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An Empirical Study on the Modeling Analysis of Financial Institutions' Tortious Conduct from the Perspective of Legal Dogmatics

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Abstract. The application of criminal law methods to model and regulate relevant behaviors in civil cases has been one of the hot topics in the research of criminal law scholars in China in recent years. However, due to the solidification of research models and the limited theoretical breakthroughs, current scholars still study the characteristics of financial crimes based on the temporal and spatial characteristics of crimes in criminology, while ignoring the common sense that law constrains behavior. Based on this, this paper proposes an abstract model named the Morohusi – C. Y. HU Model, and takes the recent illegal real estate securitization case of "Shenfangli" as an example to identify and evaluate the suspected financial criminal behavior of the "Shenfangli" platform. Through detailed analysis, the financial behavior analysis module in the model concludes that its capital flow has a bottom-up "pyramid-shaped" characteristic, and calculates its profit amount in detail; while the financial behavior evaluation module in the model suggests possible convictions, namely, the combined punishment of the crimes of illegally absorbing public deposits and organizing and leading pyramid selling activities. Therefore, criminal law modeling research based on behavior analysis has certain universality, and can establish different specific application models according to specific cases.

Keywords: financial institutions' tortious conduct, behavior analysis model, real estate securitization, fund-raising fraud, illegal business activities

1. Preface

The modeling study of criminal activities and the patterns of their distribution has always been one of the research topics for criminologists. Regarding the modeling of the temporal and spatial distribution of crimes, Montesquieu provided a detailed elaboration in his work "The Spirit of the Laws."[1] However, whether it is the modeling of criminological theories based on social disorganization theory [2], routine activities theory, or crime pattern theory, the focus has been solely on natural crimes. For the prediction of the locations of statutory crimes and their activities, the modeling conducted by traditional criminological theories seems to be in a "malfunctioning" state. Taking financial crimes as an example, due to the global urbanization process, the location of financial institutions has been concentrated in the CBD areas of each city. Therefore, it is undoubted that the locations of financial crimes are also inevitably concentrated in the CBD areas of each city, a conclusion that can be drawn without modeling. However, using traditional criminological models designed for natural crimes often results in very complex conclusions, which frequently lack practical reference value in judicial practice.

Regarding the establishment of criminological models for statutory crimes, scholars from different countries have proposed various viewpoints. Bottoms and others, after observing the patterns of human daily activities, proposed the crime pattern theory for the construction of criminological models. This approach uses the concept of "cognitive space," starting from the relationship between the subjective distance perceived by the offender and the actual commission of the crime, to model and identify the intersection points, thereby determining the spatial range of statutory criminal activities [3]. Considering that the geographical locations of corporate statutory offenders, represented by financial institutions, are relatively concentrated in the CBD areas of cities, Eck and others proposed the kernel density estimation method to identify the spatial clustering characteristics of corporate statutory offenders [4]. Taking into account that crimes committed by financial institutions often involve the interconnectness of multiple institutions, meaning that the criminal behavior of one financial institution often implicates the actions of another

institution in a different region, Ripley proposed Ripley's K-function to test the spatial autocorrelation of discrete points, in an attempt to summarize the intrinsic characteristics of financial institution crimes [5].

However, as pointed out by Chinese criminologist Fu Yifei, due to the stagnation of criminological research models and the limited breakthroughs in theory, current researchers in financial crime modeling still focus on traditional spatial and temporal distributions of crimes and related crime prevention strategies. But with the rapid development of China's market economy, considering the maturity of financial institutions' location choices and their legal obligations to disclose information, the current challenge in financial crime supervision has shifted from the spatial and temporal characteristics of financial crimes to the identification of criminal behavior. That is, the difficulty no longer lies in obtaining relevant information about financial crimes [6], but in summarizing from the vast amount of information publicly disclosed by financial institutions whether their related actions constitute a crime, and if so, what kind of crime.

Considering that the behavioral identification analysis of financial crimes has already involved multiple disciplines such as criminology, finance, and law, this paper will establish a model named the Morohusi - C.Y. HU. Model for the analysis of financial criminal behavior. Finally, an empirical analysis will be conducted using the recent difficult case of the "Shenfangli" illegal real estate securitization case to demonstrate the scientificity of the Morohusi - C.Y. HU. Model, the effectiveness of behavioral analysis, and the accuracy of conviction and sentencing.

2. Establishment of the Morohusi - C.Y. HU. Model

2.1. Abstract Establishment of Morohusi - C.Y. HU. Model

For the establishment of the Morohusi - C.Y. HU. Model, it should be divided into financial behavior identification and financial behavior evaluation based on the characteristics of financial crimes. Among them, financial behavior identification should be analyzed using financial knowledge, while financial behavior evaluation should be conducted using legal knowledge for conviction and sentencing. The framework is shown as in Fig. 1.

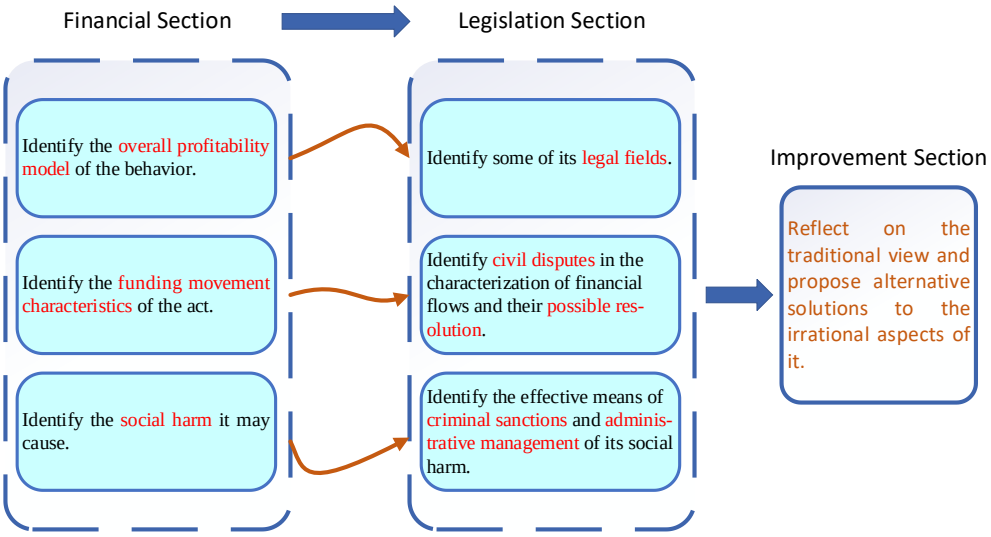

Figure 1. Foundation of Morohusi - C.Y. HU. Model

It can be seen that in the Morohusi - C.Y. HU. Model, for the part of financial behavior identification, the following three steps should be carried out:

(1) Identify the overall profit model of the behavior.

(2) Identify the financial flow characteristics of the behavior.

(3) Identify the potential social harm it may cause.

And in the Morohusi - C.Y. HU. Model, for the part of financial behavior evaluation, the following three steps should be carried out:

(1) Identify the legal department domain it belongs to.

(2) Identify civil disputes in the financial flow characteristics and possible solutions.

(3) Identify effective means of criminal sanctions and administrative management for its social harm.

Of course, financial behavior identification and financial behavior evaluation complement each other. Only after identifying the overall profit model of the financial behavior can one identify the legal department it involves, that is, whether the case belongs to civil disputes, administrative regulation, or touches the bottom line of criminal law. Only after analyzing the financial flow characteristics of the financial behavior can one determine whether it belongs to civil disputes, and if so, what specific solutions

are available under our country's civil law. And only after identifying its potential social harm can one resort to administrative management means or criminal coercive means to sanction it.

Finally, whether for financial behavior identification or financial behavior evaluation, unreasonable traditional views should be reflected upon, and alternative solutions for improvements should be proposed. Of course, the reflection in the model should be included in the specific process of financial behavior identification and evaluation, rather than being a separate module. However, considering that specific reflection is the essence of the Morohusi - C.Y. HU. Model, it is listed separately in the abstract model to highlight its significance.

2.2. Specific Application of Morohusi - C.Y. HU. Model

As Engels said, Marx's entire worldview is not a doctrine, but a method; it provides not ready-made dogmas, but starting points for further research and the methods for conducting such research. Similarly, the Morohusi - C.Y. HU. Model abstract model is also a highly abstract methodology. Therefore, when analyzing different cases, specific behavior identification and analysis models should be designed under the guidance of the Morohusi - C.Y. HU. Model abstract model, followed by detailed analysis.

To prove the scientificity of the Morohusi - C.Y. HU. Model, the effectiveness of behavioral analysis, and the accuracy of conviction and sentencing, this paper will, based on the Morohusi - C.Y. HU. Model abstract model, conduct modeling analysis and identification research on the recent hot topic of "Shenfangli" illegal real estate securitization.

The "Shenfangli" platform proposes a "house flipping" operation model called "house ownership securitization" which suggests that multiple "Shenfangli" users jointly purchase a property. For example, it suggests that ten people, including a and b, buy a house in Shenzhen worth 10 million yuan, with the total cost shared equally among them, meaning each person contributes 1 million yuan. However, considering that only a has the qualification to purchase a house in Shenzhen, a is recognized as the owner of the house, and b and the other eight people sign an agreement with a to hold their ownership shares on behalf of a. For the 10% house ownership shares of b and the other eight people, as well as the agreement for holding ownership shares on behalf, the "Shenfangli" platform records the relevant information on its own server through related procedures to ensure the accuracy and completeness of each user's information record. If b sees a rise in house prices and wants to sell his 10% ownership, he can find a new user through the "pathfinder plan," and require the new user to register an account on the "Shenfangli" platform. Finally, through the relevant procedures of the "Shenfangli" platform, an online transaction can be conducted to sell the 10% ownership share to the new user or someone else willing to take over on other platforms.

However, the primary function of real estate is for residence, and economic development and tax functions should be built on top of the residential function. To change the trend of high and rapidly rising urban real estate prices, the Central Economic Work Conference held in Beijing from December 14 to 16, 2016, first proposed the concept of "houses are for living in, not for speculation." The "Fourteenth Five-Year Plan and 2035 Long-Term Objectives Outline for National Economic and Social Development of the People's Republic of China" still adheres to the principle of "houses are for living in, not for speculation," and aims to achieve "three stabilities," namely, stable land prices, stable housing prices, and stable expectations. However, the "Shenfangli" platform's actions of "crowdfunding to buy houses" by multiple people and wealthy members establishing a "funds reservoir" to raise down payments for others to buy houses undoubtedly raise housing prices significantly from various aspects. The illegal "securitization" of houses leads to a false economic boom in the local area, which undoubtedly ends in the collapse of a "bubble economy," leading the local economy into a long period of depression. In view of these characteristics, the Morohusi - C.Y. HU. Model abstract model is specified after considering the practical aspects of this case, resulting in the specific application model of the Morohusi - C.Y. HU. Model as shown in Fig. 2.

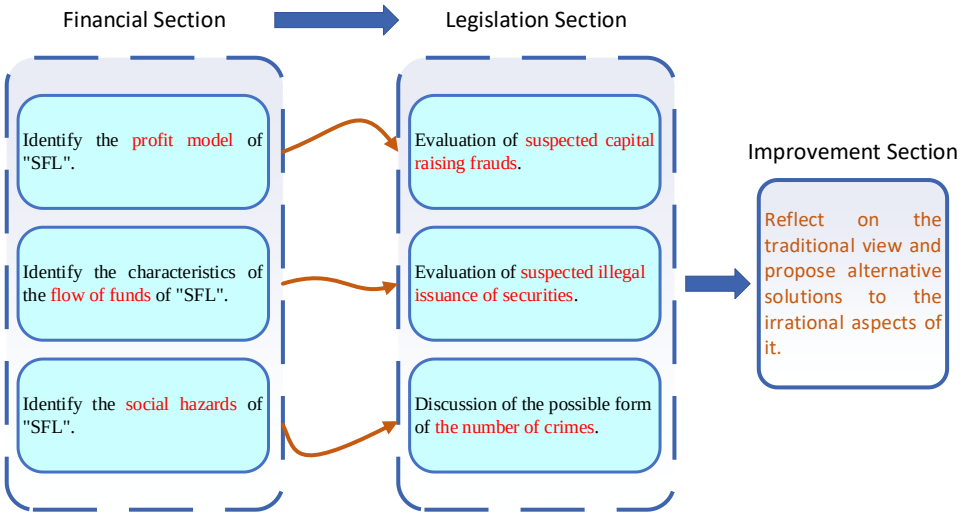

Figure 2. Specific Application of Morohusi - C.Y. HU. Model

As shown in the figure, for the financial behavior identification module, it should be specified to identify the profit model of "Shenfangli," the capital flow characteristics of "Shenfangli," and the social harm characteristics of "Shenfangli." For the financial behavior evaluation module, it should be detailed into the evaluation of suspected fundraising fraud, the evaluation of suspected illegal securities issuance, and the possible discussion of the form of crimes.

Of course, although the reflection on traditional views has already been integrated into the financial behavior identification module and the financial behavior evaluation module, to emphasize the significance of reflecting on the unreasonable aspects of traditional views, the Morohusi - C.Y. HU. Model still lists the improvement module separately, which is also a respect for the integrity of the Morohusi - C.Y. HU. Model abstract model.

3. Identification of “Shenfangli”'s Financial Behavior

3.1. “Shenfangli”'s Profit Model

3.1.1. Suspected Pyramid-Scheme Style Multiple Qualification Acquisition Fees

Considering that the “Shenfangli” platform did not comply with the information disclosure obligations of financial institutions, in order to compensate for the lack of specific data, the authors of this paper, after referencing various mainstream newspapers and related whistleblower posts and conducting repeated comparisons, selected credible data to calculate the capital flow characteristics of the “Shenfangli” platform to identify its financial behavior.

For users who wish to obtain services from the "Shenfangli" platform, they first need to acquire the service qualification of the "Shenfangli" platform. As a result, the "Shenfangli" platform has designed a large number of "pyramid scheme"-style multiple qualification acquisition fees for charging, with its overall structure as shown in Fig. 3.

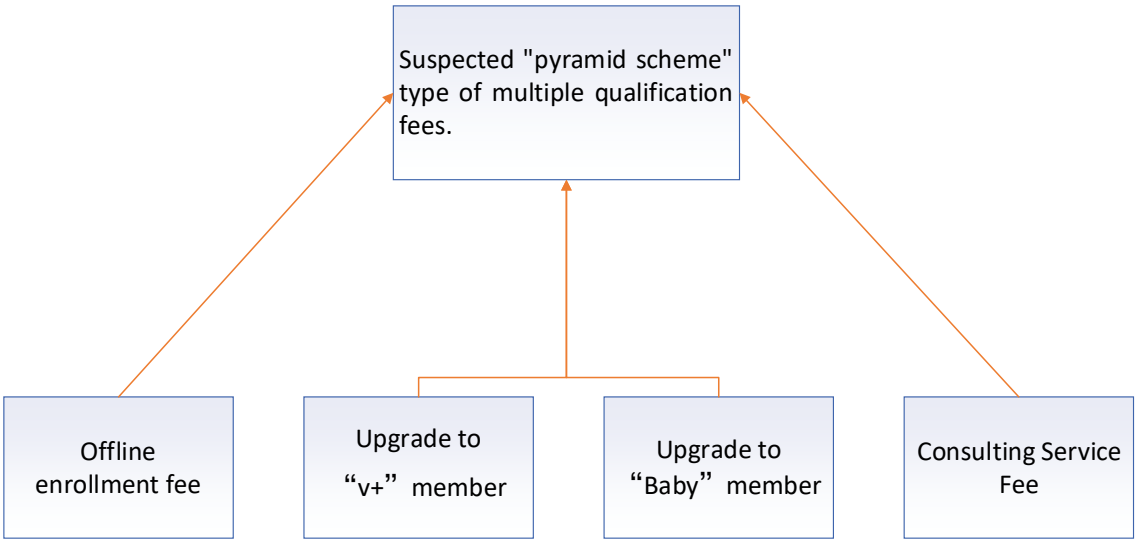

Figure 3. Structure of the multiple nominal eligibility fees of "SFA"

According to the guiding principles of the specific application model of the Morohusi - C.Y. HU. Model, multiple capital flows should be symbolically represented in the financial behavior identification module and calculated using financial formulas.

As shown in Fig. 3, first, the user unit is quantified with a mathematical symbol as epm, which stands for “each payment.” The user unit can be the number of times “each person” upgrades their service to obtain a higher-level qualification, or the number of times “each time” they receive online consulting services. This assumption is the largest prerequisite for using mathematical formulas to quantify the “Shenfangli” profit model.

Under the repeated propaganda of similar statements from the “Shenfangli” platform, such as “Shenzhen housing prices will always rise” and “Not buying a house in Shenzhen will make the next generation suffer,” driven by the profit-seeking psychology, people have developed the idea of joining the housing speculation army. However, considering that the vast majority of people have never been to Shenzhen, lack investment experience, risk awareness, and down payment capability, possessing the “four no’s” characteristics, the idea of following the “professional platform’s” advice on fund allocation naturally arises. Therefore, to attract the public to join and create the appearance of “Shenfangli” as a high-end investment platform, the first income of the “Shenfangli” platform after its opening is the offline membership fee. To calculate with a formula, the offline membership fee per person is symbolically represented as jpf, which stands for “join the platform.”

The income from offline membership fees can be formulaically represented as:

$$R_{Membership\ Offline} = epm * jpf * year\ (Unit: Chinese\ Yuan)$$

To learn the financial knowledge published by the "Shenfangli" platform, merely paying the offline membership fee is not enough. Under the recommendation of the "Shenfangli" platform staff, most people choose to become "v+" annual members to receive the "learning knowledge" in finance published by the "Shenfangli" platform daily for study (in reality, "v+" annual members pay to receive brainwashing information from the platform. Since the "learning materials" are paid for by the "v+" annual members rather than obtained for free, the effectiveness of the brainwashing will greatly increase). Here, the upgrade fee for each "member" to become a "v+" annual member is symbolically represented as upgv+, which stands for "upgrade to v+ member."

The income from the upgrade fees for each "member" to become a "v+" annual member can be formulaically represented as:

$$R_{V+Membership} = epm * upgv + * year\ (Unit: Chinese\ Yuan)$$

The so-called 2020 "v+" membership costs nearly 4,000 yuan annually, and its main function is to read exclusive "Shenfangli" paid articles, such as "Understanding Game Theory," "Breaking Through Class Barriers," and so on. These articles promote ideas like "Shenzhen housing prices will rise, achieving financial freedom," and "work is worthless" to attract members to speculate on Shenzhen housing prices. The "Shenfangli" paid membership is repeatedly brainwashing in nature. According to the Weibo account @Shenfangli Decoration Team, there are about 7 WeChat "V+ Member Groups," each with around 450 to 490 people, estimating that there are about 3,000 "V+" members.

In addition, under the repeated brainwashing of Zhang San (Weibo name: @Meixxx, now deactivated) with phrases like "workplace grievances, marital difficulties; life's struggles, and children; achieve financial freedom through buying a house; reach the pinnacle, no need to work," most people, after learning about Zhang Fan's success story, choose to become "Cradle" annual members. The main functions include:

(1) "Shenfangli" teaches members step-by-step how to settle, choose, and buy a house, engage in sham marriages, crowdfund, apply for credit, and seek capital cushion companies, among other intermediary services.

(2) Using "Shenfangli"'s "Pareto Value" for fund-raising and lending activities.

(3) Advertising for recruiting partnership in housing equity can be displayed in the mini-program's square and property hall.

(4) Members can transfer their held housing "share portions" in the equity hall of the mini-program. The purpose of "Shenfangli" creating "Cradle Members" is to expand the membership through intermediary services and a large number of housing information transactions, raise large-scale cash flow from members, accumulate it into a "reservoir," and then profit from loans. All the above services charge corresponding intermediary fees, obtaining large liquidity.

Here, the upgrade fee for each "v+" member to become a "Cradle" annual member is symbolically represented as upgbb, which stands for "upgrade to baby member."

The income from the upgrade fees for each "v+" member to become a "Cradle" annual member can be formulaically represented as:

$$R_{Baby\ Membership} = epm * upgbb * year\ (Unit: Chinese\ Yuan)$$

Finally, although users who have become "Cradle annual members" are eligible to receive services, for each specific service received, users should provide a consulting fee each time. Here, the consulting fee for each session is symbolically represented as cstf, which stands for "consulting fee."

The income from each "Cradle" member's receipt of consulting services can be formulaically represented as:

$$\sum R_{Consulting\ Service} = epm * cstf * epm\ (Unit: Chinese\ Yuan)$$

Among them, the first "epm" refers to the number of consultations per user, while the second "epm" refers to the number of users. Although both are declared with the same symbol under the general premise, they do not have the same meaning. Therefore, they cannot be combined in precise and conservative calculations and can only be combined in magnitude estimations.

Summing up the aforementioned different nominal "qualification" fees, the total revenue formula for the "Shenfangli" platform regarding "qualification" fees is as follows:

$$R_{Aggregate\ Membership\ Fee} = \sum_{Membership=\ Offline}^{Baby} R_{Membership} + \sum R_{Consulting\ Service}$$

After expanding, we get:

$$\begin{aligned} & R_{Aggregate\ Membership\ Fee} \\ & = R_{Membership\ Offline} + R_{V+Membership} + R_{Baby\ Membership} + \sum R_{Consulting\ Service} \\ & = epm * jpf * year + epm * upgv + * year + epm * upgbb * year + epm * cstf * epm \end{aligned}$$

It can be seen that since the previously calculated formula was for the total revenue from qualifications, there are many "year" variables in it. To accurately calculate the qualification income of the "Shenfangli" platform for the year 2020, by dividing both segments of the formula by "year", we can obtain the calculation model formula for the "pyramid scheme"-style multiple qualification fee collection of the "Shenfangli" platform:

$$\bar{R}_{Membership} = epm * jpf + epm * upgv + epm * upgbb + \overline{epm} * cstf * epm$$

Among them, $\overline{epm}$ refers to the average number of consultations per user per year, and the epm in the formula, after simplification, can be understood as the number of users per person." Considering that the number of users changes every year and the number of users with different qualifications varies, it is not appropriate to simply extract epm as a common factor when making precise estimations for criminal law amounts. Only when using this model for financial scale estimations can variable consolidation be performed.

After statistics from multiple official reporting channels, the following data related to the suspected pyramid scheme" multiple qualification fees collected by the Shenfangli" platform for the year 2020 are listed as follows:

Table 1. Relevant data on multi-qualification fees on "SFL" platform in 2020

	Charge(yuan / person)	Payer of each item	Annual income
Online consultation	800	600	
Offline membership fee	1000	1000	
"V +" membership	3980	3000	
"Baby" membership	9800	3000	
Total amount			60,760,000

By inputting the data from Table 1 into the calculation model formula for the "pyramid scheme" multi-qualification fee collection, we can derive:

$$\bar{R}_{Membership} = 1000 * 7000 + 3980 * 6000 + 9800 * 3000 + 800 * 600 = 60{,}760{,}000$$

Under the guidance of the specific application model ideology of the Morohusi - C.Y. HU. Model, it can be estimated that the total membership fee for the year 2020 is around 60 million yuan. "Shenfangli" sets a high membership fee at different stages, and during the process of fans gradually becoming members, a hierarchical screening is conducted. The "four no's" real estate speculators, who have speculative mentality but possess some liquid assets, are targeted for membership screening. The number of people involved and the corresponding high membership fees become the main factors of the "profit" model.

3.1.2. The Profit Model of the "Pareto Value" Module

Another major revenue stream for the "Shenfangli" platform comes from the "Pareto Value" platform. The concept of "Pareto Value" is derived from the idea of "Pareto Optimality." Pareto Optimality, proposed by the Italian economist Vilfredo Pareto, is an ideal state of resource allocation. It assumes a given group of people and allocatable resources, and in the transition from one allocation state to another, at least one person is made better off without making anyone else worse off. The key idea is to pursue maximum utility with minimal cost, achieving a balance between fairness and efficiency. Therefore, it is commonly applied in game theory, engineering, and social sciences, with the aim of better and more rational resource allocation.

However, the "Shenfangli" platform deliberately misinterprets the concept of "Pareto Optimality" when teaching its "v+" members. Under the misinterpretation by "Shenfangli" staff, "Pareto Optimality" is explained as a concept similar to usury. That is, "cradle" members who have successfully crowdfunded to buy a house are encouraged to bring in new members to the "Shenfangli" platform, then transfer part of their property ownership to them, thereby earning the profit difference from the buy-sell transaction of the funds. Finally, all the income is invested into the "Pareto Value" platform, pooling funds with other "cradle" members to form a "funds reservoir" to help new members raise the down payment for buying a house. The interest rate of the "funds reservoir" is also very high, usually calculated on a daily basis, and the relevant information for calculating the interest is shown in Table 2.

Table 2. Pareto Value Interest Calculation

	Pareto value	Current bench mark interest rate	Deposit interest rate of several commercial ban ks	LRP
Annualized deposit interest rate formula = daily interest * 30 days * 12 months	4.2‰*30*12	\	\	\
Deposit interest rate (annualize d interest rate)	15.12%	0.30%	【1.5%,2.5%】	\
Return multiple = ("Pareto valu e" deposit interest rate (annuali zed interest rate) / respective d eposit interest rate (annualized interest rate))	\	50.4 times	6 times to 10 ti mes	\
Loan annualized interest rate fo rmula = daily interest * 30 da ys * 12 months	6‰*30*12=21.6%; 9‰*30*12=32.4%	\	\	3.85%* LRP= 15.4%
Loan interest rate (annualized i nterest rate)	Within the loan period: 21. 6%;Calculation of interest rat e beyond the loan period: 3 2.4% (negotiation)	\	\	\
Interest margin (daily interest margin)	Loan period: 6 ‰ - 4.2 ‰ = 1.8 ‰;The interest rate be yond the loan period is calcu lated as 9 ‰ - 4.2 ‰ = 4.8 ‰	\	\	\
Remarks	"Pareto value" before August 30, 2020: the maximum prot ection limit is only 24%, not usury	\	\	After August 30, 2020, "Pa reto value" ex ceeds 4 times of LRP, whic h is usury

From Table 2, it can be seen that within the "Shenfangli" mini-program, the "Pareto Value" attracts wealthy members with a daily interest rate of 0.042% (4.2‰), which is approximately equivalent to an annualized interest rate of 15.12%. This compares to the current interest rate of 0.30% in the benchmark interest rate for RMB deposits in China; the deposit interest rate range of many commercial banks in China is distributed between [1.5%, 2.5%], making the return multiple of the "Pareto Value" about 6 to 10 times higher than this range. The return rate and risk of an investment project are positively correlated, and people generally prefer liquidity, such as cash and cash equivalents, etc. The more control one has over the liquidity, the lower the risk; the longer the investment cycle, the slower the cash recovery, and the higher the risk variables, leading investors to demand a higher return on capital.

Considering that the "Pareto Value" requires wealthy members to inject funds into the "funds reservoir" under the guise of "short-term borrowing," with the shortest injection period being 15 days and the longest extending to several months, the daily interest rate for loans to members is 0.06% (6‰), which converts to an annual interest rate of 21.6%. If the loan period is extended, the daily interest rate increases to 0.09% (9‰), equivalent to an annual interest rate of 32.4%, both of which have exceeded four times the LRP (loan market quoted annual interest rate of 3.85%) at 15.40%. According to the "Provisions on Several Issues Concerning the Application of Law in the Trial of Private Lending Cases" issued by the Supreme People's Court in 2020 (hereinafter referred to as the "Provisions"), the interest rate on August 30, 2020, still followed the "two lines, three zones" approach, therefore the loan interest rate of 21.6% during the "Pareto Value" loan period is not considered usury, but the maximum limit for protected interest rate is only 24%. After August 30, 2020, it exceeded four times the LRP (loan market quoted annual interest rate of 3.85%) as stipulated in the "Provisions" (15.40%), thus the loan interest rate of the "Pareto Value" is considered usury.

For the "Shenfangli" platform, it promises a daily interest rate of 0.04% (0.4‰) to its "cradle" users, while the daily interest rate for loans to buyer members is 0.06% (0.6‰), therefore the profit margin it earns is the difference of 0.02% (0.2‰) per day.

$$\bar{R}_{Loan} = epm * \bar{x} * 0.2‰$$

Among them, $\bar{R}_{Loan}$ refers to the income that the “Shenfangli” platform can earn through interest rate spreads from external loans in one year, and $\bar{x}$ refers to the total amount borrowed by each user from the “Pareto Value” platform on average per year. Theoretically, $\bar{x}$ is a known constant, but considering that it was not disclosed at the time of writing this article, it is necessary to use the constant symbol $\bar{x}$ as a substitute.

3.2. The “Shenfangli” bottom-up “pyramid-shaped” capital flow model.

In the specific application of the Morohusi - C.Y. HU. Model, the second step of the financial behavior identification module is to recognize the capital flow characteristics of "Shenfangli." The "mentor system" is one of the methods used by "Shenfangli" to expand its membership. An existing member who recruits a new member to become a "cot member" can receive a platform coaching fee, ostensibly to assist the "new member" in quickly understanding "investment" knowledge. In reality, it is a reward for successful recruiters ("introductors") who bring in new members. Members who receive rewards for recruitment further develop downstream lines, and the overall capital flow is illustrated as shown in Fig. 4.

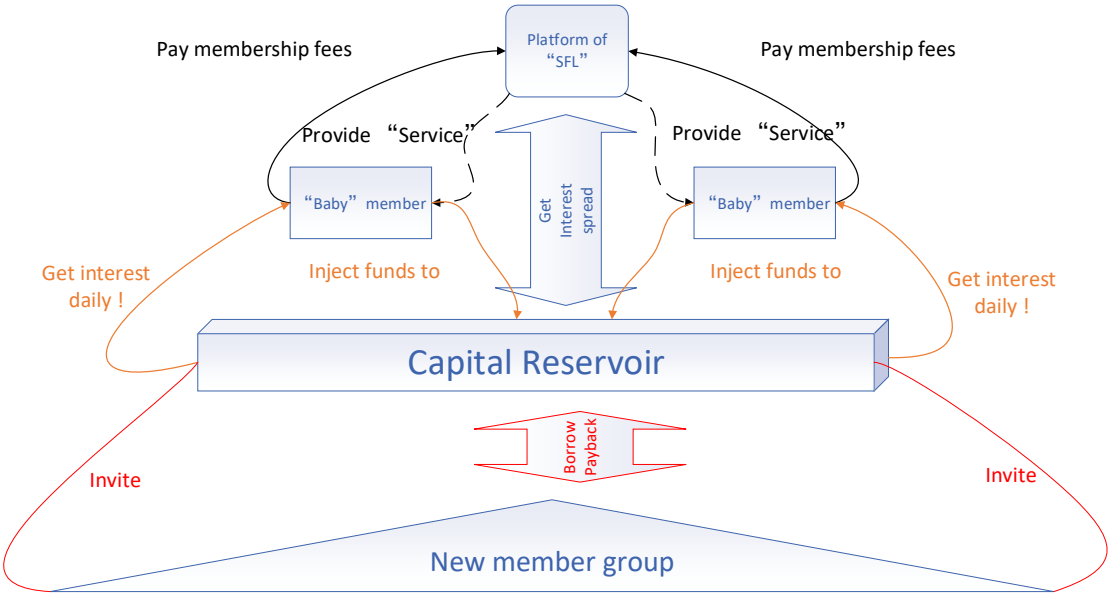

Figure 4. Capital Flow Model

From the diagram, it can be observed that the "Shenfangli" platform encourages the sale of house ownership shares to new members who joined due to the "mentor system," with the funds transferred into the "funds reservoir." The platform then earns money from new members through lending and interest. The new members' funds are not only handed over to the "Shenfangli" platform under the guise of "multiple qualification acquisition" but are also given to older members, namely the "cot" members, in exchange for accepting the house ownership shares sold by them. This gradually forms a pyramid-like capital flow, with funds starting to move from downstream members to the upper levels.

Therefore, merely from the financial behavior identification module of the Morohusi - C.Y. HU. Model, it is evident that the "Shenfangli" platform uses various nominal qualification fees and the "Pareto Value" module to concentrate funds from new members into the hands of the organizers—the "Shenfangli" platform and the "cot" members. Whether such actions constitute the crime of organizing and leading pyramid schemes hinges on the legality and validity of the house ownership segmentation and the "proxy holding" agreements recommended by the "Shenfangli" platform. If subsequent analysis by the financial behavior evaluation module concludes that these proxy holding agreements violate relevant regulations of our country's regulatory authorities and should be deemed invalid, then it can be considered that other proxy shareholders did not receive related goods or services after payment, thus fitting the characteristics of a "pyramid scheme" organization.

3.3. The Social Harm of "Shenfangli"

From the specific application of the Morohusi - C.Y. HU. Model, it can be seen that the distorted understanding of the concept of "Pareto Optimality" and the idea of securitization of divided house ownership are not applicable to the illegal fundraising form of private loans by "Shenfangli" and the relevant order of China's financial operations. Therefore, the "Pareto Value" in the "Shenfangli" mini-program misuses Pareto's optimality to create a pseudo-concept that absorbs members' idle money, attracting

potentially wealthy members with high-end concepts to believe that "Shenfangli" can maximize asset value, optimize wealth, and achieve the highest return rate, thereby creating a "funds reservoir" for lending business to members.

Therefore, the social harm of "Shenfangli" can be divided into the harm to members and the adverse impact on local property prices in Shenzhen.

3.3.1. The Harm to Members

For the losses incurred by members of the "Shenfangli" platform due to their participation in this "housing speculation farce," one can get a rough idea by referring to the income of the "Shenfangli" platform from absorbing members and engaging in illegal lending and other businesses.

For the total income of the "Shenfangli" platform, the following formula can be used for calculation based on the aforementioned analysis:

$$R = \sum R_{Membership} + \sum R_{Loan}$$

As for the income for the year 2020, after dividing both sides of the equation by "year," we get:

$$\bar{R} = \bar{R}_{Membership} + \bar{R}_{Loan}$$

Among them,

$$\bar{R}_{Membership} = epm * jpf + epm * upgv + epm * upgbb + \overline{epm} * cstf * epm$$
$$\bar{R}_{Loan} = epm * \bar{x} * 0.2‰$$

The aforementioned set of formulas is derived from the specific application model of the Morohusi - C.Y. HU. Model, which serves as the guiding principle for the calculation model of multi-channel fee collection for the “Shenfangli” platform.

From the perspective of financial modeling, due to the presence of the expression $\overline{epm} * epm$ in the multi-channel fee collection calculation model, when forecasting the profitability of the “Shenfangli” platform from a financial modeling standpoint, it can be concluded that the annual average total revenue $\bar{R}_{Membership}$ is positively correlated with the variable epm^2, namely:

$$\bar{R} \sim O(epm^2)$$

By setting epm to the sum of all user participation instances in 2020, which is 7600, we can roughly estimate the magnitude of $\bar{R}_{2020}$, namely:

$$\bar{R} \sim O(57{,}760{,}000)$$

It can be seen that the total revenue predicted by the multi-channel fee collection calculation model for the “Shenfangli” platform is roughly around 60 million yuan, which is not significantly different from the actual calculated value of 60,760,000 yuan. This also reflects, to some extent, the amount of membership losses behind the “Shenfangli” housing speculation farce.

3.3.2. Adverse Effects on Local Housing Prices in Shenzhen

The adverse effects on local property prices in Shenzhen, under normal circumstances, the interest spread earned by "Shenfangli" is 0.18‰ per day, which translates to an annualized interest rate of 6.48%. If members do not repay their loans on time, the interest spread earned by "Shenfangli" is 0.48‰ per day, which translates to an annualized interest rate of 17.28%, raising highly controversial legal compliance issues. Property prices are driven by market supply and demand, and market prices tend to converge towards the equilibrium point of supply and demand; under the policy guidance of "housing is for living, not for speculation," the rapid rise of property prices in first-tier cities is restricted, and the scrutiny of mortgages for second-hand homes is strictly limited, leading to a decline in the number of second-hand home transactions and a decrease in the proportion of residential demand. As the fair transaction price of second-hand homes declines, the upward trend in housing prices will weaken, and the profit threshold for selling homes in the future will continue to tighten. Housing prices will continue to rise, and perhaps the arrival of a "Minsky moment" will eventually become inevitable.

4. Conclusion

For the establishment of a criminological model for statutory crimes including financial crimes, criminologists still summarize the characteristics of statutory crimes based on the temporal and spatial characteristics of natural crimes, while neglecting the challenges in identifying and qualifying the criminal behaviors of statutory crimes such as financial crimes. This paper proposes an abstract model named the Morohusi – C. Y. HU Model, and conducts a judicial practice analysis on the "Shenfangli" platform.

Through demonstration and model application, the financial behavior analysis module concludes that its capital flow exhibits a "pyramid-shaped" characteristic from the bottom up, and calculates the detailed profit amounts; meanwhile, the financial

behavior evaluation module suggests possible convictions, recommending that the crimes of illegally absorbing public deposits and organizing and leading pyramid schemes be punished concurrently. Therefore, the abstract model has a certain universality in the field of financial crime behavior identification and analysis, and can establish different specific application models based on specific cases. The behavior analysis and evaluation of statutory crimes including financial crimes conform to scientific principles, featuring analytical effectiveness and qualitative accuracy, making the conclusions more convincing.

Of course, the Morohusi – C. Y. HU Model proposed in this paper is only for the modeling analysis of financial crime behaviors, and does not offer suitable insights for other statutory crimes, nor does it propose a model applicable to the behavior identification of all statutory crimes. Therefore, its scope of application still has certain limitations. It is believed that the next stage of research will solve the problem of these limitations.

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