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Using SWOT analysis and SEM to prioritize strategies in Foreign exchange market in Iran

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Abstract

Recently, due to international prohibition on Iran, foreign exchange market of Iran is facing with a severe crisis. In this situation adopting best strategy is vital for Iran. One of the best ways to select strategy is SWOT analysis. SWOT analysis is a powerful tool to identify strategies by strengths and weaknesses, opportunities and threats. Consequently, it is very important to prioritize strategies for organizations. Thus there are various methods presented for determining the priority of the strategies. This paper offers a new and statistical method that using the structural equations model, creates a second-order factor analysis model for each of the strategies SO, ST, WO and WT and the best model is chosen according to the AIC criterion. Comparing this approach to ANP reveals that ANP method is very complex and time wasting while the mentioned method is very easy and simple.

Keywords: Foreign exchange market, SWOT analysis, second order factor analysis, criterion AIC, structural equations model, the ANP method

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1. Introduction

Due to international prohibition on Iran, foreign exchange market of Iran is facing with a severe crisis. In this situation adopting best strategy is vital for Iran. The central bank of Iran tries to write different scenarios to control fluctuating of exchange market. There are many methods to write scenarios. One of the best ones is SWOT matrix.

SWOT analysis is a powerful tool to aid decision-making and systematically analyzing the external and internal environment of an organization or institution. By identifying opportunities and threats, strengths and weaknesses, organizations can develop strategies based on their strengths, vanish weaknesses, gain maximum profit using

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opportunities and neutralize threats (Kangas et al. 2003). SWOT analysis is incomplete to measure and evaluate strategy, so the effect of each factor in the proposed strategy does not show(Dyson, 2004).

SWOT factors are not independent of each other, but it is clear that there is a relationship between them. Generally, the weight of factors is calculated base on the principle that factors are independent of each other. Changes in weight of factors can cause changes in strategic priorities. So using methods that measures probabilistic dependencies between these factors and use them to analyze SWOT method is necessary. This study offers a new method to prioritize the strategies SO, ST, WO and WT using a second-order factor analysis model for each of them. So that each individual strengths, weaknesses, opportunities and threats are independent variables for second-order factor analysis model and the variables S, W, O and T are first level latent variables and the variables SO, ST, WO and WT are second level latent variables.

There are several methods for determining priorities. One of the most common methods is the ANP method. This method, using AHP questionnaire to prioritize strategies is completed by the experts (Lee, 2000).Since the AHP questionnaires with more than 8 questions or higher, is exhausting and time wasting,the experts will not be pleasant to complete the questionnaires. Thus much useful information will be lost. In this study, we present a statistical method with a simple and small questionnaire that does not have complex calculations.

2. Literature Review

Prioritizing strategies SO, ST, WO and WT is important for any organization. Kurttila et al. (2000) have used AHP technique to SWOT analysis. AHP can help decision-makers to compare the preference of each factor. ANP method is presented by Saati (1996) that is a comprehensive method. Mead and Sarkis (1998, 1999) used the ANP to develop logistics strategies to improve the production rate. Karsak et al. (2002), Partovi and Corredoria (2002) implemented ANP method in the quality processes. Chang and Lee (2005) by identifying partial and total SWOT factors and using ANP technique discussed about SWOT analysis. Yuksel and Dagdeviren (2007) utilized ANP to SWOT analysis to solve complex problems.

The following table shows different fields that SWOT analysis is implemented to choose strategy:

Authors	Years	Field
Kurttila	2000	Forest-certification
Shrestha et al.	2004	Agriculture
Yuksel and Dagdeviren	2007	Textile firm
Manteghi and Zohrabi	2011	Universities
Kajanus et al.	2012	Environmental
Luo and Qin	2012	Universities
Mohammad Pur and Alem Tabriz	2012	Film Factory
Sevкли et al.	2012	Airline
Tavana et al.	2012	Oil and gas
Bas	2013	Electricity supply chain
Yuan	2013	Civilization

ANP method is a complex, time wasting and exhausting thus experts are not willing to complete the AHP questionnaires. In this study, we used the second-order factor analysis model. For case study we use the new method in foreign exchange market in Iran.

3. Methodology

For using the new method, first of all SWOT matrix for Foreign Exchange market in Iran has been prepared by fulfilling a questionnaire and receiving the experts points :

SWOT Matrix	Strength-S	Weakness-W
	<p>S1 -High capital of the Bank S2 -More than half a century experience in the central bank S3- Attending the president of the Iran Central Bank in the International Monetary Fund and the World Bank. S4 -Launching exchange information system S5- Authorize new rules and regulations for the banking and monetary system S6- Approving guidelines to be more transparency for financial transactions of the banks S7- Annual Conferences of monetary and currency policies S8-Strengthening the regulatory system for banks with internal bank audits S9- Approving necessary laws to prevent money laundering S10- Implementing policies to reduce liquidity S11- Establishment of the Institute for Monetary and Banking S12- Hiring experts and economists at the Central Bank and the Institute for Monetary and Banking S13- Existence of permanent costumers in exchange market S14- Central banks as a market regulator, plan, organize, coordinate, regulate, supervise and control monetary policies in the market.</p>	<p>W1- Exchange market has multiple rates. W2- The Central Bank policies are weak. W3- Lack of exchange currency anagement expertise in the Central Bank W4- There is no accurate predictions of the future currency crises. W5- There is no proper strategies for dealing with the crisis. W6- Increasing interest rates of the banks in recent years W7 -Uncontrolled printing of money W8- Increasing liquidity W9- Increasing debt of banks to the Central Bank W10- Decreasing in foreign currency reserve W11- Relation of the currency price to oil prices W12- Become intertwined the currency price and gold price W13-There is excess demand in the foreign exchange market W14- There are unauthorized exchange brokers W15- Currency reserve is from oil sales, not production W16-Approve one-dimensional policies regardless of other economic indicators W17- Avoiding increase in foreign exchange prices artificially by government W18- Lack of appropriate monetary and banking system W19-Lack of transparency in the financial statements of banks W20-Weak implementing of the international guides to avoid inflation W21- Receiving enough guaranties in payment of loans W22-Lack of to adequately monitoring on sales and currency transactions in free zones W23- Weak adoption of the central bank policies with national plans and World central bank W24- To exist counterfeit currency in the Market</p>
Opportunities-O	SO	WO
<p>O1- Economic development projects with emphasis on banking reform O2- Executive agencies must do all foreign exchange trading with the approval of the Central Bank. O3- Executive agencies must notify all lists of foreign currency accounts in out of Country to the Central Bank. O4- Just the Central Bank can cater financial credit to do governmental infrastructure projects. O5- All banks, financial institutes and executive agencies have to give requested statistics and information to the Central Bank. O6- The Government cannot borrow from the Central Bank to compensate budget deficit. O7- Only the Central Bank to regulate the market can import gold and foreign exchange into the Country. O8- Using the capabilities of the World Bank and the International Monetary Fund O9- To launch Currency Exchange in Iran O10-Strengthening of the national currency against the dollar O11- To create a suitable fields investment for foreign investors O12- Establishing Foreign Exchange Affairs in the Fight Against Smuggling organization O13- To set up special courts for electronic banking O14- Students like financials fields O15- Full deployment of centralized banking system</p>	<p>1-implementing economic development policies considering new monetary system and banking laws (S5,S6,O1,O3) 2- FullyLaunching exchange information systemlaunch of the Currency System and the necessity to use itby all banks and money exchange brokers(S4,O5) 3-In order to encourage foreign investors for the completion of national projects, the Central bank shall publish international bonds .(S1,S2,S3,O4,O11) 4- Students in banking field should be employed in monetary and banking institute (S11,O14) 5-Close relationship of Iran president of the central bank and president of the World Bank and the IMF (S3,O8) 6-Establishing Foreign Exchange Affairs (S6,S8,S9,O12)</p>	<p>1- Creating a culture among the people that the currency is not capital goods(W1,W8,W15,O9,O10) 2- The central bank is the only importer and exporter of gold and silver(W10,W12,W13,O7) 3- Central bank implement the international rules for avoiding inflation(W10,W20,W23,O6) 4- Adequately monitor foreign exchange transactions in the free zones.(W2,W14,W19,W22,W24,O12) 5-Support national production and using sold oil money in the infrastructure sectors (W11,W15,W17,O10,O11) 6- Establishing stock exchange currency for legal transactions(W11,W13,O1,O9)</p>

Threats-T	ST	WT
<p>T1- Money and Credit Council should determine interest rate as least inflation T2- Weak economic relations with development countries T3-Huge intention of the smugglers for smuggling currency over the world T4-Sanction against Iran's central bank by the European countries T5 -Increasing rate of inflation T6- New governmental support policies cause more liquidity T7- There are Money Laundering in the Iran market. T8- Devaluation of the national currency T9- Lack of control on exchange brokers in border areas T10-There is not a currency portfolio for oil export T11- Sanction against Iran oil sell T12- Printingbanknotes with larger nominal amount T13 -Increasing in non-oil imports vs. exports T14-Appropriation governmental foreign exchange for luxuries and unnecessary goods T15 - Opening invalid LC by fictitious companies T16 -Impacting fluctuations in oil revenues over the smuggling currency T17 -People considering to invest in foreign exchange currency buying and maintaining long time T18 -Foreign exchange is exited illegally. T19 -Increasing house prices and rents T20 -Not receiving enough guarantees for loans and no return exits T21 -There is huge corruptions in the banking system. T22 -There is conflicting news about the foreign exchange market. T23-There is many sites that publish incorrect information about exchange prices. T24 -Lack of knowledge regarding international business transactions T25 -Poor access of the smuggling against instutes to relative inforamation T26 -Lack of governmental and private banks in border areas T27-Instability rules in Iran</p>	<p>1-Approving international policies for foreign exchange (S3,T2) 2-Set interest rates by the central bank in order to reduce inflation and liquidity(S10,S14,T1,T5) 3- leading the liquidity of the foreign exchange market led to the manufacturing sector(S10,S14,T8,T13,T17) 4-Establish difficult and precise rules for importing goods into the country (S10,S14,T8,T13,T27) 5-Identify all pyramid companies and sealing them(S14,T15,T18) 6-Approve efficient and accurate laws for giving loan(S5,S6,S14,T20,T21,T27) 7-Central bank play the role of the unique source of exchange rate in the country(S14,T22,T23) 8- Creating access level to the Currency System for executive agencies (S4,T25) 9- Establishing banks and admissible exchange brokers in border areas (S1,S14,T26)</p>	<p>1-Approve appropriate policies to reduce inflation and reduce liquidity by central banks and governments (W2,W7,W8,T5,T6) 2- Financial bills have to be more transparency (W19,T7) 3-Decreasing import goods (W10,T13) 4- Adequately monitoring on the sale, transfer, exchange on free trade zones (W19,W21,W22,T15,T20) 5- Separate the impact of currency prices and oil prices(W11,T16) 6-Lead public capital to invest in non-market exchange(W8,T17) 7-Approve laws and policies to prevent corruption (W2,W18,W19,T21)</p>

3.1- Second-order factor analysis model

First of all we shall declare that inputs and data for models in this study are from completed questionnaires by experts in foreign exchange market.

Using AMOS Graphics software the first model is formed for SO strategies. According to SWOT matrix, there are 14 strengths and 15 opportunities, thus SO model is in next figure.

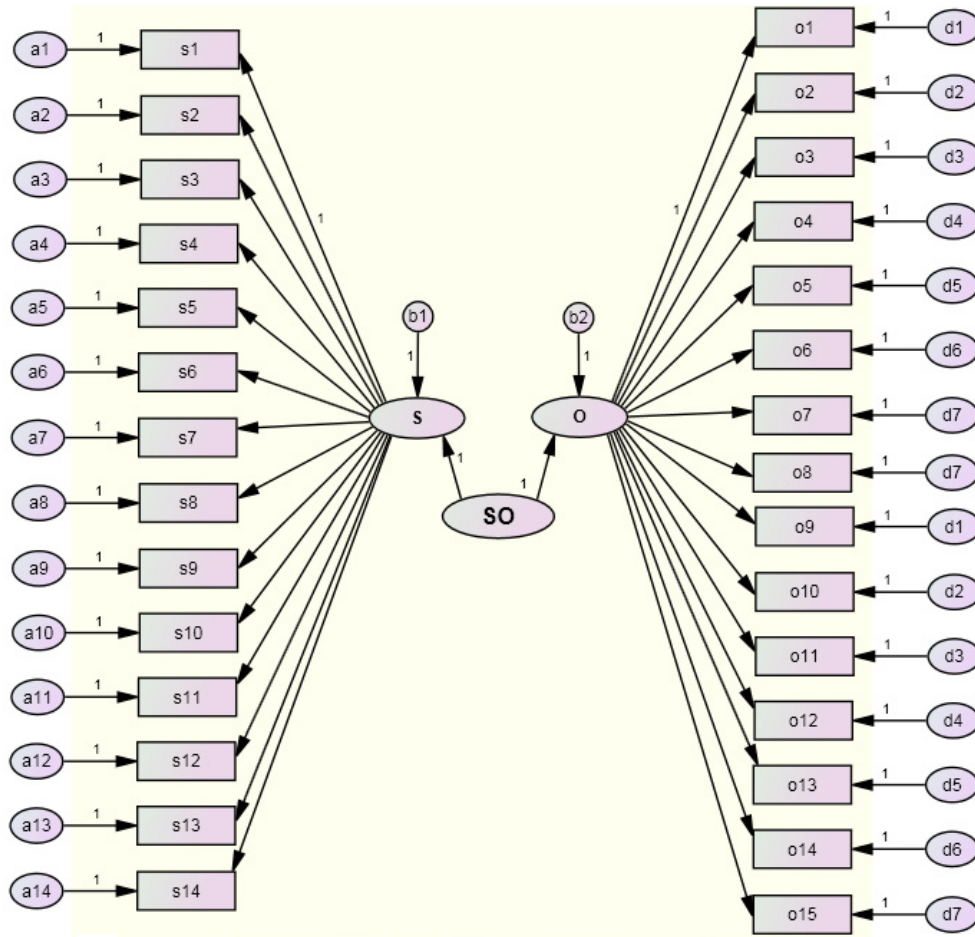


Fig 1. Research Model

The result of model is

AIC for SO Model

Model SO	AIC	BCC	BIC	CAIC
Default model	265.873	328.016	306.508	335.508
Saturated model	210.000	435.000	357.126	462.126
Independence model	439.217	469.217	458.834	472.834

The ST, WO and WT models are like SO model. So we do not present it here but the results are in following tables:

AIC for ST Model

Model ST	AIC	BCC	BIC	CAIC
Default model	226.127	276.527	263.959	290.959
Saturated model	182.000	351.867	309.509	400.509
Independence model	462.699	486.966	480.915	493.915

AICfor WO Model

Model WO	AIC	BCC	BIC	CAIC
Default model	445.863	586.463	497.707	534.707
Saturated model	342.000	991.800	581.605	752.605
Independence model	694.285	762.685	719.506	737.506

AICfor WT Model

Model WT	AIC	BCC	BIC	CAIC
Default model	415.803	530.349	464.845	499.845
Saturated model	306.000	806.727	520.383	673.383
Independence model	731.471	787.107	755.291	772.291

The least AIC criteria is the best, so sorted AIC criteria for models are in the next table

AIC For All Models

Model	AIC	BCC	BIC	CAIC
SO	265.873	328.016	306.508	335.508
ST	226.127	276.527	263.959	290.959
WO	445.863	586.463	497.707	534.707
WT	415.803	530.349	464.845	499.845

According to previous table the best model is ST Model. Thus ST strategies are the best for Foreign Exchange Market in Iran.

4- Conclusion

There are many methods to prioritize SWOT strategies. ANP and AHP methods are popular but they are very time wasting. The new method which is presented in this study is time saving and easy to use . So it is offered that this

method is use to prioritize strategies in SWOT analysis. Based on this study yields that Iran central bank shall consider some fundamental strategies to control the foreign exchange currency market which is mentioned below

- 1-Re Approving international policies for foreign exchange
- 2- Set interest rates by the central bank in order to reduce inflation and liquidity
- 3- leading the liquidity of the foreign exchange market led to the manufacturing sector
- 4- Establish difficult and precise rules for entering goods into the country
- 5-Identify all pyramid companies and sealing them
- 6-Approve efficient and accurate laws for loan
- 7- Central bank play the role of the unique source of exchange rate in the country
- 8- Creating access level to the Currency System for executive agencies
- 9- Establishing banks and admissible exchange brokers in border areas

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