportion of firm's profitability; however, the results are not constant across countries or different periods within the same country. As there are differences in the findings in the sugar industry among the different countries, it is still worthwhile to observe if the previous results are applicable to Kenya.

4. RESEARCH METHODOLOGY

4.1 Research Design

Dooley (2007) defines a research design as the scheme, outline or plan that is used to generate answers to the research problems. The study employed a census survey design approach in research since it was a research for the all 8 Sugar firms registered by the Kenya sugar board. The population for the study was 48 finance officers of the 8 Sugar Companies which are registered and regulated by the Kenya Sugar Board. The researcher conducted a census survey of all the Sugar firms in Kenya in an attempt to establish the effects of financial risks on profitability.

Data Processing and Analysis was conducted by data cleaning, which involved identification of incomplete or inaccurate responses, with an objective of improving the quality of the responses. The researcher adopted both quantitative and qualitative approaches to data analysis. The data obtained from respondents was coded and analyzed with the aid of Statistical Package for Social Sciences (SPSS) v.20. The data collected was presented in tables and analyzed using descriptive statistics and inferential statistical tools (Pearson correlation analysis). The effects of financial risks on profitability were measured by the corresponding change in profitability as a result of the occurrence of the specific risk in a firm.

5. FINDINGS AND DISCUSSION

The research objective was to determine the effects of liquidity, interest rate and credit risks on profitability of sugar companies in Kenya. This chapter gives a detailed analysis of data collected using the questionnaires and presents the findings with regard to the objective of the study. Further, it gives the implications of the findings and discussions of the same. The findings are presented in tables.

5.1 Correlation between liquidity Risk and firm's profitability

To establish whether liquidity risk affected organization profitability, Pearson correlation was done between the level of organizational liquidity risk rating and rating on firms' productivity, as shown on table 1

Table 1: Pearson Correlation between firms' liquidity risk level and profitability

Liquidity Risk	Profitability of sugar firm	
	Pearson Correlation	-0.777**
Sig. (2-tailed)	0.004	
N	36	

**Correlation is significant at 0.01 confidence level (2-tailed)

The study revealed a negative, significant correlation between firms level of liquidity risk and firms profitability, $r = -0.777$, $P < 0.01$. This indicates that firms which were rated high on liquidity were rated low on profitability. Therefore the level of liquidity affects firms' profitability. (Nance, Smith, & Smithson, 1993) in their research found out that the higher the probability of a firm experiencing financial distress, the greater the reduction in the overall performance of the firm and this concurs with the findings.

5.2 Correlation between Interest rate risk and firms profitability

To establish whether interest rate risks affected sugar firms' profitability, Pearson correlation coefficient was analyzed between rating on level of interest rate risk, and the firms' profitability as presented on table 4.21

Table 2: Pearson Correlation between Interest rate risk and firms profitability

Interest rate risk		Profitability of sugar firms	Interest rate risk
		Pearson Correlation	-0.521*
	Sig. (2-tailed)	0.038	
	N	36	36

*Correlation is significant at 0.05 confidence level (2-tailed)

There is a significant, negative correlation between firms interest rate risk level and profitability, $r = -0.521$, $p < 0.005$. This implies that as the level of interest risk of a firm increases, profitability decreases. Interest rate is the trigger for the other forms of financial risks (Obiyatullah, 2004) therefore he found out that interest rate do have a negative effect on the performance of banks and from the results obtained interest rate risk have got a negative effect on profitability of sugar firms.

5.3 Correlation between credit risk rating and Firms profitability

The relationship between credit risk rating and firms profitability was a established through Pearson correlation analysis as shown on table 3.

Table 3: Correlation analysis between credit risk rating and firms' profitability

		Profitability of sugar firms
Credit Risk	Pearson Correlation	-0.519**
	Sig. (2-tailed)	0.001
	N	36

There is a significant negative correlation between firms level of credit risks and its profitability $r = -0.519$, $p < -0.01$. As level of credit risk in an organization increases, firm's profitability declines. (Froot, 1993) states that if external sources of funds are more costly to a firm than internally generated funds, then the firm could benefit from offering credit to their customers. This can only be true if the firms put in place stringent control measures to ensure that the debts are well managed which will result to good financial performance.

5.4 Overall risk rating

Overall financial risk rating was obtained by computing the mean of credit, interest rate and liquidity risk rating as shown on table 4

Table 4: Overall financial risk rating

	N	Minimum	Maximum	Mean	Std. Deviation
Overall Risk Rating	36	1.33	4.67	2.99	0.89

The mean risk rating on all sugar manufacturing firms surveyed was 2.99, which on the scale provided indicated moderate risk.

5.6 Efficiency of financial risk management practices

Generally, respondents were required to rate the efficiency of financial risk management practices in controlling financial risks in their organization

Table 5: Rating on Efficiency of financial risk management practices

	Percent	Valid Percent	Cumulative Percent
Very Inefficient	5.6	5.6	5.6
Inefficient	27.8	27.8	33.3
Moderate	30.6	30.6	63.9
Efficient	19.4	19.4	83.3
Very efficient	16.7	16.7	100.0
Total	100.0	100.0	

Risk management practices in the sugar manufacturing firms surveyed, performed moderately in controlling the effects of financial risks in the organization, or even in an efficient manner. This is according to 66.7% of the respondents who rated them moderate or high. Minority 33% indicated that risk management practices were inefficient or very inefficient.

5.7 Relationship between Risk and Sugar Firms Profitability

Pearson Correlation between risk rating, efficiency of risk management and firms' profitability were established as

shown in Table 6

Table 6: Pearson correlation between Risk and Sugar Firms Profitability

		Profitability of sugar firm
Overall Risk Rating	Pearson Correlation	-0.689**
	Sig. (2-tailed)	0.008
	N	36
Efficiency of financial risk management practices	Pearson Correlation	0.714**
	Sig. (2-tailed)	0.006
	N	36

The study revealed a significant, strong, negative correlation between firms risk rating and profitability $r = -0.689$, $P < 0.01$. This indicates that as firms risk increased, profit margins shrunk due to the negative effects by the risk factors.

Further, there was a strong, positive correlation between firms efficiency of risk management and profitability $r = 0.714$, $P < 0.01$. This indicates that as the firm managed its risks more efficiently, the chances of loss were minimized hence higher profitability were realized. El-Masry (2006) in his study on risk management practices by UK non financial companies found out that firms that manage their risks were more profitable than the firms which had no structured risk management techniques in their systems and this in line with the research findings as there is appositive correlation between efficiency of risk management and profitability.

6. SUMMARY, CONCLUSIONS AND RECOMMEDATIONS

6.1 Summary

The sugar industry, by the nature of its operations, is subjected to a myriad of challenges as a result of the financial risk exposure. Interest rates volatility, foreign exchange fluctuations, credit risk and unstable commodity (fuel) prices have lead to unpredictability of profits and cash flows in these firms. In order to implement sound risk management practices, there is need for organizations to understand the nature and effects of risks facing them and the range of efficient risk management measures.

6.2 Effects of Liquidity risks on Profitability

The study sought to determine the effects of liquidity risks on profitability of sugar firms and the results showed that liquidity risks have a great impact on profitability and therefore sugar firms need to be financially stable to be able to sustain their daily operations. Diversification in other activities like production of ethanol, electricity and biogas has also helped other sugar firms to lower their total operating cost and hence increase their profitability as the firms get additional income from those activities.

6.3 Effects of Interest rate risks on Profitability

Although sugar firms do not deal with interest- based transactions, the firms are also exposed to interest rate risk. The sugar firms obtain some funds from financial institutions who charge interest on the loans and therefore changes in the interest rates will affect the total amount that sugar firms will repay to the financial institutions. From the findings, interest rate risks have significant impact on the profitability of the firms as most of the firms indicated that

changes in interest rates, affect the cost of capital and hence overall firms profitability.

6.4 Effects of Credit risks on Profitability

Sugar firms extend credit to farmers in the form of seed canes, fertilizers, and other farm inputs, therefore if not well controlled they are susceptible to credit risks which affects the overall profitability. The study sought to assess the effects of credit risks on the profitability of sugar firms and the results show a strong negative correlation between credit risks and profitability.

5.3 Conclusions

The preceding empirical analysis shed some light on the relationship between the financial risks and the profitability in sugar firms in Kenya. Financial risk management practices are useful to sugar industry that operates in dynamic and competitive environments like Kenya. Sugar firms' profitability was found to be average and the main financial risk factors affecting all of these firms are liquidity, interest rate and credit risks. All sugar firms in the sample had financial risk management practices to manage these primary financial risk components.

The financial position of firms enabled them to deal with risks associated with liquidity and this led to increased profitability as firms will be able to remunerate their workforce well leading to motivation and also firms diversify in other activities apart from cane production and thus supplement their income. The result shows that as firms manage liquidity risks profitability increases.

The sugar firms obtain additional funds from financial institutions who charge interest on the loans and therefore changes in the interest rates affects the total amount that they repays to the financial institutions. The results shows that when there are changes in interest rate risks the overall profitability of the firm is affected as the cost of capital will increase due to increase in the repayment amount.

From the results, Sugar firms extend credit to farmers in the form of seed canes, fertilizers, and other farm inputs which are not always well managed as the firms do not have stringent credit control measures in place and therefore they are not able to collect the amounts due when the cane matures as some farmers supply the cane to other sugar companies and hence the firms become susceptible to credit risks which affects the overall income from accounts receivables.

5.4 Recommendations

From the conclusions, liquidity risks have an effect on the profitability of sugar firms in Kenya and therefore the firms should ensure that they are financially stable so that they are able to pay cane suppliers in time for the farmers not to take their supplies to other competitors who are stable financially and are able to pay for the supplies after a short period of time. When the firm has funds they are able to acquire, maintain and service plants and offer competitive remuneration to their work force and this will enhance production and thus improving the overall profitability of the firm. Therefore, sugar firms should ensure that they manage their finances well in order to have enough capital to sustain their operations

Most of the sugar firms do not receive enough funding from the government through the Kenya sugar board, some firms therefore obtain their capital from financial institutions and interests are always charged on these loans which are determined by external forces. The firms should therefore try to reduce the sources of funding from loans by diversifying in activities like production of ethanol, production of power which may help to reduce total operational costs and also supplement their income when they sell the power to other consumers. Sugar firms should also get listed in the Nairobi securities exchange so that they get enough funds for their operations.

Since sugar firms extend credit to farmers in the form of seed cane, fertilizers, and other farm inputs, the firms should ensure constant monitoring of the cane growth so that the farmers do not harvest the canes and take them to other companies and hence recovering their debt. The firms should also put in place stringent internal credit control measures for them to able to recover all the debts from their accounts receivables.

5.5 Suggestions for further research

As for the profitability study, several extensions would be useful. Further research on the effects of financial risk management practices on budgeting and forecasting should be undertaken. With adoption of financial risk management practices by sugar companies, the future operations can be predicted with certainty thus enhancing the quality of budgets and forecast of future profitability of operations. This would result into stability of cash flows and

hence improve the performance of the firms in volatile times.

More research can also be done on the same subject over a longer period over a wide range of sugar companies in Kenya and different countries. This will enable the research to reduce the challenges faced by sugar firms due to their geographical location and inefficiency in management especially where political appointees come on board. It will also be important to study the impact of credit risks on the operational cost of the sugar companies. It is therefore suggested that future research cover a wider cross-section, a longer and different time period and include a wider range of variables.

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