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# 新股发行定价

基于壳资源的解释和证据

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## 摘 要

新股定价问题一直是我国新股发行制度理论研究和证券市场改革的重点和难点，也是一级市场和二级市场的非均衡矛盾的集中体现。但长期以来，相关研究停留在政策设计或实践检验两个层次，能将理论和实践结合起来的研究成果极为少见。有些零星的研究成果也主要是用西方成熟的理论对我国市场进行检验，还没有基于我国市场特定约束条件下的理论和实践结合的成果。

国外的实证研究表明，成熟证券市场存在新股发行短期低估和长期高估双重特点。在我国，新股首次发行（IPO）定价短期低估程度远高于西方市场水平，而对于新股长期收益高估程度的研究存在不同结论。而且对我国新股长短期的价格行为的解释都基于西方传统的理论假说，至今尚未有针对我国证券市场特殊的制度背景给出的具有说服力的解释。现在已有的解释较为零碎，不同解释之间难以达成共识，同一作者的研究也很难对新股价格的短期行为和长期行为给出共同的解释基础。

本书研究目标是在考察现有新股收益率计算方法的基础上，用大样本检验新股短期低估的程度以及长期高估现象的不明显程度，并用我国证券市场政府管制的特殊产物——“壳资源”对此

作出合理的一致解释，从而为我国新股合理的定价提供理论基础。同时，本书还从政府干预新股定价合理性的角度进行了探讨，引出市场化定价改革成功的约束条件，为市场化定价机制设计提供参考。

本书基本思路是，首先进行文献评述，指出现有研究的不足主要是缺少基于中国制度背景的合理解释；其次论证壳资源价值的存在是我国证券市场的重要特点，界定壳资源概念，提出壳资源的主要代理变量是发行规模、蜜月期（发行到上市的时间间隔）、发行年度、行业、中签率等，并用多元回归证明：企业的盈利水平、资本结构等不能解释首日收益率偏高现象，而上述壳资源代理变量可以作出较好解释。接着对审批制和核准制下壳资源的价值表现作了实证研究和对比。再分别用二年期、三年期、五年期累积收益率与壳资源代理变量进行回归检验，证明壳资源代理变量可以解释新股长期价格行为。在此基础上论证现有主要定价模型在中国的适用性较差的原因是没有考虑壳资源的特殊影响，同时证明政府对新股定价的管制在信息不对称的条件下具有合理性。最后指出壳资源的存在具有阶段性，市场化定价模型应该是壳资源各代理变量作用归零的结果，最后就市场化定价机制设计给出建议。

本书共分为五章。

第一章是全文的铺垫。首先提出了企业融资周期假说，认为新股首次发行是多数企业法人融资阶段的开始，并对企业在风险中性和风险偏好两种假设条件下新股融资决策的内容和供求均衡进行了深入分析。其次系统介绍了国外成熟市场新股发行制度框架，以及我国新股首次发行程序、发行方式和定价方法。

第二章首先较为系统地介绍了美国新股发行的基本数据和特征，以及我国的新股发行基本数据。然后回顾了国内外现有相关研究成果，对 IPO 过程的利润操纵、IPO 过程的短期和长期价格

行为以及 IPO 周期性的研究成果进行了较为全面的综述。

第三章对壳资源进行界定,认为壳资源是指上市公司的上市交易资格。并把壳资源分为上市壳资源和公司壳资源,这两种壳资源都具有市场价值,实行“直通车”制度的上市公司两种壳资源合二为一。上市公司壳资源产生于以发行审批制、发行额度制和发行上市“直通车”制度为核心的证券市场管制,是政府干预证券市场的结果,在证券市场制度转轨过程中长期存在。企业通过寻租在一级市场上获得发行上市资格,就可在二级市场获得极高的收益,正因为如此,拟上市公司就会调动资源进行非生产性的寻利活动即“寻租”,只要取得发行资格的收益大于寻租成本,这种活动就不会停止。其次本章还对壳资源特性及其与相关范畴的关系进行了评述,从供给和需求两个方面对壳资源价值的决定和影响因素进行深入分析,横向比较了壳资源在各国市场的表现,纵向分析了壳资源价格的演变过程,最后指出了现有关于壳资源研究的不足。

第四章用 2000 年前上市的具有完整数据的样本公司进行回归检验。通过理论分析,选取了壳资源稀缺程度、蜜月期变量、发行规模、新股申购中签率等壳资源价值代理变量,发现:①随着年度推移,上市公司壳资源数量增加,壳资源稀缺程度减少,导致首日收益率下降。②新股发行具有“小公司效应”,发行规模在 1% 的显著水平上与首日收益率负相关,表明大公司上市后新股的上涨幅度低于小公司。这支持不同规模公司壳资源价值相等,小公司单位壳资源价值较高的假说。③新股发行到上市的时间间隔越长,折价程度越高。④中签率与首日收益率在 1% 的水平上显著负相关,说明中签率越高,首日收益率越低;中签率越低,首日收益率越高。

第五章对新股长期收益进行系统研究,发现:①由于壳资源价值平台的作用,新股发行两三年内的长期收益与市场总体水平

没有系统性差异，新股高估现象不如成熟市场明显。②公司规模与三年累积收益负相关，且在 1% 的水平上显著，说明规模小的公司受到市场的持续追捧，这与市场投机气氛和庄家炒作有关。③蜜月期与三年累积收益正相关，且在 5% 的水平显著，表明投资者持有时间越长，承担风险越大，要求长期收益也越高。④新股长期收益与首日收益率呈负相关关系，但统计上并不显著，说明信号理论<sup>①</sup> 在中国缺乏较强解释力。也表明在实行按市值认购之前，一级市场和二级市场的投资者的结构性差异和相对分割状态。

第六章分析了我国新股发行核准制引入的过程和核准制下壳资源价值的表现。通过选取审批制和核准制样本进行比较分析和多元回归分析，得出核准制下壳资源仍然存在并且对新股定价有重要影响的结论。而且与审批制不同的是，核准制下新股发行价格和中签率对新股首日收益率有重要影响，表明市场化定价初见成效。

第七章将新股定价过程归结为政府、发行公司、投资银行、投资者四个主体的博弈和价格发现的过程，指出现有新股发行定价是一种行政干预下实现的混合均衡，即发行价格无法反映公司的优劣。进一步指出在信息不对称的前提下，根据 Akerlof (1970) 的“柠檬理论”，市场将完全失效，此时，新股发行中的限定市盈率、控制发行规模等行政性干预措施成为必然的合理选择；但行政定价是一种非帕累托均衡，弱化了证券市场的资源配置作用，信誉机制的建立是实行新股发行市场化的关键。最后对市场化定价成功的约束条件进行了深入分析。

本书主要创新之处是：

(1) 首次使用反映中国特殊制度安排的壳资源价值概念来解

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<sup>①</sup> 该理论认为发行公司在首次发行时压低价格是为了获得投资者认同，有利于后续发行。

释新股短期和长期价格行为，得出符合中国制度特点的合理解释，避免国外传统假说对中国证券市场解释乏力和牵强的不足。与此同时，中国现有关于新股定价的解释较为零乱，对短期价格行为的解释主要引用西方理论，对长期价格行为的解释则仁智互见，难以达成共识，与短期价格行为的解释不一致甚至出现矛盾。本书用壳资源假说把新股短期和长期价格行为联系起来给出共同的解释基础，对新股定价“不准”的问题进行了全面、明确的解释。

(2) 新股行政性定价受到理论界和实务界广泛的批评，认为应该尽早取消行政性定价。本书运用信息经济学的研究方法，从信息不对称角度重新论证壳资源形成过程实际上是多主体博弈的结果，新股行政性定价机制的引入是政府为了避免发行市场“信息陷阱”的合理选择，它能保证新股发行成功，但导致新股发行的混合均衡，牺牲了资源配置效率。新股定价市场化改革可以实现分离均衡和资源配置的双重目标，但必须考虑到实现的约束条件，笔者就此给出了理论化的政策建议。

(3) 国内外有关新股定价的研究在计算首日收益率的基本方法上是用二级市场首日收盘价和一级市场发行价的百分比来表示，但忽略了蜜月期的影响。本书提出了用蜜月期市场指数对收益率进行调整以消除股市行情影响的方法，指数调整首日收益率更能合理反映新股的收益水平。

(4) 对壳资源价值问题提出了规模影响因素，认为不同规模的公司壳资源价值相同，每股壳资源价值等于壳资源价值除以股数。因此小公司的壳资源价值的影响较大，这也部分证明了小公司首日收益率和长期收益率较高的原因。

本书主要不足和需进一步研究的问题是：

(1) 书中提出了国内外壳资源价值因素的不同影响，认为西方成熟市场仍存在壳资源价值，而公平的市场准入制度导致壳资源不能带来超额收益，可以认为是壳资源影响因素通过套利归零

的结果。这方面的理论研究和中外证券市场的对比研究还需进一步深入。

(2) 本书积累了壳资源价值影响新股价格行为的若干证据,但还需进一步建立包含壳资源价值因素的新股定价模型,并进一步形式化,为实证研究提供更为坚实的理论基础。

(3) 从实证研究角度,应该在追求大样本检验基础上深入,进一步控制行业、规模、市值账面价值比等影响因素,以期更精确地度量壳资源对新股价格行为的影响程度,同时还需检验核准制引入对壳资源价值的影响程度和影响方式。

(4) 从博弈论角度考察新股定价过程中的主体行为还需进一步深入。

**关键词:** 企业融资周期 新股发行 短期折价 长期高估  
实证研究 壳资源价值 博弈过程 信息不对称 新股行政定价  
市场化定价

## Abstract

The new issue pricing in China's stock market has been the emphasis of the theoretical research and the reform of China's security market. And new issue pricing is also the centralized embodiment of the non-equilibrium between the primary market and the secondary market. For years, however, the relative research findings have been staying on the either policy designing or empirical verification. The researches unifying theory and practice are to a great extent rare. Related research mainly tests the adoption of western mature theory with China's security market data. In one word, there is still no research unifying theory and practice subject to specific characteristics of China's security market.

The overseas empirical studies manifest that western mature security market has the dual characteristics, namely, the short-term stock new issue underpricing and the stock issue overpricing in the long-term. In China, the underpricing degree of Initial Public Offerings (IPO) is significantly higher than that of western security market. On the other hand, as for long-term return of new issue, there



are different conclusions. Presently, all explanations for the short-term and long-term pricing performance of China's new issue rely upon western traditional theory hypothesis, which, so far, cannot make convincing explanations based on the specific institutional background of China's security market. Thus, those available explanations are relatively scattered and even those explanations also cannot make an agreement.

The purpose of the article is designed as follows: On the basis of checking on the computing methods of Initial Return of new issue, the author verifies the degree of new issue short-time underpricing phenomena as well as the insignificance of long-term overpricing phenomena with large scale sample, and tries to make an agreeable explanation by the special product - shell resource, which stems from administrative regulation on China's security stock. As a result, the author provides a theory basis of new issue pricing in China's security market. Simultaneously, the article, by researching into the justifications for governmental intervention, educes the constraint conditions for the success of market - oriented pricing reform, and thereby provides some suggestions for market - oriented pricing mechanism.

The basic clue of the article is as follows: Firstly reviewing the available literatures and pointing out that the present researches mainly lack of the reasonable explanations subject to China's system background; Secondly demonstrating that the existence of shell resource is an important characteristic in China's security market, and defining the concept of shell resource, and putting forward that proxies for shell resource consist of the scale of issue, honeymoon period<sup>①</sup>, list-

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① Honey Moon refers to the period between new issue and listing.

ing years, industry, and rate of lottery, and so on. We also demonstrate with multiple regression that the shell resource can better clarify the Initial Return (IR) while neither profit ratio nor capital structure can; Thirdly, demonstrating that proxies for shell resource can explain new issue long-term pricing performance by the regression verification of two - years, three - years as well as five - years' Accumulative Average Return (CAR) respectively combined with proxies for shell resource; Fourthly illustrating that the reason why the available pricing models have weak explanation power while ignoring the special influence of shell resource, and partly justifying governmental intervention on new issue pricing under conditions of information asymmetry; Finally pointing out that the existence of shell resource is the product of immature security market, and indicating that market - oriented pricing models should be the result that proxies for shell resource equals to zero, and making some suggestions for the establishment of market - oriented pricing mechanism

The article consists of five chapters. Chapter one is the preface of the article: Firstly putting forward corporate financing hypothesis which claims that the new stock issue is the beginning of public corporate financing, and then systematically analyzing corporate financing decisions on new issue, and simultaneously making an equilibrium analysis on supply and demand; Meanwhile, systematically introducing the procedure, mode, and pricing methods of new issue both in foreign countries and China.

Chapter 2 comprehensively reviews and summarizes fundamental proofs both in US and China, then reviewing the domestic - and - overseas research findings including profit manipulation before IPO, short - and - long term performance of IPO's, and periodicity of

IPO.

Chapter 3 defines the shell resource as the qualification only owned by listing companies and divides shell resource into two sorts, namely, listing shell resource and corporate shell resource. Listing shell resource and corporate shell resource both have market value. The companies taking “Through Train” mechanism effectively combine both of them together. Shell resource of the issuers stems from the restriction and management in security market centered on governmental ratification system, quota system, “Through Train” system, which results from the governmental interference. It will remain for long time in the course of economic transformation. Once permitted to come to primary market through rent-seeking, the issuers can obtain profitable interests in secondary market. Thereof, potential issuers will use resource to seek for nonproductive profit, which is rent-seeking. It won't grind to a halt unless issuing profits are bigger than rent-seeking costs. Chapter 2 also comments on the relationship between shell resource and correlative categories, and makes an in-depth analysis of shell resource from the perspective of demand and supply respectively, and makes a longitudinal study of evolution of shell resource value, and finally points out the deficiency on shell resource research.

Chapter 4 tests integral data of the companies which are listed before 2000 with regression method. Through theoretical analysis, the author selects the following factors as proxies for shell resource: SCARCE (the scarcity variable for the shell resource), GAP (time intervals between issuing and listing), IPO SIZE (initial public offering size), and the rate of lottery, and the like. Conclusions are as follows: (1) with years passing and the increasing amount of shell re-

source, scarcity degree is lower and lower. This gives rise to the decrease of IR; (2) IPO underpricing has "small capitalization effect". Scale is negatively related to IR at the significance level of 1%, which indicates rise - up to new issue of bigger firm after listing is lower than that of smaller one. This fact is on the side of hypothesis that shell resource with different firms' scale are the same and shell resource per unit in smaller firm is higher; (3) the larger gap is, the higher the underpricing will be; (4) at the level of 1%, rate of lottery is obviously negative related to IR. It shows that the higher the rate is, the lower IR will be, vice versa.

Chapter 5 makes a comprehensive study of long-term yield of new issue. Conclusions are as follows: (1) it is due to the shell resource that there is no systematic difference between two - or - three years' accumulated yields and those of security market. The overpricing phenomenon in China's security market is less significant than that of mature security market; (2) scale is negatively related to 3 years' accumulated yields at the significance level of 1%, which indicates that smaller companies are continuously supported by security market. This is related to the speculative atmosphere and big dealers' manipulation; (3) intervals between issuing and listing are positively related to 3 years' accumulated yields at the significance level of 5%, which indicates that higher IRs can be considered as a compensation to investors in the primary market for their risk and waiting; (4) long-term yield of new stock is negatively related to IR, but statistically insignificant, which indicates that investment bank lacks of the motivation of marketing under conditions of governmental regulation, and which also shows the difference between investors in primary market and those in secondary market before implementation of market - val-

ue contribution.

Chapter 6 analyzes the process of adoption of authorizing system instead of approval system as well as the value of shell resource. We draw a conclusion that under the authorizing system, the value of shell resource still exerts significant influence on the IPO price movement through comparison analysis and regression. The difference between the approval system and authorizing system is that the new issue price and lottery rate are statistically significantly related to the initial return under authorizing system. However these variables are not significant under approval system. This suggests that the market-oriented reformation begin to work.

Chapter 7 attributes the new stock pricing to the gaming process among government, issuers, investment bank and investors. It points out that existing new stock pricing is a kind of mixed equilibrium, namely, issue pricing cannot reflect factual profit level of companies. To put it further, under conditions of information asymmetry, according to Akerlof (1970)'s "Lemon Theory", market will become ineffective while administrative intervention measures such as P/E ratio, the control of stock issue scale become necessary. However, government-set price is non-Parcto equilibrium and softens the market-set pricing function. The foundation of credit mechanism is the key to marketable pricing of new issue. In the last part of chapter 7 the author makes a deep study of the successfully limited conditions to market pricing.

The innovation of the article is as follows:

(1) For the first time using shell resource to explain long- and-short term pricing performance of new stock issue, educing the reasonable explanations in accordance with Chinese characteristic system,

and avoiding the weakness and deficiency of foreign traditional hypothesis in explaining China's security stock. Meantime, China's existing explanations for new stock issue pricing are unsystematic. The explanations for short-term pricing performance mainly rely upon Western theory. The explanations for long-term pricing performance are diverse and hardly come to agree with one another. At the same time, the explanations for long-term pricing performance are inconsistent with or in conflict with the explanations for short-term pricing performance. The article uses shell resource hypothesis unifying short- and long-term pricing performances to make common explanations for inaccuracy of new issue pricing.

(2) Theorists and professionals criticize administrative intervention on China's IPO pricing and suggest cancellation of governmental intervention on IPO pricing. The article takes the research approaches of information economics to re-demonstrate that the establishment of shell resource is the result of "game playing" of multiple parties. Administrative intervention on new stock issue pricing is a reasonable choice by government in order to avoid issuing market's "Information Trap". It ensures the success of new stock issue, but leads to mixed equilibrium and the loss of efficiency of resource allocation. Considering the constraint conditions, market-set pricing can fulfill the dual aims, namely, separated equilibrium and allocation of resource. Because of this, the author makes some theoretical policy suggestions, and explains necessity and rationality of administrative intervention on new stock issue pricing, and educes the constraint conditions of market-oriented pricing.

The domestic and overseas researches on new issue pricing use the following method to calculate IR: IR equals to the percent return

between the issuing price and the first closing price in the secondary market. However, the method ignores the influence of honeymoon. The article uses honeymoon index return to adjust and eliminate the influence of market index. IR adjusted by index is more reasonable to reflect return levels of new issues.

(3) The article uses issue scale to clarify shell resource value, and believes the companies with different scales have the same shell resource value. The unit shell resource value equals to shell resource value divided by the issue scale. Consequently, the unit shell resource value in smaller firm is higher than that in larger one. It is the basic reason that IR and long-term return of smaller firm is higher than bigger one.

The deficiency and problems of the article that need further research are as follows:

(1) The article puts forward that the influence of shell resource. Although there is shell resource value in western mature market, it cannot bring extra income because of fair ingression system. To put it further, that the influence of shell resource equals to zero as the result of arbitrage. This needs further theoretical research and more comparisons between domestic and oversea security markets.

(2) The article accumulates a majority of evidences that shell resource influences new issue price performance, but still needs to set pricing models including shell resource value and make them formalized to provide robust theoretical basis.

(3) From the perspective of empirical study, it demands more details on the basis of large sample, and controls influencing factors such as industry, issue scale, market value-to-book value ratios in order to accurately measure shell resource's influence on new stock

issue, and it also needs to check on the degree and ways of influence of ratification system on the shell resource value.

(4) From the perspective of "game theory", it still needs to further investigate the individual behaviors during the process of new issue pricing.

**Keywords:** Corporate Financing Cycle, New Issue Underpricing, Long-term Overpricing, Empirical Study, Shell Resource Value, Game Theory, Information Asymmetry, Administrative Pricing of New Issue, Market-oriented Pricing



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