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Determinants of Funds Demand and Supply; Deepening Finance Access of Real Estate Investment in China

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Abstract. This huge gap between financing needs and the available financing capacity represents major constraints to growth opportunities in business financing, and accords with one of requirements strategy of stimulating real sector financing by mobilizing cheap long term saving. Real estate investment is a capital intensive venture and this implies that firms venturing into this sector need to have a strong capital structure to sustain development. There is high competition amongst the real developers in quest for funds from formal and informal sources to meet their financial needs. Many real Estate firms are experiencing a credit fix. In the recent move by the Peoples Bank of China to clamp down lending in the real estate sector; the People's bank of China tightened monetary policy by raising interest rates which in effect lead to increased cost of capital. The central government has also encouraged banks to adopt slow lending to real estate projects. According to the People's Bank of China (PBOC), the increase in cumulative loans related to housing projects totaled ¥1.3 trillion ($198 billion) in 2011, down 38 percent from 2010, and new loans to the property sector comprised 17.5 percent of total loans in 2011, down from 27 percent in 2010.The remaining prudent alternative is innovation for exploitation of other means of acquiring funds for real estate venture. Real estate investors need to deepen and broaden their options of financing their activities to avoid credit squeeze.

Keywords: Real Estate investment; Fund demand; fund supply; financing.

Introduction

Real Estate investment is an important and major key driver for China's economy. Real estate sector has been considered as the pillar industry of national economy and the precondition to realize China's 11th Five-Year Plan (2006-2010). The whole country, especially the local governments tried every method to encourage real estate development which stimulates the investment in real estate industry. The real estate investment is one of the pillars of the Chinese economy and its development has fueled the economic growth and promoted a restructuring of the economy (Chen, Guo, and Zhu, 2009). The total real estate investment goes up year by year. Besides, the total real estate investment account for a very large share of China's GDP, and the proportion is still increasing now. real estate industry include four major parts: real estate investment and development, real estate consulting, real estate appraisal, and property management. But its directly related industries are more than 60, such as construction sectors, chemical industry(paints, oil, etc), raw materials industries (stone, steel, concrete, wood), electricity sector, financial sector, advertisement industry. These related industries can promote national and local economic development and can also help millions of people employed and reemployed (Wang 2002, Chen 2006).

Now, China's real estate industry is treated as one of the pillar industries in the national economy (Huang 2011) holding same position as Chen, Guo, and Zhu, (2009). Real estate investment has been the most important engine which has stimulated the Chinese economy during recent years. The real estate industry ranked third in terms of global real estate spending and will

soon be second only after to the United State (Ling and Lim, 2007). Although there are some doubts on how sustainable China's high GDP growth is, it is believed that the real estate industry will be less affected since China still need large amounts of basic infrastructure and facilities.

People use real estate for a wide variety of purposes, including retailing, offices, manufacturing, housing, ranching, farming, recreation, and entertainment. The success or failure of these uses is dependent on many interrelated factors: economic conditions, demographics, transportation, management expertise, government regulations and tax policy, climate, and topography. The objective of those engaged in the real estate industry is to create value by developing land or land with attached structures to sell or to lease or by marketing real estate parcels and interests. The real estate industry employs developers, architects, designers, landscapers, engineers, surveyors, abstractors, attorneys, appraisers, market researchers, financial analysts, construction workers, sale and leasing personnel, managers, office support workers, and building and grounds maintenance workers (Yang 2000).

China's real estate boom has attracted a great deal of attention in recent years from investors and policy makers alike. For investors the real estate market offers profitable business opportunities, with housing emerging as one of the best long-term investment opportunities in China over the past decade. From a policy perspective, however, the rapid fluctuation in prices poses risks. There are various factors behind the boom of real estate investment sector apart from the price incentive, these factors are; the fast development of the Chinese economy, large domestic demand, the rapid urbanization process, government's stimulation policy, and real estate speculation.

LITERATURE REVIEW

Real estate is a legal term that refers to things that are immovable such as land and anything fixed or permanently affixed to the land, such as buildings, sheds, roads and trees. However, some people prefer to use the term real estate as ownership rights over real estate which can be bought, sold, and leased. This is also called real property or realty. In order to generate capital gain through price appreciation and rental income from tenants, real estate investment involves not only purchase and sale of real estate, but also ownership, management and lease of real estate. (Brueggeman & Fisher, 2008, p.2).

Over the past decade, mainland China's real estate market has gone through a remarkable transformation. Unprecedented rates of urbanization, huge infrastructure development and integration with the world economy, have gone hand-in-hand with the rapid development of its real estate industry. The speed of change has been astonishing. Ten years ago China's Tier I cities had the characteristics of 'emerging' markets – both Shanghai and Beijing had poor transparency, no actively traded commercial real estate investment market, double-digit investment yields, low levels of Grade-A commercial stock and most multinational corporations in only small representative offices. Today, China's real estate market is consistently in the global spotlight – it has the world's fifth most active real estate investment market, its Tier I cities are home to a sizeable stock of international-grade commercial buildings, virtually every major MNC has an active presence and a growing number of domestic corporations are making their mark. Yet China's advance up the global rankings has not just been based on activity, but also on its progress toward 'property market maturity' and, while many analysts maintain that China's economy is still categorized as 'emerging', Jones Lang LaSalle believes that, from a property market perspective, China's Tier I cities are fast tracking to maturity. One of the key measures of city competitiveness relates to a city's external relations to others with regard to trade, capital flows and corporate activities. The more connected a city is, in terms of physical and business networks, then the better it tends to perform. Over the past decade, Chinese coastal cities have become well-connected with the global economy and financial flows have increased significantly. However, China has only recently moved into the top league in terms of international real estate capital market activity. In 2010 China has become the world's fifth most active real estate investment market, and both Shanghai and Beijing now feature among the world's most liquid markets. This has been achieved largely on the back of domestic investor activity, with only US$17 billion of direct commercial real estate investment coming from overseas during the last three years. For many international investors the risk of doing business in China is still too great. How much China really wants inward investment will influence what happens next. Shanghai and Beijing already have a substantial corporate base with virtually every major MNC now represented, as well as an ever growing

presence of emerging Chinese corporations. As the hubs of the world's second largest economy in the fastest growing region of the world, the potential for these cities to move further up the global business hierarchy is enormous. Shanghai and Beijing will 'matter' as cities regardless of what happens in the rest of the world because of the significance of their roles in China. Each city has a clear role – Shanghai as China's pre-eminent commercial, financial and logistics hub and Beijing as the administrative, educational and technological hub. The world continues to watch in awe as transportation and connectivity rapidly improves in road, rail, air and sea – this will help both cities to leverage growth in the domestic economy. The recent expansion of Shanghai's domestic Hongqiao airport and nearby Transportation Hub and the forthcoming completion of the Shanghai–Beijing High Speed Rail (slated for early 2012) represent significant events in the integration of China's primary cities with its domestic economy. The real estate developers are executing their project very rapidly, but the pace at which they are executing is creating a mismatch between the project development and ready sources of financing channels creating a lag in the process.

In recent years, the national supervisory department has formulated additional measure regarding the financing conditions of RE Investors for loan applications from banks. Therefore, most developers were locked out of the old financing patterns till they adjust to the new requirements, hence the financing options became the biggest challenge to the RE industry. The RE investors started to look for the new financial innovation products beside the bank loans. Currently, the proportion of the owners fund from real estate developers is minimal relative to the entire financing structure; a significant proportion is funded by the bank. Bank loans account for approximately 60%. Han, (2008）shares this position stating that In the whole capital chain, bank loan account for at least 55% to 60%, some even more than 90% as a main source of financing for real estate developers. Nearly all peripheral processes on real estate developing including land purchases, sales and purchases must involve bank loans. These forced the central Bank of china or People's Bank of China to re examine the level of exposure of the financial system by the real estate sector of which they implemented the policy - "Notice about further strengthening the financial management of real estate credit" (policy 121). The policy detailed the many challenges dominant in the real estate financing.

Wang & Hu, (2004) found out that In Hong Kong, there are numerous financing options for real estate i.e direct and indirect financing options. The direct option is bank loan, and interestingly in what is called *guanxi* in China, real estate companies and banks in Hong Kong have tight relationship. The indirect methods are other innovative financing options such as REITs, CMBS, ABS and so on. After the Asian financial crisis, the innovative financing options proved to be very crucial, till now some innovative financing options for real estate have developed very satisfactorily. Hong Kong has become competitive in finance product innovation, these financing options of real estate can be adopted by Chinese real estate companies.

For America, they have wider options of Financing and an additional feature of operating the asset different from china. As Jiang (2007)pointed out In China, the developers usually develop to sell, not to possess because to develop commercial real estate needs large capital outlay and the current financing system and regulations of China prohibit developers from possessing the properties for long durations, mostly approximately 70%-80% capital in form of bank loans and they are usually short-term, because of mismatch of loan maturity and duration over which they can operate the asset to generate cash flows, so they need to honor their contractual obligation when it falls due. In America, 10% of the capital for developing commercial real estate comes from banks, 90% of the capital comes from the developers' own fund and other funds from investors. The low proportion of bank financing and high proportion of other funds financing reduce the risk of developers.

Jiang, (2007) goes ahead to record that In America, the developers of commercial real estate not only consider the sale of the properties, but also the operation of the properties, they would have detailed plan about the development, operation, management and disposal. Most developers would opt to possess the properties after developing them, which can reduce the risk of investors because the developers of commercial real estate would not only consider development of these properties, but also the operation.

CAPITAL STRUCTURE

Myers (1984) focuses on two perspectives on corporate debt. He refers to the hypothesis that firms balance tax savings from debt against deadweight bankruptcy costs the trade-off theory. He conotates the hypothesis as such, due to adverse selection, firms first consider retained earnings, then debt, and only in extreme circumstances to equity for financing the pecking order theory. He goes ahead to explain that due to adverse selection, firms prefer internal to external finance. When outside funds are necessary, firms prefer debt to equity because of lower information costs associated with debt issues. Equity is rarely issued. Shyam-Sunder and Myers (1999) fine tuned idea into a testable and verifiable by stating that financing deficit should normally be matched dollar-for-dollar by a change in corporate debt. As a result, if firms follow the pecking order, then in a regression of net debt issues on the financing deficit, a slope coefficient of one is observed. The pecking order theory derives much of its influence from a view that it fits naturally with a number of facts about how companies use external finance. Myers (2001) reports that external finance covers only a small proportion of capital formation and that equity issues are minor, with the bulk of external finance being debt. The pecking order theory is from Myers (1984) and Myers and Majluf (1984).

Since it is well documented, we can summarize. For instance, that there are three sources of funding at disposal to firms: retained earnings, debt, and equity. Retained earnings have no adverse selection problem. Equity is subject to serious adverse selection problems while debt has only a minor adverse selection problem. From the point of view of an outside investor, equity is strictly riskier than debt. Both have an adverse selection risk premium, but that premium is large on equity. Therefore, an outside investor will demand a higher rate of return on equity than on debt. From the perspective of those inside the firm, retained earnings are a better source of funds than is debt, and debt is a better deal than equity financing. Accordingly, the firm will fund all projects using retained earnings if necessary and possible. If there is an inadequate amount of retained earnings, then debt financing will be used. Thus, for a firm in normal operations, equity will not be used and the financing deficit will match the net debt issues. The pecking order theory (POT) was originally suggested by Donaldson (1961) and further developed by Myers (1984) and Myers and Majluf (1984). The theory has been tested by Hughes (1994, 2003) and Myers and Sussman (1999, 2003). The theory studied the hierarchy of adopting alternative financial sources out of those that are available, under imperfectly informed markets. The theory suggests that firms have a ranking of preferences of financial sources. The trade-off theory of capital structure was formulated around the concept of target capital structure that balances between the benefit of debt-tax shields and cost (excess risk taking by shareholders) of debt financing.

According to Myers (1984) there are at least two key implications of these theories. The key implication of the trade-off theory being that leverage exhibits target adjustment so that deviations from the target are gradually eliminated. The key prediction of the pecking order theory is the strict ordering of financing. Myers presents these two theories as broad organizing frameworks that can potentially help account for many facts.

DEMAND OF CREDIT

Currently, real estate development in China is heavily reliant on bank loans mainly in the form of land bank loans, real estate development loans and housing mortgage loans, The financing needs have been growing rapidly especially since 2005. The Chinese bureau of statistics estimate that the current fund gap in the real sector to stand at about 1.8 trillion RMB.

SUPPLY OF CREDIT

The slope of the supply curve of finance is proportional to the marginal information costs between the firm and suppliers of external funds. In other words, "in the presence of incentive problems and costly monitoring of managerial actions, external suppliers of funds to firms require a higher return to compensate them for these monitoring costs and the potential moral hazard associated with managers' control over the allocation of investment funds.

China's financial system has a total assets of on average 72 trillion yuan, Commercial banks having the pie at 65 trillion yuan, followed by Insurance 4 trillion yuan then Trust Industry 2 trillion yuan, finally securities companies only 10000 Billion yuan, As at the end of June 2013 the Outstanding real estate trusts in China hit 695.3 billion yuan; the property trusts' financing only accounts for 6.1 percent of the banking industry's total funding for the real estate sector and 12.6 percent of the entrusted assets of Chinese trust companies which is very low compared to over 60% of loan portfolio offered by banks.

REAL ESTATE FINANCING IN CHINA
Introduction

China has witnessed a rapid development of its real estate sector during recent years. However, commercial banks which used to take a dominant role in financing real estate development and sales are seeking to diversify their loan business away from property exposure for risk management purposes. Coupled with the central government announcing credit-tightening measures, this means it is becoming more and more difficult for property developers to seek funding from commercial banks and many real estate development projects are running short of capital. After the financial crisis broke, sourcing funds became the top problem in China's real estate sector. Many mainland developers have been grappling with funding woes up until towards the end of 2008 when government officials eventually relaxed bank credit terms but again in 2011, the government tightened liquidity by hiking interest rates and increasing bank reserve ratios. Nevertheless, it seems clear that greater diversification of financing sources would be beneficial to the long-term stability of the real estate industry.

Types of development finance

There are many types of financing products available in the market which are tailored towards the purpose of property development. For instance, financing can be used for site acquisition, bridging purposes, construction activity and for fixed term investments. Accordingly, each of these carries with it different types of risks. For example, site acquisition financing carries pre-development risks which include planning, regulatory approvals;

Bank Advances

Han (2008) argues that, real estate developers have traditionally been relying on bank advance to finance the entire development financial needs. These needs range from land reserve purchases, real estate developing, disposal, purchasing, brokerage fees etc. The function of real estate finance especially housing finance in real estate market is becoming very crucial in China. Currently, It is approximated that about 60% of the investment in real estate development is sourced from commercial banks. Of this 60%, 25% has been directly advanced to construction loan and rest of 35% advanced to the mortgage loan for the forward sale of residential buildings.

In most of the developed countries It is approximated that the outstanding of home mortgage loan accounts for more than 50% of the national GDP and more than one fourth of the total outstanding loans. However, the outstanding of home mortgage debt took *only 9%* of the nation's GDP and 6% of the total financial loan of commercial banks in China *in 2002*, the rapid annual increasing rate of the business will be amazing. In consideration of the fact that commercial banks are the only major source of funds in real estate market, the People's Bank of China tends to tighten the loan origination in order to control the possible financial risk originated from real estate market.

Real Estate Investment Trusts (REITs)

Property companies, in particular real estate investment trusts (REITs), offer some unique characteristics on which to test the theories of capital structure. REITs have a great deal of collateral which can be used to support high levels of debt and distribute nearly all of their profits as dividends.

Wang, Sun&Chen(2008), defined REITs as a corporation or trust that uses the pooled capital of many investors to invest or purchase and manage property and receive its income (equity REITs) or, less commonly, mortgage loans (mortgage REITs) or both(Hybrid REITs) and distribute its earnings to investors While Geltner & Miller (2007) defined that US REITs are kind of passive investment vehicles which provide investors a liquid way invest in a diversified portfolio of properties and achieve the profit associated with real estate development.

REITs are; managed internally, have a fixed life span and are structured in a way that substantially mitigates tax. Besides the above listed characteristics that considerably differentiate REITs to private equity funds, individual REITs focus strongly on one location or sector. Another distinction between the two latter mentioned fund types is that REITs have little, if any, co-investment, whilst private equity real estate funds account for significant co-investment. REITs are tax transparent, meaning that they are tax free in terms of paying taxes on earnings. Nevertheless, they are still taxed accordingly when distributing dividend income to its shareholders. The shareholder's applicable tax rates are those taxes designated to dividend distribution of capital gains. Amortization and depreciation, as well as its resultant effects on net income may allow part of the tax on REIT dividends to be deferred (Brueggeman & Fisher, 2005, pp. 580-583).

REITs are, namely, normally listed as units or shares. REITs fall into three principal categories. The main category is a real estate equity trust. This group accounts for the largest share of all REIT types representing over 96% of all REIT types. Equity REITs invest in and own property, thus making them responsible for the value of the acquired real estate assets. Revenue from equity trusts principally comes from the properties' rents. The second category is the mortgage REIT. Mortgage REITs deal in investment and ownership of property mortgages. These trusts lend financial assets for mortgages to owners of property, or purchase existing mortgages or mortgage backed securities. Their revenues are generated primarily by the interest that they earn on the mortgage loans. The third group of trusts are the so-called hybrid trusts. These are basically comprised of a combination of both equity and mortgage REITs (Real Estate Investment Trust - REIT, 2009).

A REIT provides a similar structure for investing in real estate as mutual funds do for stock investment, although it is an investment which has some of the characteristics of debt – for example, a regular income stream – and equity, where investors are exposed to the risks and rewards of the underlying properties. REITs must typically distribute the majority of their annual net income (at least 90 percent in Hong Kong) to investors regularly. They can be publicly or privately held – the public ones are listed on stock exchanges like common stocks. REITs will help finance and liquidity into China's real estate market.

Private Equity/Venture Capital

Stock market-based economies such as the U.S. and U.K. also tend to have well-developed systems for the acquisition and distribution of information, so the cost of information to investors is low. Markets then work well because investors can gather information at low costs and those that anticipate high profits can provide the finance to the firms operating in the new industries.

An important part of this process is the private equity/venture capital sector (Kortum and Lerner 2000). Venture capitalists are able to raise large amounts of funds in the U.S. because of the prospect that successful firms will be able to undertake an IPO. With data from 21 countries, Jeng and Wells (2000) find that venture capital is less important in other countries, while the existence of an active IPO market is the critical determinant of the importance of venture capital in a country. This is consistent with the finding of Black and Gilson (1998) in a comparison of the U.S. and Germany, that the primary reason venture capital is relatively successful in the U.S. is the active IPO market that exists there.

The reason that China should develop active venture capital and private equity markets is to provide financing for fund deficit sectors. What is unusual about China is that it currently has the ability to develop construction sector. China has already followed suit in first introducing advanced (relative to domestic companies) but not the most advanced technologies from developed countries; and "domiciling" these technologies within designated companies before moving toward the more advanced technologies. Allen and Gale (1999, 2000a) content that banks are better than financial markets for funding mature industries because there is wide agreement on how they should be managed, so the delegation of the investment decision to a bank works well.

HYPOTHESIS AND VARIABLE DEFINATIONS
TABULAR PRESENTATION

FINANCE DEMAND SIDE VARIABLES	EXPECTED SIGN	FUNDS SUPPLY SIDE VARIABLES	EXPECTED SIGN
Collateral	Positive(+)	company size	Positive(+)
Guanxi	Positive(+)	Company growth	Positive(+)
Financial cost	Negative(-)	Profitability	Positive(+)
Cost of land per(M²)	Positive(+)	Asset tangibility	Positive(+)
Managers training level	Positive(+)	Business risk	Positive(+)
Management experience	Positive(+)	Company age	Positive(+)
Average plot size(M²)	Positive(+)	lenders experience	Positive(+)
Research & Development	Positive(+)	Interest Income	Positive(+)

SOURCE: OWN DESIGN

Management experience

For its capital to be well structured and effectively utilized, a business firm must be able to devise various ways for selecting the best components of its capital which would be used in the company's operation to raise its productivity and or achieve performance. This process should be based on the criteria well drawn up by the finance manager after making a careful financial planning and control for the company (Uremadu, 2004).

Company size

Corporate size seems to be one of the most theorized determinants of financial leverage. In effect, the relationship between size and financial leverage has been explained by virtually all the mainstream capital structure theories (Schoubben and van Hulle, 2004, p. 595). *Company size* is measured by taking the natural logarithm of the total assets. leverage and company size are expected to bear a positive sign as per the trade theory. according to Ang et al. 1982. Larger firms are usually more diversified and therefore bear lower risks of financial distress; or that their size creates less transparency and greater need for monitoring (Ang et al. 1982; Myers 1984; Myers & Majluf 1984) and Bevan and Danbolt, (1999). Finds out that larger companies are more likely to have a credit rating and thus have access to non-bank debt financing, which is usually unavailable to smaller companies.

Company growth

Computed as the change in total assets between two consecutive years divided by previous year total assets. Thus, firms with high intangible growth opportunities will use more of equity rather than debt in their capital structure. Its hypothesized it will be negatively related to leverage.

Company Profitability

Brealey et al. 2008 in his works states that, common measure of firm profitability is return on assets (ROA) Since profitable firms have higher income shield, and greater free cash flow, theory predicts higher leverage for profitable firms, and the opposite for firms with investment opportunities perceived to be risky. As postulated by pecking order theory firms with higher profits (high internally generated funds) prefer to borrow less because it is easier and more cost effective to finance from internal fund sources. So, as per this theory, there will be a negative relation between leverage and profitability. On the contrary, trade-off theory suggests that this relationship would be positive. Since profitable firms are less likely to go bankrupt, and hence can avail more debt at cheaper rates of interest.

Asset tangibility

According to the findings of Gaud et al. 2005; Morri & Beretta 2008, firms with tangible assets can take on higher leverage. Jensen & Meckling 1976 arguments from agent-theory perspective, lenders demand collateral of tangible assets to avoid suboptimal investments by shareholders as a result of the conflict between lenders and equity owners. Wessels 1988; Westgaard et al. 2008) find a significantly positive relationship between tangibility and debt, with similar finding is Bradley et al. (1984) that, there is a positive relationship between tangibility and gearing. On the contrary Feng (2007) and Grossman and Hart (1982), finding a significantly negative relationship. Computed as a ratio of net fixed assets divided by total assets. Since tangible assets are used as collateral, firms with large amount of fixed assets can borrow on favourable terms by providing the security of these assets to the lenders. Therefore, a high ratio of fixed assets-to-total assets should have a positive impact on firm leverage.

Business risk

business risk is defined as variability of expected earnings. A priori, there should be a negative dependence between leverage and business risk. If the argument by DeAngelo and Masulis (1980) is extended, an a priori positive relationship is expected to be observed between risk and the demand for equity as well as for retained earnings.

Company age

According to Abor, (2008), age of the firm is a standard measure of reputation in capital structure models. As a company life cycle lengthens in business, it establishes itself as a going concern and therefore increases its capacity to take on more debt; hence age is positively related to debt. Rajan and Zingales (1995) revisits age concept found that older firms are perceived to have higher debt ratios since they should be quality firms.

METHODOLOGY

Stratified random sampling and simple random sampling methods were used in this study. The reason for employing the afore mentioned methods is to ensure adequate or proportional representation of the different categories of companies that make up the population. The area that was chosen for study was Chongqing Municipality Jiangbei and Changshou area.

MODEL SPECIFICATION

Simultaneous equation model (Giambona et al. 2008), linear regression (Morri & Beretta 2008) Fixed effects regression model has been used to analyse capital financing behaviour in real estate studies:

Demand side:

$$FIN\ DD = \beta_0 + \beta_1 COLL + \beta_2 GNX + \beta_3 FINCO + \beta_4 LACO + \beta_5 MGTTR + \beta_6 MGTXP + \beta_7 PLOSIZE + \beta_8 R\&D + \dot{\epsilon} \ldots\ldots\ldots(1)$$

FIN DD -Finance demand; COLL-Collateral; GNXI-Guanxi; FINCO-Finance Cost; LACO – Land Cost ; MGTTR- Management Training; MGTXP-Management Experience; PLOSIZE-Plot Size;

Supply side:

$$CAPLEV_{ss} = \beta_0 + \beta_1 COSIZ + \beta_2 PROF + \beta_3 COAGE + \beta_4 BUZRISK + \beta_5 ASSTAN + \beta_6 COGRO + \beta_7 LENDEX + \beta_8 INTINI + \dot{\epsilon} \ldots\ldots\ldots(2)$$

$CAPLEV_{ss}$- Capital Leverage supply; COSIZE-Company size; PROF- Profitability; COAGE-Company Age; BUZRISK-Business Risk; ASSTAN-Asset Tangibility; COGRO- Company Growth; LENDEX-Lenders Experience; INTIN-Interest Income;

Empirical Results and Analysis.

Estimated finance Demand Function

Explanatory variables	coefficients and std errors	t-statistics
R(constant)	910718.75(196712)	4.6297
Collateral	1680432(529269)	3.17501
Guanxi	120.974*(70.272)	1.7215
Financial cost	-412985.046**(178088)	-2.319
Cost of land per(M2)	6329509.51***(1331687)	4.753
Managers training level	19.07893**(4.993)	3.821
Management Experience	14.7402**(9.9127)	1.487
Average plot size(M2)	3.229***(1.054)	3.064
Research & Development	32175.5* (13832)	2.3261
Std. error of estimate	0.5418	
F	6.79***	
R2	.372	

a)   a) Dependent variable here is Real estate investment fund demanded; ***P < 0.01, **P< 0.05, *P < 0.1

b)   SPSS software was used to generate, t-statistics, coefficients and standard errors.

Estimated finance supply Function

Explanatory variables	coefficients and std errors	t-statistics
constant	-3.75E+29(7225820)	-5.1897
Company size	1093712.03**(324685.05)	3.3685
Profitability	159820 .75***(98483.02)	1.6228
company AGE	-81208.50(28223.9)	-2.8773
Business risk	-30652.06(3764.01)	8.1434
Asset Tangibility	63491.15**(41016.25)	1.5480
company growth	89342.02(33008.03)	2.7067
lenders experience	1518.07***(315.10)	4.8177
Interest Income	178.04**(6.3016)	28.253
Std. error of estimate	2571.98	
F	8.012***	
R2	.41	

a) Dependent variable here is Capital leverage Real estate Funds supply ; ***P < 0.01, **P< 0.05, *P < 0.1

b) SPSS software was used to generate, t-statistics, coefficients and standard errors.

TYPE OF FINANCING	% OF CURRENT FINANCING OPTION	% OF FUTURE OPTIONS
Self financing	39.8%	42%
loan from domestic banks	67.5%,	31%
loan from foreign banks	0%	6.7%,
Issue corporate bond	0%	33%
Issue REITs	0%	54.3%
Issue CMBS	0%	29%
Private Equity financing	0%	62%
Mezzanine financing	0%	29.2%
Strategic cooperation	46%	49.8%
Informal financing	28.6%	0%

SOURCE : OWN CALCULATION

Table 1: The mentioned variables are the main motivators for seeking more finances for continued real estate investment expansion. On the other hand, the interest rates, Research and Development costs, land costs exhibited negative sign and significant coefficients. signifying that that these variables have immense ability to push real estate developers to be innovative at seeking financing options are at competitive rates especially when they are on the rise and vice versa.

Collateral was positive as per our apriori expectation but it was statistically insignificant. According to Bester (1985), financial institutions decide to grant credit based on a simultaneous choice of interest rates and collateral according to the operation/borrowers risk level. Besides, Bester (1995) demonstrates that low default probability clients are more inclined to accept greater collateral volume request from financial institutions than greater interest rates. collateral is a powerful instrument to mitigate moral hazard, although this imposes deadweight repossession cost to lender.

Guanxi was positive and statistically significant at 5% level confirming our apriori expectation that guanxi will influence credit demand. According to Braendle et al., 2005; Wang, 2007; Liu et al., 2008, large amount of resources and information flows through Guanxi (personal relationships) due to institutional and environmental uncertainties. Such flows can reduce transaction costs and improve efficiency of resource allocation (Siu and Bao, 2008).

The amount interest paid on funds borrowed was significant at the 5% level and had a negative sign. This is in line with *a priori* expectations and with the results from Desai & Mellor (1993), Eboh & Akpomedaye (1995), Nwaru (2004) and Essein (2009). Interest is the unit cost for taking credit. *Ceteris paribus,* as the cost increases, credit demand decreases, the reverse is true.

Cost of land was positive and statistically significant at 10% level, meaning that high cost of land pushed up credit demand, on the other hand, the managers training(education) and management experience, were both statistically significant at the 5% level and exhibited our *a priori expectation of* positive sign with credit demand. Managers are more amenable to risk taking than non-educated and experienced ones because they are better equipped to access, evaluate and understand improved resource allocation techniques. Land size was positive and statistically significant at 10% levelas per our apriori expectation, the size of land was mostly determined by the cost of land during bidding process. In china land is always transferred to the highest bidder. Finally research and development costs were positive and significant at 10% level in conformity with our hypothesis (Anderson and Reeb, 2003; Villalonga and Amit, 2006) and realize that R&D investments can help firm generate competitive capabilities (Franko, 1989), they would like to invest more in R&D activities.

The F-value of 6.79 surpasses its significance at 5% level. This confirms that there is a significant linear relationship between funds demanded and the associated variables.R^2 is 0.41,

which indicates that about 41% of the total variations in the fund supply side (leverage) can be explained by the independent variables while 59% cannot be explained. The result suggest that land cost and research and development cost much influence the behavior of fund demand for real estate developers. Thus a unit rise in land cost will lead to about 6329509.51 units rise in funds demanded, on the other hand a unit rise in research and development costs will lead to 32175.5 units rise in fund demanded.

Table 2: Company size is positive and significant at 5% level this confirms our apriori expectation that company age is positively related to debt. according to Ang et al. 1982. Larger firms are usually more diversified and therefore bear lower risks of financial distress; or that their size creates less transparency and greater need for monitoring. Also positive as per hypothesis was profitability. It was statistically significant at 10% as postulated by trade-off theory which suggests that this relationship would be positive. Since profitable firms are less likely to go bankrupt, and hence can avail more debt at cheaper rates of interest. Company age was negative and insignificant contrary to Rajan and Zingales (1995) finding that age concept found that older firms are perceived to have higher debt ratios since they should be quality firms. A priori, there should be a negative dependence between leverage and business risk. If the argument by DeAngelo and Masulis (1980) is extended, an a priori positive relationship is expected to be observed between risk and the demand for equity as well as for retained earnings. But our finding is that business risk is negative and insignificant. Asset Tangibility is positive as per our apriori expectation. It is statistically significant at 5 % level this was also visited by Westgaard et al. 2008) find a significantly positive relationship between tangibility and debt, with similar finding is Bradley et al. (1984) that, there is a positive relationship between tangibility and gearing

Company growth was positive contrary our apriori expectation in the hypothesis but it was statistically insignificant contrary to A negative dependence between growth and leverage is hypothesised since faster growing firms have a greater opportunity to engage in asset substitution and transfer wealth away from the bondholder and towards the shareholder. In turn, this increases the agency costs of debt and therefore leads to the negative relationship between growth and leverage. Since a positive statistical relationship is noted between growth and long-term debt, a negative dependence for equity and an insignificant one for short-term debt, there is no clear evidence to either support nor reject Higgin's (1977) posit.

The coefficient **for** lending experience was significant at **10%** and has a positive relationship with credit supply. This conforms with our *a priori* expectations and the findings from Nwaru *et al.* (2004) & Essein (2009). The duration a lender has been involved in lending may give an indication of the practical knowledge he has gained on how to overcome the problems associated with lending at minimal costs. Such practical knowledge would help him to handle loan applicants better; critically sorting them for honesty and genuineness. Nwaru *et al.* (2004) remarks that this would lead to a reduction in the risk of his loan portfolio and an increase in the supply for credit.

In the credit market, interest is paid by the borrower as an opportunity cost to encourage the creditor to forgo his potential command over current output and future investment possibilities (Nwachukwu, 1994) additionaly to cover the cost he incurred in administering and possibly supervising the loan to maturity (Nwaru, 2004). Therefore, interest is the cost of money lent. In our findings, the coefficient for interest amount was positively signed and statistically significant at **5%**. The implication of this result is that as the rate of interest increases, credit amount supplied will equally increase *ceteris paribus*. This finding is consistent with *a priori* expectations and that of Nwaru (2004), who pointed out that interest receivable played a significant and positive role in determining the volume of credit supplied. The F-value of 8.012 surpasses its significance at 5% level. This confirms that there is a significant linear relationship between capital leverage and the associated variables.R^2 is 0.37, which indicates that about 37% of the total variations in the fund demand side can be explained by the independent variables while 63% cannot be explained. The result suggest that company size and profitability much influence the behavior of fund supply (leverage) for real estate developers. Thus a unit rise in companysize will lead to about 1093712 units rise in funds demanded, on the other hand a unit rise in profitability will lead to 159820.75 units rise in fund supplied (leverage).

Table 3: From our analysis we can note that real estate developers mostly depend on bank advances to finance construction costs as opposed to other sources of financing options. The current financing capital structure for the real estate companies are in the following proportion

domestic bank loans stood at of 67.5%, own funds accounted for 39.8% while 46% accounted for strategic cooperation. About 28.6% accounted for informal financing arrangements. Findings on other possible financing options for expansion and development, 62%, 31%, 49.8%, 6.7%, 33%, 54.3%, and 29% of the total companies view private equity financing, domestic bank loan, strategic cooperation, foreign bank loans, issuing corporate bond , issuing REITs, and issue CMBS as viable financing alternatives respectively. From the results we can deduce that, private equity financing, domestic bank loan and strategic cooperation are the major options of the companies; however, some companies also try to choose other new financing options such as issuing REITs and CMBS.

Discussion and Conclusions

The study aimed to examine the determinants of financing demand and supply in the real estate sector in Jiangbei and Changshou. Primary data were collected from the stratified sample of 90 real estate developers using a structured questionnaire. The analyses of data using simultaneous equations by the two stage least squares model to estimate Funds demand and supply functions posit that interest amount significantly influenced both functions at 5% and signed according to hypothesis. Other significant determinants of funds demand include Guanxi (cultivated relationship), land cost, Managers training/ education, managers experience, plot size and Research & Development (R&D). Funds supply was significantly influenced by company size, profitability, Asset tangibility and lenders experience. Company age and business risk no significant impact on funds supply they were inappropriately signed. It could be concluded from this study that credit suppliers consider several factors before extending credit to real estate developers.

The Chinese monetary authorities should continue with financial reforms in line with the Chinese principle of moderately developing nation with Chinese characteristics. Other sources of financing apart from bank loans need to be developed rapidly to defuse financial risk in the banking system that has been a major lender in the real estate sector so it is necessary to improve the real estate financing regulations from the actual operation, strengthen the policy orientation of real estate development fund system, a series of measures to establish a diversified real estate financing mechanism to promote real estate mortgage securitization.

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Определители финансового спроса и предложения; углубление финансового доступа к инвестированию в недвижимое имущество Китая

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Аннотация. Огромный разрыв, существующий между финансовыми потребностями и доступными финансовыми возможностями представляет собой основное ограничение возможностей роста финансирования предприятий и соответствует одному из требований стратегии стимулирования финансирования реального сектора с помощью мобилизации дешевых долгосрочных накоплений. Инвестирование в недвижимое имущество является основным начинанием, предполагающим, что фирмы, вкладывающие деньги а этот сектор должны иметь большой капитал для поддержания развития. Существует сильная конкуренция между фирмами, оперирующими недвижимостью в погоне за средствами из формальных и неформальных источников, удовлетворяющими финансовые потребности. Многие фирмы, торгующие недвижимостью, берут кредиты с фиксированной процентной ставкой. Последним действием, предпринятым Народным банком Китая с целью уменьшения кредитования сектора недвижимости, было усиление кредитно-денежной политики путем увеличения кредитной ставки, что, в итоге, привело к увеличению цен на недвижимость. Центральное правительство также поддержало банки в принятии медленного кредитования проектов недвижимости. Согласно Народному банку Китая, увеличение накопительных займов в отношении жилищного строительства составило 1,3 триллионов йен (198 миллиардов долларов), на 38 % ниже, чем в 2010 г., а новые займы в жилищном секторе составили 17,5 % по сравнению с общим количеством займов в 2011 г., на 27 % ниже, чем в 2010 г. Оставшаяся разумная альтернатива – использование других средств приобретения финансов для спекуляции с недвижимостью. Инвесторы в недвижимость должны углублять и расширять свои сделки для финансирования своей деятельности, чтобы избежать ограничения кредитов.

Ключевые слова: инвестиции в недвижимость; финансовые потребности; финансовые возможности; финансирование.