

# A New Financial Instrument for Thai Urban Poor: A Case Study in Bangkok Metropolitan Area

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## Abstract

This study surveys the behavior of the urban poor in savings and in buying lotteries. It aims to analyze the possibility of replacing lotteries with lottery-linked saving instruments issued by banks in order to boost the long term savings of the low-income group. Data used in this study are from preliminary survey of 4,000 observed poor in Bangkok. Results of the survey confirm that lottery is the most popular financial investment among the Thai poor in Bangkok since their face of limited investment alternatives. Their behaviors in terms of their buying lottery indicate the promptness of the poor in responding to the program of mobilizing their lottery-money to long term savings.

**Keyword:** Lottery-Linked Saving Instrument, Urban Poor, Bangkok Metropolitan

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# เครื่องมือทางการเงินแบบใหม่สำหรับคนจนในเขตเมือง กรณีศึกษาจังหวัดกรุงเทพมหานครและปริมณฑล

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## บทคัดย่อ

งานศึกษาชิ้นนี้ทำการสำรวจพฤติกรรมการออมเงินและการซื้อห่วยของคนยากจนที่อยู่อาศัยในเขตกรุงเทพมหานครจำนวน 4,000 ตัวอย่าง โดยมีวัตถุประสงค์เพื่อจะวิเคราะห์ว่าจะสามารถสร้างระบบเครื่องมือการออมที่เชื่อมโยงมาจากการซื้อห่วยนี้ได้หรือไม่ ผลจากการศึกษาพบว่า การซื้อห่วยเป็นการลงทุนที่ได้รับความนิยมมากที่สุดจากครัวเรือนไทยที่มีฐานะยากจนเนื่องจากข้อจำกัดทางโอกาสที่คนจนจะไปลงทุนในเครื่องมือทางการเงินประเภทอื่นๆ งานศึกษานี้ยังเห็นว่า ภาครัฐสามารถที่จะสร้างระบบการออมที่เชื่อมโยงมาจากการซื้อห่วยและส่งเสริมการออมในระยะยาวของคนจนกลุ่มนี้ได้

**คำสำคัญ:** เครื่องมือการออมที่เชื่อมจากการซื้อห่วย, คนจนในเมือง, กรุงเทพมหานคร และปริมณฑล

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## 1. Introduction

Thailand is entering into an aging society where population within the working age is declining, and consequently the elderly dependency ratio is projected to increase rapidly from 14.26% in the year of 2000 to 55.49% in 2100. One measure to cope with problem in changing population structure is to encourage Thai households to save more for their retirement.

To date, even though the compulsory saving is one of the effective measures to increase long-term savings for Thai households, it is only applied to the government officials and those who work in the formal sector which cover only one-third of total workers in the country. For voluntary savings in formal sector such as Long Term Equity Fund (LTF), Retirement Mutual Fund (RMF), etc.; it is found that the poor rarely participates in such program. There are several studies on Thai household spending which lead to the conclusion that the group of lower income with low level of education tend to put their money in buying lottery regularly. This prolong behavior is detrimental to their long term savings. For Thailand to successfully increase its long-term savings of the poor, it is necessary to release them from this situation by creating a new saving instrument to replace lotteries.

The objective of this paper is to find out the characteristic of the new financial instrument that is suitable for Thai urban poor, and the ways to mobilize their savings into the formal financial sector through this new financial instrument. The savings will be the fund for supporting them when they retire. The success of mobilizing lottery-money to long-term savings is highly dependent on the responsiveness of this group to new financial instrument, and the way to make them participate in buying

the new financial instrument. Access to the new and better instruments should imply a crowd out of the less attractive into the more desirable ones.

Many well-known economists such as John Maynard Keynes, Milton Friedman, James Tobin, etc. believed that households would divide their money into 2 portions: one for spending in everyday-life and for emergency, the other for investment. The portfolio of investment during Keynes' era includes money and government bonds, where the later studies have extended to other financial assets such as stocks, bonds, treasury bills and in other types of physical assets such as gold, land, etc.

However, portfolio for the poor may be different. Since there is no any formal financial instrument that the poor want to put their money in thus far, inefficient forms of savings in informal sector are adopted as alternatives. The range of the informal instruments is wide. It can be cash under the mattress, gold, land to extreme forms like lottery. If lottery were considered as a financial asset for investment not for gambling, it would be the one with the highest risk and the highest return to invest comparing to other financial assets in formal financial market. If they have any other financial asset which is suitable for them to invest in the formal sector, their lottery- money can become their long term savings.

most of the poor in Thailand spend money on lottery as if it is one of their financial investment, this paper will focus on the behavior of the urban poor in Bangkok in savings and in buying lotteries, and to analyze the possibility of replacing lotteries with lottery - linked saving instruments issued by banks in order to boost the long term savings of the low-income group.

The survey of the behavior of Thai urban poor in savings and in buying lotteries is aimed to test the hypothesis that “Thai urban poor buy lotteries to invest rather than to gamble”. If the hypothesis is true, Thai government should allow financial institutions to issue the new formal financial instrument with less risky than to invest in lotteries and be transformed into long-term savings which will attract Thai urban poor to participate in the program.

To find out the possibility of Thai urban poor to switch their investment from buying both legal and illegal lotteries to the new formal saving lottery, the study will explore the behavior in buying lottery and the financial portfolio of Thai urban poor to confirm that lottery is the main asset in their portfolio. Based on the survey’s result, both demand and supply side for a new financial instrument that is suitable for Thai urban poor will be designed, and finally, the simulated scenarios to formulate policy concepts applicable to promote the long-term savings will be presented.

A preliminary survey was conducted in Bangkok by means of multi-stage sampling method during February and May of 2010. Samples of 4,000 were selected from people whose ages were at least 18 years old with the educational level lower than bachelor degree. Observations from 20 out of 50 total districts in Bangkok were selected by using simple random sampling method, and 200 samples per district were sampled accordingly, making a total of 4,000 samples for this study.

Thai urban poor in this paper are identified by location of living, level of education and the occupational types. The target samples were selected from those who live in Bangkok; the capital of Thailand. They

are working either as self-employed persons or employees in government sector, state enterprises or private sector.

Besides, there will be in-depth interview of participants in the lottery industry by means of purposive sampling method, which included vendors of government lotteries, underground lottery operators, and representatives from two authorized saving lottery issuers in Thailand:- the Government Saving Bank and the Bank for Agriculture and Cooperatives.

The remainder of the paper is divided into 5 parts. Part 1 presents a review of previous literatures that support the idea of mobilizing lottery-money to long-term savings. This part of review will relate to savings and investment behavior of low income people, rational why the poor buy lottery as their financial investment, and the conceptual framework of raising the poor's saving through lottery.

To prevent confusion in terminology, "lottery" in this study means either government lottery or underground lottery. Saving lottery represents lottery that the holder entitles to receive prize money as general lottery as well as its principal up to certain period of time. The current authorized issuances in Thailand are Government Saving Bank and the Bank for Agriculture and Cooperatives.

## 2. Literature Reviews

### *a. Savings and Investment of Low-Income People*

Financial access for investment of low-income people has been understudied. The literatures have focused more on the lending side which allows increasing financial access for poor people which normally known as microfinance, but very few have been done on innovating

new financial instrument for the poor to invest. One normally assumes that by the very nature of not having money, the poor cannot possibly save and manage what they do have. However, empirical facts including survey results of this study do not support this assertion.

According to Financial Diaries surveys in both Bangladesh and India (Rutherford, 2002; Ruthven, 2002), the finding showed that the poor do save and manage their portfolio through a variety of financial instruments which mostly are instruments in the informal financial sector. In the South African, the same result was found to be true (Daryl Collins, 2005). In general, saving instruments for the poor are not necessarily financial assets; they could be any object that can be used to preserve value and perhaps increase it from the present to the future. Such saving instruments could include gold coins, jewelry, cash and even animals. Rosenzweig and Wolpin (1993) for example described the use of bullocks as an asset in India; in their model, bullocks are investment assets used both to generate income and to smooth consumption. In Thailand, there is report from National Legislative Assembly (2007) that lottery is the most popular financial asset held by household. For the author, this is the main cause that makes the Thai poor become poorer and poorer. To mobilizing their lottery-money to long term saving fund, a new financial instrument suitable for the poor is invented by basing on the preference of the poor on lottery.

This section presents the idea why do we need to transform lottery-money of the poor to long term saving fund. To begin with, it is necessary to know the reason why lottery was first issued in the world and in Thailand, what are the motivations in buying lottery, and is it an instrument for gambling or for investment?

*b. Rational of Issuing Lottery*

The beginning of lottery issuance in many countries stems from the government needs to finance public interests such as utilities or infrastructure. China, for example, first issued lottery namely “Keno” during Hun dynasty (197-205 B.C) to finance the Great Wall project. Similarly in Europe, during the era of Augustus Caesar, the first issuance of lottery was sold to public and used the proceeds to finance the reconstruction of Rome.

In 1612, King James 1st of England granted Virginia Company of London issuing lottery and selling them publicly to finance English immigrants who wanted to settle down permanently in Jamestown of Virginia in U.S.A. which at that time was the colony of England. Since then the issuance of lotteries in the U.S.A. become widely popular and continually play an important role in mobilizing money in building the country. Similarly, for Thailand, the main objective of issuing and selling lotteries is also to raise fund for government revenue.

Issuance of lottery by government and sell them to the poor for fiscal purpose is controversial. It is generally believed that lottery-money is one form of disguised taxation that helps government raising fund for public interest more effective than collecting tax. But it is not fair for the poor because lottery buyers of different income levels pay the same price. In a society where most of the poor spend their income in buying lotteries, it might turn out to be the poor who support government revenue through lottery issuance.



*c. Motivation in Buying Lottery*

Most economists believed that lottery is a gambling. Theories in economics like game theory and decision theory predict that the “betting preferences” of people with regard to uncertain outcomes (gambles) can be described by a mathematical relation which takes into account the size of a payout (whether in money or in other goods), the probability of occurrence, risk aversion, and marginal utility derived from lottery reward.

Those who believed in marginal utility as an important factor in determining decision to buy lottery had brought marginal utility to relate with the buyer’s income. Bernoulli (1738) was the first economist to suggest that the marginal utility of the money spent by low income person will be greater than that of rich person. That is why poor people like gambling more than the rich ones. The framework fits well with the case of Thailand where Kananukul (1999), Mongkolchai, et.al. (2007) found that portfolio of Thai poor includes lottery in a higher proportion than the higher income group.

Bernoulli’s idea that the purpose of buying lottery is to increase the utility of the buyer is partly correct. It was developed later by Von Neumann and Morgenstern (1947) in their Expected Utility Theory which documented that marginal utility of each person will increase unequally not only up to their income, but also depends on individual’s risk preference, some like to take risk while others tend to choose sure thing.

This concept had been developed further by the Decision Theory which stated that the decision to bet or buy lottery does not base on marginal utility derived from winning prize money alone but also depends

on other factors such as the size of the prize money, the chance of winning the prize and risk preference, etc.. There were several studies that support this concept. Nyman (2004) believes that people decide to try their luck not because they like gambling but with other good reasons that are rational, they compare between expected loss and expected gain that arise from the betting. If the expected loss is greater than the expected gain, the consumer would not buy the lottery. This finding is consistent to the study of Brenner (1983, 1985) who found that the poor people tend to have plan for the money to spend on lottery comparing to the rich who seldom have.

The above findings indicated that buying lottery can be either for investment or for gambling preferences. The result is crucial to this study for it will be one of the fundamentals in supporting the suitability of new financial instrument for the Thai urban poor to be proposed in this study. It is expected that responsiveness from lottery buyers will be high if their motivations of buying lottery is mainly for investment rather than for betting preference.

#### *d. Evidences of Mobilizing Lottery-Money to Long Term Savings*

As mentioned before that the purpose of the first issued lottery in various countries such as Main Land China, England, and United States are from good intention for financing education, charity, building infrastructure, etc. At present there are legalized lottery operated by government either central, states, regional or city government in more than 100 countries worldwide ([www.worldlottery.net](http://www.worldlottery.net)).

Even though there are various financial instruments that are issued for the purpose of promoting savings of the poor, a financial instrument

of which its return is drawn randomly or so-called lottery becomes one of them that is chosen as an effective instrument in raising saving among the poor. In Japan, Minabe (1975) found that Japan had issued a financial instrument called “Lottery-Linked Deposit Accounts (LLDA)” during 1960 – 1975. The account holders received their normal return by 3 percent per year and 3.75 if they won the prize. The instrument had successfully raised savings in Japan. Another good example was the case in Indonesia, where Morduch (1999) reported that the Bank Rakyat Indonesia (BRI) also successfully increased money in deposit account at the bank by launching a program named “SIMPEDES” which offered deposit account to small scale investors with interest rates a little bit higher than inflation rate. The program provides an all- time- withdrawal service and a lottery which was up to the amount of deposit.

In England and in the United States of America, their governments issue “Lottery Bond” to help boosting up saving rate of their citizens. This instrument has the same characteristics as of the general bonds that the holder will receive fixed interest rate regularly, and receive the principal back on the maturity date. The bond is different from the general ones that there will be drawing lots at a specific period which successfully attract people to save more.

In addition, Maynard, et al. (2008) invented a new financial instrument called “Save to Win” derived from his survey result of 500 samples in the community of Clarksville, Indiana in 2006. He found that financial instruments that attached with prize money like lottery can be a suitable instrument for those who normally buy lottery and do not save money. He had recommended the “Save to Win” program to 8 cooperatives to try the operation after he learnt from similar projects which succeeded

in increasing savings from this group in several countries like South Africa, Sweden, etc.. The feature of this instrument is that the depositor will receive one lottery for every deposit of 25 US. Dollars at the cooperative, with limited amount of not more than 10 lotteries per month, and is restricted for residents of Michigan State only. The program is guaranteed by the National Credit Union Administrations. The depositor still receives interest at less than normal rate, but eligible to win the prize in every month and every quarter with the Jackpot prize is set up at 100,000 dollars. The program turns out to be very successful with 11,000 accounts raising total deposits of 8.6 million dollars.

The above examples indicate that employing lottery as a tool to build savings is not new and has been used extensively in various countries. Therefore, it is possible to construct an instrument which uses lottery as a vehicle to boost savings for the poor who buy lottery regularly.

In Thailand, it is generally known that lottery is the poor's most favorite instrument to put money in. Several studies on the behavior of buying lottery often look at lottery as a gambling instrument which is the main cause of poverty for the buyers and is difficult to help them out of this trap. Based on previous studies, it can be concluded that buying lotteries can be either for investment or for gambling preferences; lottery buyers, who want to invest their money by some means, can be assisted from their poverty through the issuing of new financial instrument suitable for them to invest. There are several empirical evidences proved that the financial instrument of which the amount of offered return are random like lottery which can be an effective instrument in mobilizing fund especially from the lower income group. However, it is found that saving lottery in Thailand has been playing little role in promoting saving

of households. There is need to study the behavior of saving and the demand for financial instruments of the poor, so that we can create a new financial instrument that is suitable for the poor to invest at a lower risk than buying lottery.

### 3. Lottery in Thailand

According to the survey conducted by the Government Lottery Bureau (2007) which covered 6,703 observations whose ages are 10-70 years old, living in 18 provinces of Thailand. It is found that there are at least 15 types of financial risk instruments that have been invested by the samples; they are government lottery, underground lottery, and other various forms of lottery, horse racing, and football gambling. Most of the instruments are illegal except government lottery which takes the biggest shares of 38.45 percent of the total betting, where the saving lottery was not count as financial risk instrument in the survey. The types of lottery being observed in this study are government lottery, underground lottery and saving lottery as follow:-

#### *a. Government Lottery*

The Government Lottery Bureau Act was enacted in 1983 to establish the Government Lottery Bureau as a state enterprise under the Ministry of Finance and undertake lottery operation legally. At present, there is only one types of lottery which being issued regularly so called “government lottery”. The lottery is regularly issued twice a month. Each issuance contains 30 million tickets. Each ticket has a set of 6 digit number and is sold at 40 baht. The winning prizes range from 1,000 baht

to 2 million baht making up total prize money of 23 million baht for 422,040 prizes.

*b. Underground Lottery*

Underground lottery is illegally operated by private entities. It is the most competitive product to “government lottery” compared to other illegal financial risk instruments. The game is attractive to low income and working class group in poor communities which could be played for as little as 1 baht and accessible through direct sales. The buyer has choice to select any number they want from one to three digits. The prize money being paid ranges from 3-500 times of the value betted.

*c. Saving Lottery*

Saving lottery is the lottery for encouraging Thai people to save. It looks like a standard bond with scaling interest rate of 1-7.5% over 1-5 years, with a lottery system attached to it. Each ticket costs 50-100 baht. Saving lottery ticket holders have chances to win prize, and receive the principal with interest payment when the ticket is matured. Winning prize is from 300 baht to 75 million baht. The savings certificate has a 6 digit number which is draw once a month. The buyers cannot choose the numbers of the lottery except those who buys through internet. At present, there are two parties issuing saving lotteries: the Government Saving Bank issuing “Slaag-Oam-Sin” and the Bank for Agriculture and Agricultural Cooperatives issuing “Slaag-Oam-Sup-Tavee-Sin”.

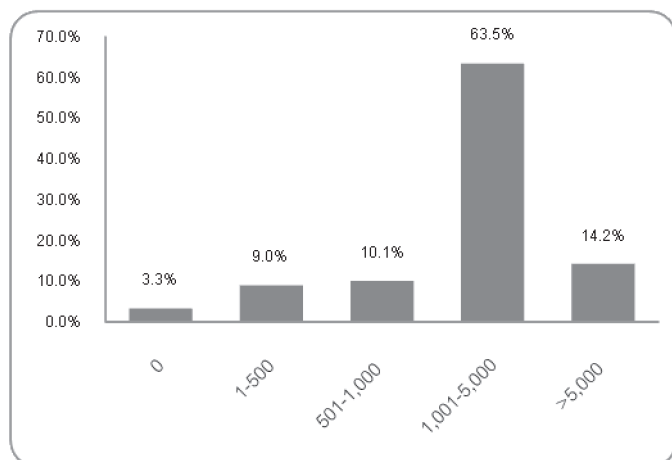
## 4. Survey Results

This part presents the survey results to support the facts that the samples in survey do have savings, and the lottery is their most favorite instrument to invest. Analysis on the behavior of lottery buyers from the survey shows that their behaviors are in line with the norm of other formal financial investors which will be determined in terms of their regularity in buying lottery, their purpose of buying lottery and the source of income in buying lottery. The three variables are important to indicate the promptness of the poor in responding to the program of mobilizing their lottery-money to long term savings.

### *a. The Poor in Bangkok do Save Money*

Observed samples in this study are low income group, with 93 percent of observations earn between 5,000-20,000 baht per month lower than the average earning of households in Greater Bangkok Metropolitan Area (include Nonthaburi Province, Pathum Thani Province, and Samut Prakan Province, according to the 2009 Household Socio-Economic Survey, which account for 37,732 baht per month. The survey result shows that there are only 3.3 percent of the observed samples that do not have enough money either to save or to invest, as presented in picture 1 confirming that the poor in Bangkok do save money.

**Figure 1** Percentage of Observed Household Urban Poor in Bangkok Categorized by their Savings in Baht



Source: Author's Calculation from Surveyed Data

*b. The Portfolio of Thai Urban Poor in Bangkok*

Upon investigating how the poor manage their savings/ investment in portfolio, it is found in the year of survey that they use totally 12 different financial instruments as presented in Table 1. Their portfolios consist of 64.47 percent of formal financial instruments; where 38.15 percent of them hold their savings in cash or deposit with other entities such as mother, wife, banks, etc. To deposit money with the bank is not common for them; cost of opening a bank account to earn interest rates from their deposit which includes transaction costs, fees and commissions is too high for this sector of population, as only 20.94 percent of the observed samples save their money with the bank.

For investment instruments, it is found that most observed samples hold a variety of financial assets from both formal and informal sector.



In the formal sector, majority of the samples put their money in government lottery which accounted for 25.32 percent, and less than 1 percent of them hold other financial assets as gold, stock, saving lottery, credit union, and mutual fund. Their investments in the informal sector, on the other hand, are lending money to their neighbor informally, putting money in a mutual lending circle which is normally called “share” in Thailand, buying outlaw lottery which runs by private entities and football gambling. Among them, the illegal lottery is the most popular instrument with 25.14 percent of the total. To put money invest in “share” is an informal way of lending money/ raising fund to each other in circle for household.

Results of the survey from Table 1 confirm that lottery is the most popular financial investment among the Thai poor, as more than 50 percent of the observed samples buy either the government lottery or the illegal lottery in their portfolio. The poor would rather buy the lotteries than put their money in formal competitive instruments such as mutual fund, because it is too formal and unattractive return compared to invest in lottery. The 35.53 percent of the poor that put their money in informal financial instruments in their portfolio reflects the fact that there are still impediments to save and invest for the poor in Bangkok. This finding is consistent with the study of McKinnon (1973) who believes that if people are constrained to save in some certain instruments, they should be saving in alternative ways despite riskier. Theoretically, access to formal saving instrument with less riskier is one of the ways to secure the increase in return of money. How to make the poor access to formal savings and investment instruments is the concern of this study.

**Table 1:** Portfolio of Observed Thai Urban Poor in Bangkok

<b>Total formal instruments</b>	<b>64.47%</b>
cash/deposit	38.15%
government lottery	25.32%
gold	0.16%
stock	0.02%
saving lottery	0.79%
credit union	0.01%
mutual fund	0.01%
<b>Total informal instruments</b>	<b>35.53%</b>
lending	1.93%
share	6.67%
illegal lottery	25.14%
football gambling	1.79%

Source: Author's Calculation from Surveyed Data

Saving lottery, on the other hand, is not widely invested among the poor as less than 1 percent of them participating in the program. The above evidence confirms that Thailand need more appropriate financial instruments to raise the poor's savings in place of both legal and illegal lotteries. The solution leads to the focal point of this study to find out the new formal financial instrument that has characteristic as lottery but suitable for them to hold and guarantees their long-term savings. This study does not consider insurance as an alternative for the poor to put money in, since there are no program of insurance selected by the poor as their choice of long-term savings.

*c. Promptness of the Poor for Long Term Savings Program*

Readiness of the poor lottery buyers to participate in the new financial instrument is a crucial factor for the success mobilizing their lottery-money to long term savings. Upon investigating the promptness of the poor in responding to the program, this study uses three indicators namely (1) the regularity in buying lottery (2) the purpose of buying lottery and (3) the source of money used to buy lottery to measure their capability in participating the program. The results as presented below show promising evidence that the majority of up to 70 percent of lottery buyers spent money on lottery regularly either monthly or quarterly, most of them are not strongly motivated by gambling purpose and use their own money in buying lottery.

*d. The Purpose of Buying Lottery for the Thai Poor in Bangkok*

This study has gathered the results of several studies concerning the purpose or the motivation of buying lotteries from various literatures and reclassified groups of lottery-buyers to suit Thai society into 4 groups. They are (1) those who hope to escape from the poorness, (2) those who are induced to buy, (3) those who think they would win the prize, and (4) those who buy lottery for fun disregarding whether they will win or lose. For the Thai urban poor, result of study shows that there are 46.63 of lottery buyers expects return from their investment in lotteries. The group which like to try their luck on lotteries account for only 21.43 percent of the total samples. The rest of 31.94 percent are the ones that are induced by several factors like want to be in trend since people around are lottery buyers, buy when they have lucky numbers in mind either derived from news or dream, easy to buy and gaining habit of buying lotteries.

It is expected that the prospect participants in the new financial instrument program should be the ones that buy lottery for return, not for fun from gambling. Table 3 shows that such amount is about 78.29 percent of lottery buyers. The second groups are excluded in Table 2 because the possibility that the gamblers might join the program is low.

**Table 2 :** Purposes of Buying Lottery (can be more than 1 choice)

Reasons to Buy Lottery	Percent of Lottery Buyers
To win prize	46.63
Just for fun/ want to bet	21.43
Following attractions and easy to buy	28.29
Habits	3.37

Source: Author's Calculation from Surveyed Data

*e. Continuation and Frequency in Buying Lottery*

Frequency in buying lottery is also an important factor in indicating whether the observed samples afford to participate in the new long-term- saving instruments. During the year of survey, 88.78 percent of the samples bought lottery either underground or government lottery, and there were only 11.25 percent of them did not put their money in any gambling activities. Among the lottery-buyers, 80 percent of them had been put their money in lottery continuously more than 1 year, indicating their readiness in participating the new program that offers financial instrument suitable for them (Table 3).

**Table 3 :** Continuation in Buying Lottery of the Poor in Bangkok

Never	11.25%
Less than 1 year	0.20%
1-10 years	58.93%
11-20 years	22.90%
More than 20 years	6.92%
<b>Total</b>	<b>100%</b>

Source: Author's Calculation from Surveyed Data

*f. Source of Money Spent in Lottery*

About 83.66 percent of the lottery buyers use money from their earned income and the prize money they won previously (Table 4). The average amount of money that the observed samples spent in buying lotteries per month are 600 baths or 7,210 baths per year.

**Table 4 :** Frequency in Buying Lottery and Source of Money Spent in Lottery

Purpose of Buying Lottery						
	Frequency in Buying Lottery for Return				Buying Lottery for Gambling and Other Purpose	Total
	Never	Regular	Occasionally	Total		
Own money	11	69.78	2.88	83.7	1.53	85.2
Others' money	0	6.05	0.1	6.15	8.67	14.8
Total	11	75.83	2.98	89.8	10.2	100

Source: Author's Calculation from Surveyed Data

*g. Possibility of Shifting Lottery-Money to Long-Term Savings*

In Thailand, the most popular lotteries being sold in the market is the government lottery and the underground lottery. It is found that most of the buyers of the underground lottery and those who buy the government lottery are different groups. There are only 28.5 percent of the total samples buy both types of lotteries as shown in Table 5. It implies that if there is a development of a new financial instrument so called in this study “lottery saving deposit” has the same or close to the features of the government lottery in terms of price, distribution and records, but redeeming the principal like saving lottery; there are possibly two groups of people who are susceptible to buy this new instrument;- they are people who buy only the government lottery and those who buy both the underground and the government lotteries which altogether account for 58.8% of the samples. However, if we want to lure the underground lottery buyers to join the program which there are 29.95 percent of the samples, the features of the instrument must be more flexible than the government lottery such as the cheaper price than the government lottery and the buyers can choose numbers they like.

**Table 5 :** Behavior in Buying Lottery of Samples

What kind of lottery you buy	percent
Government lottery	30.35
Underground lottery	29.95
Both Government and Underground	28.48
None of above	11.00
Other gambling	0.225
Total	100

Source: Author's Calculation from Surveyed Data

## 5. Recommended Features of New Financial Instrument for Thai Urban Poor

The study mentioned above leads to the conclusion that the instrument, that is able to induce the change in behavior of the buyers from lottery to this instrument, must have features of the underground lottery combining with those of the saving lotteries currently available as follows:-

a) Return on buying “lottery saving deposit” should follow the same terms as buying lottery, since about 67.28 percent of lottery-buyers in the survey are investors that prefer buying high risk –high return instrument to low risk-low return (Table 6). There are only 4.53 percent that willing to buy instrument which offer low prize of winning despite they can get back their principal later. This is why the saving lottery is not successful in inducing the poor to save in Thailand.

Table 6 : Features of Desirable Lottery

If selectable, you would choose lottery	
with the following features	Percent
Big prize money with no redemption of principal	67.28
Small prize with redemption of principal	4.58
Medium prize with partial redemption of principal	28.2
Total	100

Source: Author's Calculation from Surveyed Data

b) Minimum purchase of the underground lottery is as low as 1 baht whereas government lottery cost 40 baht per ticket. For the lottery saving deposit to be successful in replacing money-lottery to long-term saving among the poor people, the minimum purchase for the new instrument per ticket should be lower than the presently government lottery. However, the new instrument cannot be that low, because the distribution expenses will be high and the rewards payout will be lower. The price of new instrument is suppose to equal 10 baht each to make it compatible to the price of each unit in buying mutual fund.

c) Frequency of reward payout should be twice a month which is the same condition as government lottery,

d) Winning number set should be the same as drawn for the government lottery to reduce operation cost in this part, and to save buyer's time to follow their investment situation.

e) Chance of winning rewards, the government lottery and the underground lottery offers one chance to win the prize per ticket, while saving lottery offer the chance to win prize in every month until the



maturity date. It is postulated in this study that it should be one chance to win per ticket as the government lottery, but part of money spent on ticket will be kept in the long-term saving fund.

f) Selecting numbers in lottery ticket become one of important factors in buying lottery for the poor. It is found in the survey that 88.90 percent of lottery- buyers have preference in selecting the numbers; where 68.31 percent of the total insist that they will not buy lottery if they could not get numbers they want, and the rest of 20.59 percent may buy sometimes even though they cannot get the numbers they want (Table 7). Such behavior indicates that to guarantee their willingness to participate in the program, the new financial instrument must allow buyers to choose their numbers. The method is deemed fair to the buyers, since the buyers of other formal financial instruments have the right to choose in according to their preferences.

**Table 7 :** Decisions to Buy Lottery Related to Chance in Selecting Lottery Numbers

Do you choose numbers when buying lottery?	If no numbers wanted, will you buy lottery or not?			Total
	Yes	No	Probably	
Yes	19.83	68.31	0.76	88.90
No	10.06	0.65	0.39	11.10
Total	29.89	68.96	1.15	100.00

Source: Author's Calculation from Surveyed Data

## 6. Conclusion and Policy Recommendation

From the samples of low income group in Bangkok, it is found that 75.83 percent of this group bought the lotteries either legally or illegally every month. It implies that their incomes are high enough to support their living, so that they can spare part of their money for lottery. Their behavior in buying lottery does not differ from formal financial investors who buy bond, stocks or derivatives, etc., of which the investors buy their instruments if underlying assets are promising; the stock-buyers base their decision in selecting stocks on the performance of companies, where investors in derivatives base their decision on the respective underlying assets. By the same token, the lottery buyers must have something to refer to in choosing their lottery tickets as well. The result of the study shows that 48.68 percent of the buyers use their dreams or secret objects as underlying information in buying lotteries, and 41.10 percent of them base their decisions in selecting lottery tickets on others' opinion as underlying information, indicating that this group of people can most likely be persuaded to change their investment behavior if they are provided with the adequate information.

It is pitiful that lottery is not a reliable instrument to guarantee returns from the money invested, and their prolong investment behavior would make them getting poorer and poorer. During the year of survey, it is found that there are 42.6 percent of samples ever won the lottery-prize at least once, but there are only 14.25 percent of lottery- buyers that actually have net gains from their betting. If there exists a new financial instrument that the poor are satisfied to invest like lottery with the option of redeeming part of the principal to the holders, the amount of lost money will be kept by authorized fund manager and be reinvested in the formal financial market for their long-term saving .

This study would suggest the government to introduce a new financial instrument that suits the behavior of Thai people and makes it a legal financial instrument for these low income and low educational group to have an alternative means of investment replacing the purchase of lotteries. The recommendations are as follows:-

1. The instrument that can replace lottery should be sort of betting, but there is no losing; lottery numbers must be selectable; to make the instrument accessible by the poor; minimum purchase should be as low as possible; chance of winning prizes and frequency of paying out should be similar to the government lottery and bring the profits from sales to set up a mutual fund managed by professional fund managers and return to the buyers when they are at their 60 of age.

2. The operator of this project should be the agency of the government or the two banks which are currently the authorized issuances of saving lotteries, namely the Government Saving Bank and the Bank for Agriculture and Agricultural Cooperatives.

3. This program will have no difficulty to find participants, since buying lottery is the behavior the target group has been behaved regularly and continuously, therefore they are ready to join the program.

The researcher has no purpose to ask the government to cease its current lottery operation or replacing the existing government lottery with saving lottery proposed by this study, because issuing lottery is one of the effective ways to raise money to finance public interests. Some countries believe that lotteries mobilize fund from citizens more effectively than tax collection does. But raising fund from citizens by issuing lotteries is not suitable for countries with the majority of

population are low income group like Thailand. It is not fair to tax the poor to finance the public interests.

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