Analysis of Tbilisi's Real Estate Boom

An analysis of the real estate market in Tbilisi shows that prices have risen faster than rents in recent years. As a result, property owners earn less rent per U.S. dollar/Lari of investment today as compared to several years ago. This trend may be due to improved political and economic conditions, strong economic growth and rising incomes. Another factor may be that speculative property buyers are driving up prices based on very optimistic expectations about future price increases. This paper presents a framework for analysing Tbilisi's real estate market that is based on standard real estate economics taught at Western business schools. Future analysis is needed to quantify the factors that drive the recent boom.

SUMMARY

- **Real estate prices in Tbilisi have risen faster than rents and building costs.** After strong increases in recent years, real estate values significantly exceed marginal building costs, which are the long-term drivers of real estate prices according to standard economic theory. Developers are taking advantage of rich prices by building large volumes of new real estate.

- **The stars were aligned for Tbilisi's real estate boom.** Pent-up demand, strong economic growth, relative political stability, the legalization of economic activity and lack of investment alternatives were powerful drivers of the recent boom.

- **But supply could overshoot.** There is a risk that developers may overbuild, because they may have over-optimistic expectations of future demand.

- **Market participants should be prepared.** Real estate buyers and investors should not expect prices to rise forever. Real estate developers need to realize that ultimately, prices are likely to move closer to building costs, reducing profit opportunities. Banks need to evaluate the credit risk of commercial real estate lending and residential mortgages. If price increases slow down or even reverse, credit losses are likely to increase. Governmental authorities need to be watchful, as every boom creates opportunities for questionable behavior.

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Special thanks go to **David Jinjolia, Economic Researcher at the National Bank of Georgia, **Archil Mestvirishvili**, Head of the Macroeconomics and Statistics Department, National Bank of Georgia, **Robert J. Shiller**, Professor of Economics, Yale Universit, an **anonymous commentator** and **Malkhaz Gulashvili**, managing partner of Geo-Times Media Holding for their comments. Any views expressed in this report and any mistakes remain the sole responsibility of the authors.*

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I. KEY FOCUS AND CONCLUSIONS

The authors aim to provied an independent analysis of the current real estate boom in Tbilisi and the Republic of Georgia overall. The try to analyze this remarkable phenomon within a standard theoretical framework as it is tought on Western business schools.

This independent research report aims to contribute to a better understanding of Tbilisi's real estate market. To this end, the authors first develop a general model of supply and demand in real estate markets; then they apply this model to the Tbilisi market. Furthermore, an attempt is made to outline possible future trends. Finally, recommendations are made as to how different groups – investors, real estate developers, banks and governmental authorities – may best prepare for the future.

The key prediction is that real estate prices in Tbilisi appear rich relative to rents and building costs –two fundamental factors that drive real estate prices in the long term. Theory and past experience in many countries with market-driven real estate markets suggest that real estate prices in Tbilisi are currently elevated.

This does not mean, however, that real estate prices must drop. The current valuation can also be changed by a longer period of stagnant property prices, while rents catch up. Or rising inflation could erode the inflation-adjusted value of real estate prices, while boosting building costs. To some extent, this process is already well under way, as building costs have increased dramatically in recent years.

A. Scope of this report

One aim of this report is to leverage basic concepts of real estate economics to analyze the situation in Tbilisi. The model described in this report is adapted from a standard U.S. textbook for students of real estate economics. The report utilizes data on the Tbilisi real estate market gained from reports by the National Bank of Georgia, the International Monetary Fund and other sources as well as from conversations with bankers, investors and construction companies.

B. Limits of this report

The authors of this report do not have all the data necessary for a comprehensive analysis of the Tbilisi real estate market, its different geographic segments and different types of real estate (basic housing to premium residential space, retail space, office space). Such a more comprehensive analysis would be needed to answer questions raised in this report.

Moreover, this report does not attempt to predict the timing of a potential adjustment in Tbilisi real estate prices. History has shown that market prices can deviate from fundamentals for long periods of time or, as the British economist John Maynard Keynes said: “*Markets can stay irrational for longer than investors can stay solvent*.”

II. THE REAL ESTATE SPACE MARKET (RENTAL MARKET)

Teachers of real estate economics in the United States[1] distinguish two markets – the real estate space market and the asset market. The space market is the market for the usage of real property (also called the rental market or usage market). The asset market, in contrast, is the market for ownership of real estate assets (also called the property market). These two markets are subject to different dynamics, although they are closely interlinked.

On the real estate space market, owners of real estate assets are offering the usage of those assets to businesses and families. The price paid for such usage is the rent. The owners are also called landlords and the users are called tenants.

A. Segmentation

An important of space markets is their segmentation which affects the demand side and the supply side of the market. Because of segmentation, rents (the price of real estate usage) can differ substantially for varying types of real estate and varying locations.

On the demand side, users of real estate space tend to require specific types of real estate in specific locations. For example, a company that wants to open an expensive clothing store targeting upper-class customers in Tbilisi needs a high-quality retail space in a centrally located district, like Vake or Vera. Such a company cannot use residential real estate outside the city or even in the province.

On the supply side, owners of real estate are restricted in which type of building in which location they offer. The owner of a large residential building in Saburtalo cannot move his building to another district where he would be able to charge higher rents. He can also not easily convert his residential building into real estate space. As another example, high-rise office towers in Western cities cannot easily be converted into residential apartments.

Because of segmentation, the real estate space market is actually not one homogeneous market, but a collection of local markets. There is a rent market for Vake, one for Saburtalo and one for the historic district of Tbilisi. The space markets in Rustavi and Zestaponi are even further removed from those in Tbilisi.

B. Substitution

However, when rents differ too much between segmented markets, then substitution can occur. For example, as office rents in New York City have risen substantially above rents in nearby locations, more and more companies are moving out. They are substituting

[1] For example, David M. Geltner and Norman G. Miller (2006): Commercial Real Estate: Analysis and Investments, 2. edition, South Western College Publishing. Portions of the first edition (2002) are available online at http://www.cba.uc.edu/getreal/Geltner-Miller%20Text.htm

office space in New York for less-desirable, but much cheaper office space in Newark or Westchester County, two nearby areas.

Another example of substitution is the phenomenon of real estate developers in New York converting office space into luxurious residential apartments, because the latter fetch higher rents. In Tbilisi, owners have converted residential apartments into offices, because office space is more valuable.

Substitution links segmented markets together. The willingness of real estate users to substitute one type of real estate for another limits the amount by which prices can differ between segmented markets.

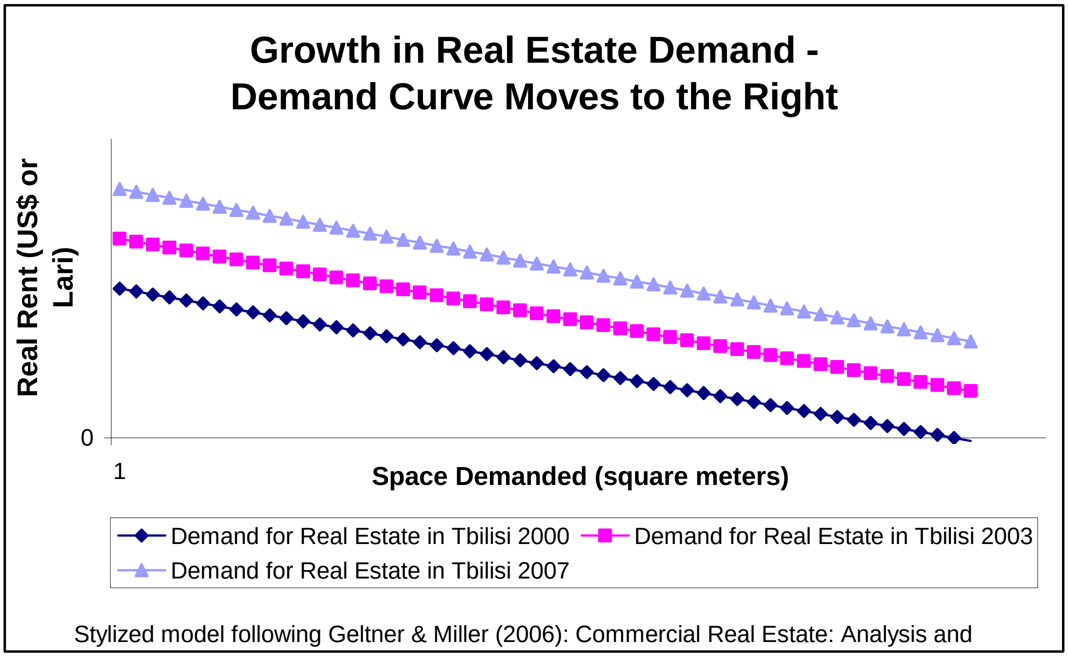
C. Demand for real estate space

Demand in the space (or rental) market is determined by the needs of real estate users and by their ability and willingness to pay. Many factors influence demand, some are described in more detail in later sections of this report. However, the most important factor is the price of usage, or rent. If rents are low, users find it easier to rent space, therefore they will typically demand more. If, however, rents are high in a particular market, users will try to use less space or move to a cheaper area, reducing demand for real estate space.

The demand for real estate space is typically depicted as a downward-sloped line (see red line in Figure 1). The downward slope shows that when inflation-adjusted or real rents are high (y axis of Figure 1), the quantity of space in demand is low (x axis of Figure 1). But as rents fall, demand expands.

Over time, the demand function may not be stable. For example, if real wages rise driven by strong economic growth, users of real estate will be able to pay higher rents for each square meter of real estate they are using. Or they may demand more space, if rents are stable. This can be depicted by parallel shifts of the demand curve to the right (green and blue line in Figure 1). In Tbilisi and the Republic of Georgia more generally, real estate demand seems to have increased in recent years, driven by strong economic growth and rising incomes.

Figure 1 – Demand for real estate space



D. The "kinked" supply of real estate space

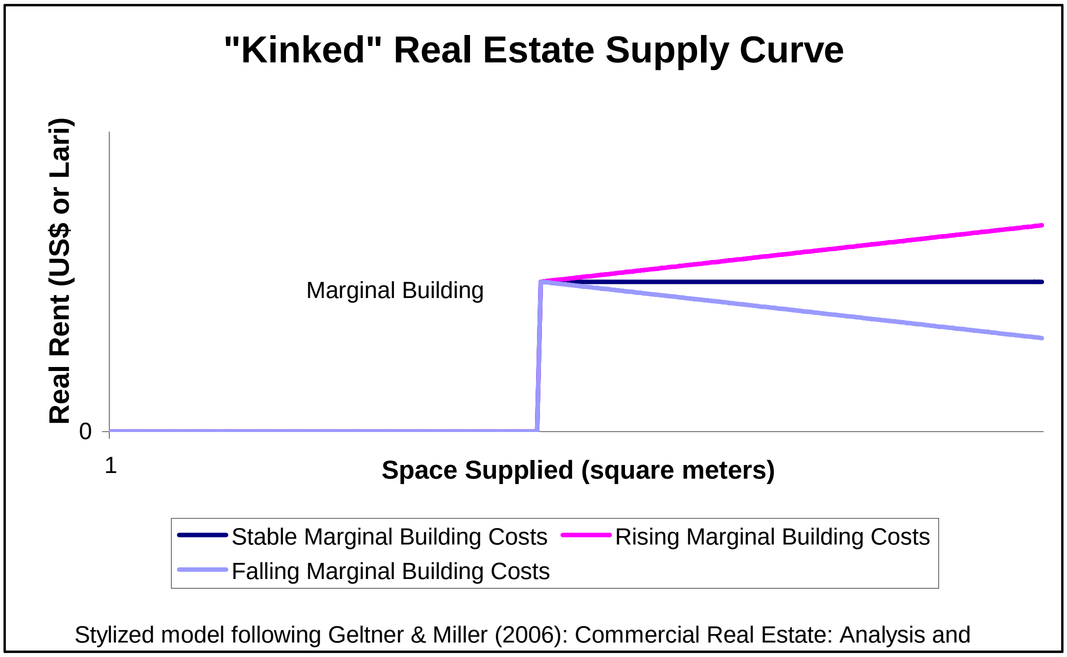
While the demand curve for real estate space resembles a typical economic market model, the supply curve is different. Typically providers of goods and services will offer less of those services, when prices are low, because low prices limit their profit potential.

However, the quantity of real estate on the market is fixed in the short term. Owners need to rent out their buildings to generate any income, even if rents are low. Therefore, they will rent out their space at almost any rent (as long as the rent is higher than the cost of letting space stand empty). This inflexible supply can be depicted by a straight line (see Figure 2). The straight line symbolizses the amount of real estate that is available today. The straight-line portion represents the <u>short-run supply</u> curve for real estate.

However, in the longer term, supply of real estate can be increased, if if owners invest in new building projects. If rents rise significantly above the cost of building new space, business men will see profit opportunities and will start building new properties, unless an unstable political situation or lack of funds restricts them from doing so.

The rent level that induces new building activities marks the "kink" on Figure 2. The horizontal, upward-sloping and downward-sloping lines in Figure 2 represent the <u>longer-term supply curve</u> for real estate.

Figure 2 – Supply of real estate space



Beyond the “kink” point, the shape of real estate supply depends on the <u>structure of building costs</u>. If the marginal cost of building additional space rises with each new building, then new projects will only be undertaken, if rents rise further (rising blue line in Figure 2).

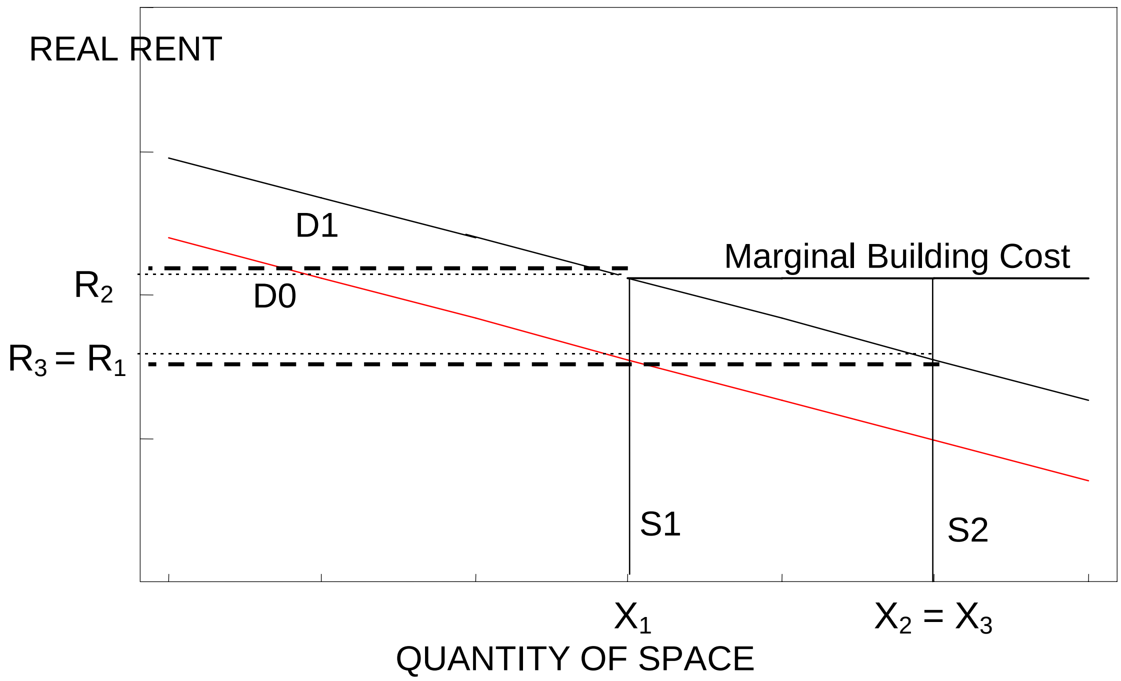
If, however, building costs get cheaper, the more space is built, new projects will continue, even at lower rents (downward-sloping green line in Figure 2). Finally, historical data for the United States suggests that marginal building costs are approximately constant over long time periods (horizontal red line in Figure 2).

These stylized illustrations help analyze, how real estate supply may react to an increase in demand – such as happened in Tbilisi since the second half of the 1990s (see Figure 3).

E. Stylized supply reaction to demand increase

The effect of an increase in the demand for real estate space – such as happened in Tbilisi – can be analyzed in the simplified diagram of Figure 3. Let us assume, that the demand curve shifted from D0 (red line) to D1 (dark line). This triggers a process that can be described in three steps

Figure 3 – Supply reaction after change in demand



Source: Geltner & Miller (2002): Commercial Real Estate: Analysis and Investments

First step: Increased demand drives up rents (R1 to R2)
In the short term, the supply of real estate is fixed, as depicted by the straight line S1 in Figure 3. Therefore, the shift in demand does not affect the quantity of real estate space available (X1). Rents, however, will be driven up, as more people compete for apartments that become available, and real estate owners realize that they can raise rents. Rents will rise to the level R2 that balances the new demand with the fixed supply.

Second step: Price signal triggers construction of new real estate (X1 to X2)
If rents rise to the "kink" point of the supply curve S1, then it becomes profitable for real estate developers to start new construction. By building new space, they shift the supply outward (to the right in Figure 3). Let us assume that real estate developers expect that demand is strong enough to absorb a total supply of X2 of real estate space. In that case, they will build enough space, to shift the new supply curve to S2.

Third step: Increased supply affects rents (R2 to R3)
In this example, the real estate builders have mis-judged the strength of demand. Because there is not enough demand, to absorb the increased supply of real estate X2 at the higher rent R2.

Some real estate owners will not be able to find tenants for their space at the rent level R2. Since it is uneconomical for real estate owners to keep their space empty, they will eventually start lowering the rents.

In reality, this may not be obvious at first, because property owners may initially hold out for tenants paying higher rents, which leads to a rise in vacancies. Also, rent reductions often take the form of "special deals" such as giving tenants one or two months rent-free.

It is diffiicult to measure these effects, because they do not necessarily show up in the rents that are advertised in newspapers. In Tbilisi, special offers as described above can be observed in the market. Also, there is a large number of vacant apartments in Tbilisi which is usually the first sign of an oversupply in the real estate market. In our example, a balance between demand and the new, increased supply of real estate space is reached at the rent level R3, which is the same level as R1, at the start of the analysis.

F. Key messages from the model analysis

As with every model, Figure 3 does not capture all the complexities of real estate markets in practice. For example, market segmentation means that there really is no unified market with single rent levels and quantities, but different market segments that can Figure very different trends.

However, the key message of the analysis is valid: <u>The fact that supply of real estate is fixed at any point in time means that rents can be volatile</u> – rising strongly, when there is too much demand, and suddenly reversing course, when there is too much supply.

Moreover, the model demonstrates that supply of rental space is based on <u>expectations of future demand</u>. The uncertainty surrounding such expectations causes construction companies typically to wait until rents rise substantially above their marginal costs, before they start building. But once new projects start being developed, the result is often an over-supply, as builders mis-judge demand. The result is a cyclical boom / bust pattern that characterizes many real estate markets around the world.

G. Outlook for Tbilisi's rental market

How can the preceding analysis be applied to the rental market in Tbilisi? First, demand has certainly increased since the late 1990s, driven by strong economic growth which gave households more income to pay higher rents. Rents have clearly risen above the marginal cost of building new properties, and this has triggered the extraordinary construction boom in Tbilisi.

One indication that higher rents are driving new construction is that the boom started in Tbilisi, where rents are highest, and has now spread to resort areas on the black sea and in the mountains. Rents have also increased in these areas, making it attractive for construction companies to build new space. In contrast, construction activity is not as strong in other provincial regions, where rents have not risen as much.

The risk of over-supply

But is demand strong enough to absorb the massive increase in available real estate space at the current higher rents? Or will rents eventually fall, because builders are creating an over-supply of new space, like in the analysis above? The authors of this report cannot provide a clear answer for lack of detailed empirical data. But there are some concerning signals.

As mentioned above, the first warning sign that a booming rental market may soon reverse course is an increase in vacant space. Rents may still be rising, but more and more landlords struggle to find tenants at the prevailing rents. This can currently be observed in Tbilisi, where thousands of apartments are idle.

Another cause for concern is the vast amount of new real estate projects that will significantly increase the supply of existing space in and around Tbilisi over the coming months and years. It remains to be seen if demand is strong enough to absorb all this new space. A research report by an investment bank lists projects undertaken by major developers and construction firms in the Republic of Georgia with a total size of 1.753872 million square meters that have either been built or are under development. The vast majority of this space is located in and around Tbilisi.

On the other hand, it is questionable, if all these projects will be realized. As building costs continue to rise, some projects become less profitable. This effect may somewhat reduce the amount of new construction.

III. THE REAL ESTATE ASSET MARKET (PROPERTY MARKET)

Most participants in the Tbilisi real estate market appear to be much more interested in real estate asset prices (property prices) than in rents. Nevertheless, this report has described basic dynamics in the rental market in some detail, because property prices are driven to a large extent by the rental market.

A. Capitalization rate indicates value of real estate assets

The link between the rental (or real estate space) market and the property (or real estate asset) market is captured by the so-called capitalization (or cap) rate. This is defined as the ratio of current rental income per year to the price of a real estate asset:

$$\boxed{\text{Capitalization (cap) rate} = \text{Rent}_{\text{annual}} / \text{Property Price}}$$

In Western real estate markets, practitioners routinely evaluate the attractiveness of real estate markets or individual properties based on their cap rates. For a real estate owner, the cap rate is the percentage of his capital that he can expect to earn back in one year. All else being equal, an investor would be willing to pay a higher price for a property that carries a higher cap rate.

B. Alternative investments

Cap rates are comparable to yields on other investments, like the interest yield on bank deposits or the dividend that a business owner can expect to earn on his investment. It is important to note that while the market of usage of real estate space (rental market) is highly segmented, the market for real estate assets (property market) is not. Most owners of real estate assets are primarily interested in deriving profits from their investments – either by generating rental income or by benefiting from increases in the value of their assets[2].

Real estate owners do not necessarily care if their profit comes from owning prime office space in Vake or from apartments in Saburtalo or from storage facilities at the Tbilisi airport. Moreover, they might even leave real estate altogether and put their money into bank deposits or buy equity in corporations through the stock market or private equity, if they believed that the profit potential of such alternative investments were much higher than profits available in the property market.

Therefore, the cap rate links the property market to other asset markets. Investors in developed Western markets typically compare the expected returns from real estate investments to the yield on bank deposits and other alternatives. The National Bank of Georgia reports cap rates for Tbilisi apartments in its Financial Stability Reports for 2007 and 2006[3].

Cap Rate ~ Interest Rate on Bank Deposits

Cap Rate ~ Dividend Yield on Stock Market or Private Equity Investments

The ~ symbol above says that cap rates are correlated with yields on alternative investments. However, it is not sufficient to simply compare cap rates to yields on other investments. Other factors that influence the comparison are investors' risk tolerance and expected future price trends.

C. Cap rates for Tbilisi properties have fallen since 2003

Cap rates for real estate in Tbilisi have fallen a lot in recent years. According to National Bank of Georgia, "in December 2003 average annual income generated from leasing apartment space (which is the cap rate on residential property) was higher than 18%; by (the) middle of 2005 it decreased to 9% and (was) almost equal to the interest yield on long-term bank deposits"[4]. Figures 4, 5 and 6 show cap rates for commercial space in the district Saburtalo, 1-room residential apartments in Saburtalo and 1-room residential apartments in Varketili between June 2001 and June 2007.

The data has been provided by the National Bank of Georgia[5] and is based on rents and prices for real estate published by Tbilisi newspapers. To smooth the volatility in the data, cap rates have been calculated based on moving three-month average for prices and rents. Also, 6-month average trend lines are shown.

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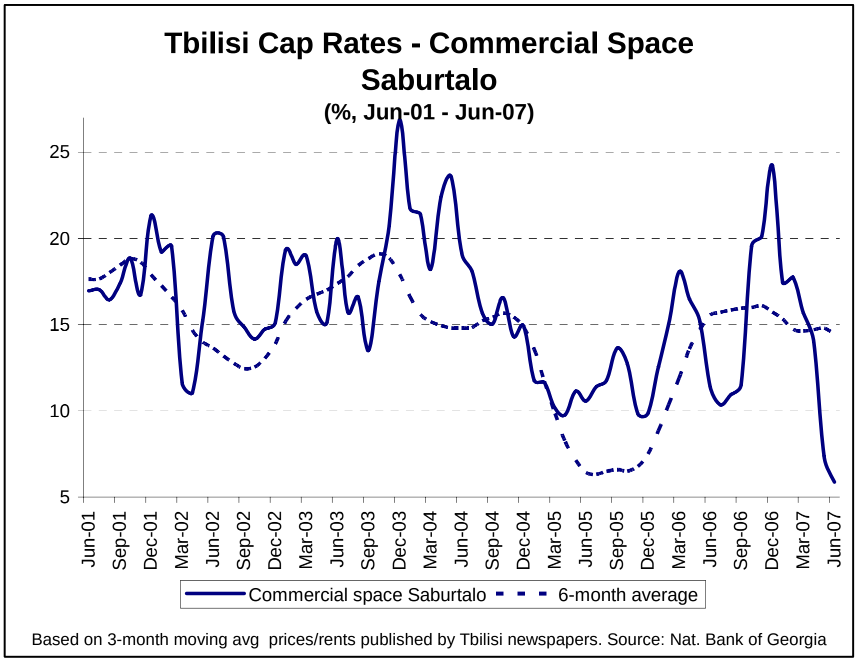
[2] It is true that people may buy real estate for other purposes, like the satisfaction related to owning one's own living space or because of emotional attachment to a particular building. But most large-scale investment decisions that drive the real estate market are based on profitability rationale.

[3] National Bank of Georgia (2006, 2007): Financial Stability Reports 2006 and 2007, available on the internet at http://www.nbg.ge/index.php?m=351

[4] National Bank of Georgia (2006), page 16

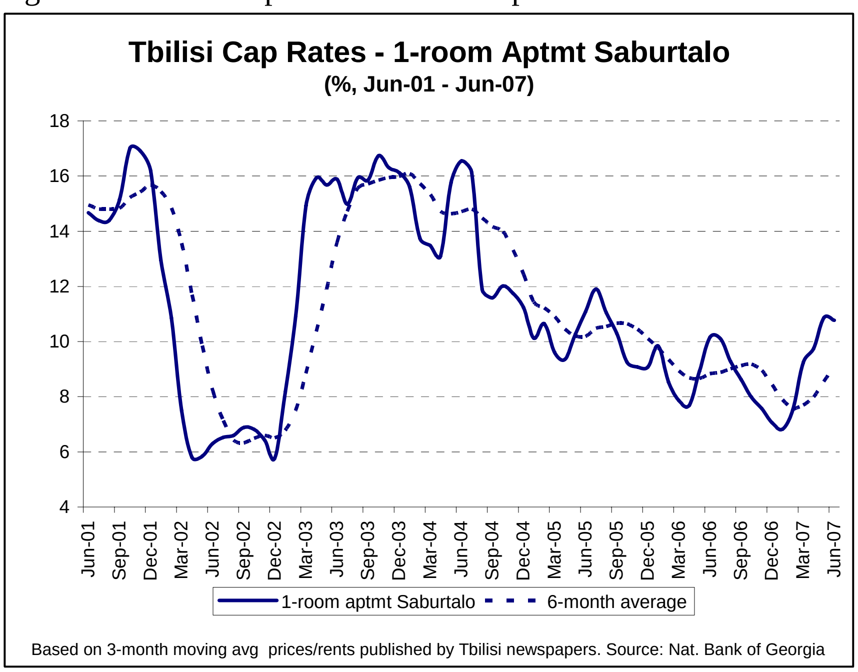
[5] The authors thank Archil Mestvirishvili for providing the data used in figures 4, 5 and 6.

Figure 4 - Tbilisi Cap Rates – Commercial Space



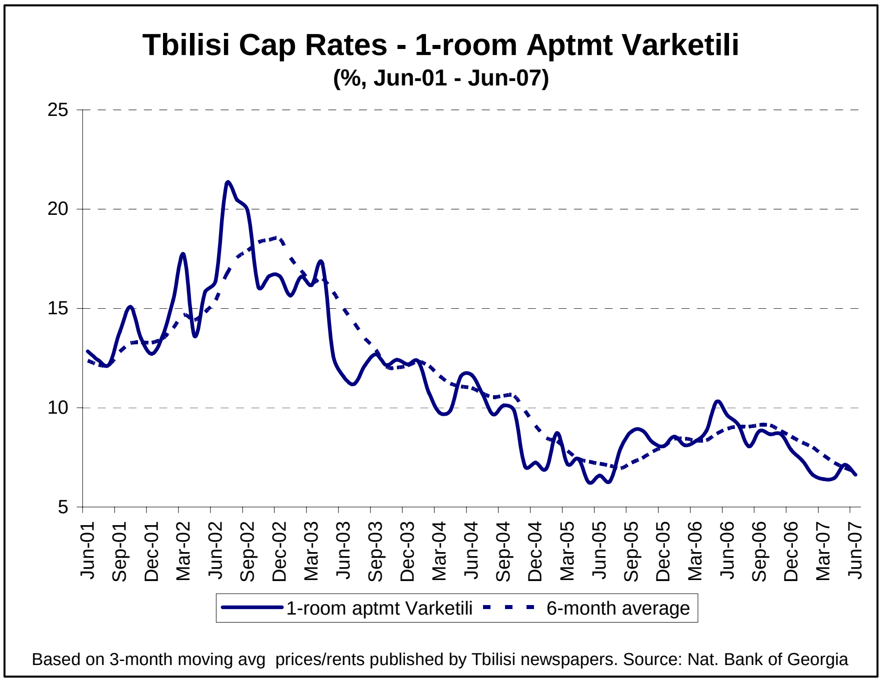
Cap rates for commercial space peaked at approximately 27% in December 2003, then fell to an interim low in 2005, only to rise again until the end of 2006, as commercial rents rose strongly, outpacing prices. However, since 2007, cap rates have fallen steeply, to an all-time low of under 6% in June 2007. This is driven both by rising prices and falling rents.

Figure 5 – Tbilisi Cap Rates - 1-room Aptmt Saburtalo



Cap rates for 1-room apartments in Saburtalo peaked earlier than for commercial space. They have been on a downward trend since mid-2004. The recent improvement in 2007 is driven by rising rents, while prices have stagnated.

Figure 6 – Tbilisi Cap Rates - 1-room Aptmt Varketili



Cap rates for 1-room apartments in Varketili have been trending downward since 2002, as prices have risen faster than rents. In June 2007, apartment buyers could only achieve rents that gave them a yield of approximately 6.5% on their investment.

While cap rates have fallen in Tbilisi, interest yields offered by Georgian banks on U.S. dollar and Georgian Lari deposits have increased. Currently, banks are offering yields of up to 15% on two-year Lari deposits. At the same time, the financial system has stabilized and bank deposits can be considered much safer than they might have been in 2003.

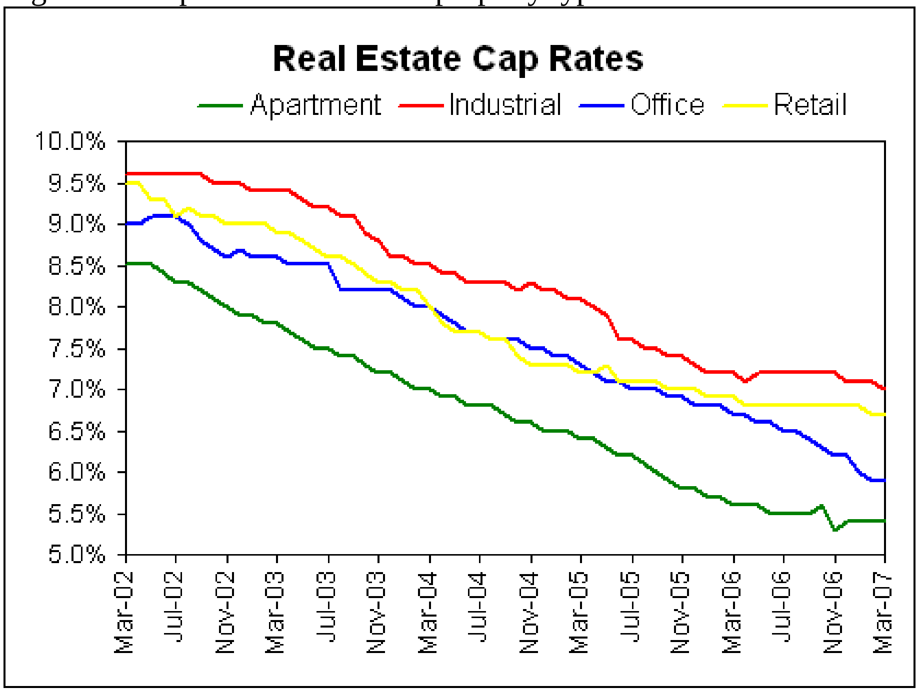
D. Cap rates in the United States

In global real estate markets, it is extremely rare that cap rates fall below the interest rate on bank deposits. Such a situation signals extreme optimism by investors. Even in the office property market of Manhattan – one of the most attractive and expensive markets globally – cap rates as of July 2007 were slightly higher than the interest rate of around 5% that U.S. banks offered on longer-term deposits. Despite cap rates being above bank deposit yields, many real estate professionals have called the U.S. real estate market overvalued.

In fact, real estate prices in the United States have declined in most regions since 2007 after a long boom that drove cap rates down (see Figure 5). In some regions in California and Florida, home prices have fallen by more than 20%. Hundred thousands of families have lost their homes, because they bought at overvalued prices and were unable to pay their mortgages.

Figures 4 and Figures 5 may invite cross-comparisons between cap rates in the United States and Tbilisi. With cap rates of maybe 7% presently, apartments in Tbilisi may still appear relatively more attractive than U.S. apartments which capture only about 5.5% cap rates.

Figure 7 – Cap rates for different property types in the United States



Source: Real Estate Research Corporation

Besides cap rates, two other factors drive property prices, risk tolerance and future price expectations. These factors also play important roles in Tbilisi's real estate boom.

E. Risk perceptions have changed dramatically in Tbilisi

Risk perception refers to the impression owners and investors have about the riskiness of holding real estate. It is a key factor that can often explain movements in property prices.

If investors perceive real estate to be very risky, they will be reluctant to buy, and prices will stay low. If, however, investors come to believe that real estate is a safe investment and that prices will always go up, then they will be willing to pay much higher prices. [6]

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[6] Why is real estate considered risky in standard Western economic textbooks? The two main reasons are its <u>long-term</u> and <u>illiquid</u> nature. Both attributes cause real estate prices to be more volatile and less predictable than, for example, the value of bank deposits.
<u>Long-term</u>: Properties typically last 30 to 50 years or even longer. A large portion of their value relies on their potential to generate rental income for a long time into the future.

In Tbilisi, risk perceptions appear to have changed dramatically in recent years. While the authors of this report are not aware of any empirical data to objectively measure risk perceptions, anecdotal evidence supports this statement. In 2002, generally only experienced business men would invest into new building projects. It was perceived as a risky business that could only be done by experts. In 2007, it appears that everybody and their brother are busy buying apartments. Investors seem to believe that there is almost no risk involved in owning real estate.

There are well-founded reasons to argue that owning real estate in Tbilisi has become less risky. Following the revolution in 2003, the federal government of the Republic of Georgia has largely legalized most business activities which mostly took place in a "grey zone" under the previous regime. Real estate owners in Tbilisi in 2007 generally do not need to fear that organized crime organizations or other groups may take away their assets. Moreover, the Republic of Georgia's judicial system generally protects the rights of property owners – although there are well-publicized exceptions.

The reduction in risk perceptions based on these trends can partly explain why investors in Tbilisi accept much higher prices and lower cap rates in 2007 relative to 2003.

However, risk perceptions are also influenced by non-rational, psychological and social factors. To the extent that risk perceptions are driven by psychological factors, investors may mistakenly ignore risks and drive up prices to unsustainable heights. Such psychological factors are described below.

F. Future price expectations have become highly optimistic in Tbilisi

Future price expectations are an important factor that drives current prices. This is somewhat an exception from standard economic theory, where prices (or expectations of future prices) typically do not influence current demand.

However, for long-term assets such as real estate future expectations clearly play an important role. If investors believe that apartment prices are highly likely to increase in the future, they will be willing to pay higher prices for apartments today than if they believe that future prices are highly uncertain or may even be lower. Also, investors may accept lower cap rates today, if they believe that prices and rents will rise in the future. Therefore, more optimistic price expectations may be another factor that can explain why cap rates for Tbilisi real estate havbe declined in recent years.

There is a lack of empirical data on the Tbilisi real estate market, but anecdotal evidence points to a strong shift in expectations for future property prices. In 2003, most people in Tbilisi did not have a strong view of real estate price trends. Professional business men

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Illiquidity: It can be difficult to sell real estate, especially in a depressed market. Each building has unique characteristics, making it more difficult to value and liquidate than, for example, bank deposits or cash. Even in developed Western markets, owners of large commercial buildings frequently find it hard to sell their properties, when they try to unload their buildings into a falling market.

were investing in real estate, primarily to capture the attractive rental income and to sell apartments to investors at current prices, which were significantly below building costs.

By 2007, however, the picture has changed: Many small investors in Tbilisi appear to be investing in real estate because they hope to benefit from future price increases. Rental income does not appear to be a strong driver, as demonstrated by the large number of apartments that are currently vacant. Their owners do not derive any current income from their investment. They appear to be betting on future price increases to make their investments profitable.

Data presented by the National Bank of Georgia show that rental yields have played only a small role in the gains that real estate investors enjoyed in Tbilisi in recent years (see Figure 6). Gains from increased value of properties were the key profit source for investors. This makes it understandable, why investors currently pay less attention to rental yields and more attention to price trends.

G. Optimistic expectations are a driver of the real estate boom

Evidence from other real estate markets shows that future price expectations tend to be highly volatile. Psychological experiments have shown that people tend to be base their expectations on recent experience and not on careful evaluation of fundamental factors. Robert Shiller, finance professor at the prestigious Yale University in the United States, has described the psychological and social factors influencing investors' expectations in his book "Irrational Exuberance"[7]. According to Professor Shiller, stories of success can have a powerful influence on people's expectations. They can become psychological "anchors" on which people base their expectations for the future.

In Tbilisi, almost everyone knows relatives or friends who made large amounts of money by investing in real estate. This has created what professor Shiller calls "group thinking": Everyone in Tbilisi seems to agree that apartment prices will continue to go up. Almost everyone seems to participate in this boom and make money – it has become difficult to justify, why one does NOT invest in real estate. Real estate has become a hot topic of conversations and media articles, further reinforcing the perception that the market has to keep going up.

In 2003, real estate investments appeared to be driven primarily by attractive cap rates, combined with a vague expectation of stable prices. In August 2007, real estate investments appear driven primarily by the expectation of future price increases which lead investors to disregard low cap rates.

However, the higher expectations of future price rises are, the bigger is the risk for disappointment. Evidence of past real estate boom / bust cycles shows that extremely optimistic or extremely pessimistic expectations regarding future price trends tend to

[7] Robert J. Shiller (2006): Irrational Exuberance, second edition, Princeton University Press, Princeton, U.S.A.

revert to a more "normal" level over time[8]. The same may be expected for the Tbilisi real estate market, where price expectations have become very optimistic.

The authors of this report do not attempt to predict the future of Tbilisi real estate prices. However, clearly real estate price increases of 40% or more per year CANNOT be considered a "normal" long-term rate[9].

I. Other drivers: credit, shadow economy, creative financing, economic growth
The theoretical models discussed above do not capture all relevant factors of the Tbilisi real estate boom. Some important drivers are described below:

Credit availability
The availability of credit to buyers and sellers of real estate appears to be an important factor driving the current boom. Construction companies and real estate developers have benefited from the willingness of banks and other sources to lend to them. Buyers of real estate are using mortgage loans to finance a significant portion of transactions. Banks are extending mortgages both directly and through cooperation with developers who then offer financing to their customers.

While credit availability cannot start a boom, it can to drive a boom further and make it last longer. Without ready financing, it appears unlikely that the upper middle-class developments on the Tbilisi market could all find buyers at the prevailing prices.

The risk of credit is that adds an element of uncertainty to the market. Banks and other lenders have limited resources, and their willingness to extend credit can change quickly.

Legalization of the shadow economy
A special feature of the current real estate boom in many former socialist countries, including the Republic of Georgia, is the existence of a large "shadow economy" which describes economic activity that does not necessarily conform to current law.

Prior to the latest Georgian revolution of 2003, much business activity took place in this non-official sector. Following the 2003 revolution, a large number of economic players with significant resources had an urgent need to convert their activities and wealth into legal, law-abiding businesses. Otherwise, these businesses faced the risk of the government confiscating their money and jailing their leaders.

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[8] What a "normal" expectation should be is difficult to determine. In developed, Western markets a "normal" expectation would be for real estate prices to rise in line with overall inflation. Professor Shiller presents evidence in his book "Irrational Exuberance" that nominal real estate prices in the United States have generally risen with inflation rates, leading to stagnant prices in real terms. In Germany, real estate prices have actually fallen in real terms between 1994 and 2000, following a massive construction boom in the formerly socialist East Germany after the re-unification with West Germany. That boom ended when it became clear that too many luxurious apartments had been built and there were not enough people in East Germany who could afford to live in them.

[9] However, such unrealistic forecasts are widespread in Tbilisi, suggesting that there is currently "irrational exuberance" in the market.

Like in many other countries of the former Eastern bloc, certain groups that had amassed substantial wealth after the fall of the Soviet Union transferred a portion of these assets into the real estate sector. A lot of capital flowed from the shadow economy into the real estate market, financing large new developments on the supply side and boosting demand at the same time.

Creative financing
Large real estate development companies have been creative enabling customers to afford to buy even at high prices. Seller-offered financing programs have become the norm for many large new projects. In these programs, banks partner with real estate developers to offer mortgages to home buyers who may not be able to afford the sales prices otherwise.

Many projects get sold before they are finished. Tbilisi citizens say companies are "selling the air". This financing, combined with bank loans allows developers to build large new projects with very little, or zero investment of their own.

However, as construction costs have also risen considerably and actual costs are often much higher than planned, the early sale of unfinished projects contains significant risks for buyers and developers. Sales prices may have been calculated based on cost projections that turn out to be too low. Moreover, if sales are slower than expected, a construction project may run out of cash before it can be completed.

There have numerous instances in which building societies and construction companies did not finish real estate projects due to miscalculations, but also to fraud.

Economic growth
It needs to be noted that the global economy has grown strongly and the Republic of Georgia has grown even faster in recent years. This has helped Georgians living abroad to earn income, a large portion of which is sent home as remittances and invested into real estate.

IV. CONCLUSIONS

The preceding analysis has described factors that are driving the real estate boom in Tbilisi. However, the authors have not built a quantitative model that would measure the impact each factor appears to have on real estate prices, such a regression model with economic growth, income growth, factors such as economic and political stability and more.

Based on past real estate cycles in other countries, the risk cannot be excluded that the boom in Tbilisi may slow down or even reverse. Therefore, market participants and regulators should consider the risks of such a reversal.

A. Buyers

Buyers of real estate, whether for their own use or for investment, need to be cautious. Buying decisions should generally not be based on the expectation of further price increases, as such expectations may prove incorrect. Trade-offs between buying and renting and between investing in real estate and other alternatives need to be evaluated.

B. Investors

Investors may consider the varying prospects of different market segments. Despite this report's conclusion that an oversupply of real estate may be in store for Tbilisi overall, some niche segments of the market seem to remain scarce. Also, building costs vary widely between projects, with higher-cost projects most at risk.

C. Banks

Banks need to carefully weigh their exposure to a downturn in real estate prices. They lend to sellers as well as buyers of real estate. On the seller side, banks may consider it prudent to re-evaluate the credit profile of their real estate developer and construction company clients. While many of those companies are large and well capitalized, failure to sell a very large project could put even strong players at risk.

For residential mortgages, there appears to be less risk for the banks. In most cases, repayment of these mortgages depends more on the income of buyers from employment in the domestic Georgian economy or on remittances of family members from abroad. Both would not be affected significantly by an end of the real estate boom. Still, an end to the real estate boom would probably imply higher loan losses on mortgages.

D. Governmental authorities

Governmental authorities may be well advised to prepare for the end of the real estate boom. Such preparation would involve closely monitoring the lending exposure of financial institutions to the real estate sector.

Regulators need to consider possible risks to the financial system. Moreover, the authorities may want to take a look at current practices within the real estate sector, as every boom tempts some market participants to engage in questionable behavior.

E. Real estate developers

Developers may want to keep a sharp eye on their cost structure and their capital resources. Higher-cost operators that lack sufficient capital reserves will be the first to feel the pain, when the real estate market turns.

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