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**RENT CONTROL DILEMMA COMEBACK IN EGYPT'S
GOVERNANCE: A HEDONIC APPROACH**

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Abstract

This paper applies hedonic pricing models to estimate the relationship between housing prices and characteristics and determines the implicit amount of housing consumed by a typical consumer by tenure type. The hedonic price approach is used to set up quality-adjusted price indices using household survey data. By estimating a semi-log hedonic function, the results showed that uncontrolled rent is higher on average than controlled units by around 9 percent after controlling for quality, while about 18 percent of the discrepancy in nominal rents is due to the fact that rent control is in effect. Therefore, the underpriced units drive out affordable units because of over-pricing at the higher end of the market and underpricing at the lower end of the market.

JEL Classification: D40, L51, R20

Keywords: Rent Control, Exempted Units, Controlled Units

ملخص

تطبق هذه الورقة نماذج التسعير لتقدير العلاقة بين أسعار المساكن وخصائصها وتحدد ضمناً المساكن التي يستهلكها المستهلك النموذجي حسب نوع الحيازة. يتم استخدام نهج التسعير لإنشاء مؤشرات الأسعار المعدلة الجودة باستخدام بيانات مسوحات الأسر المعيشية. عن طريق التقدير عن بعد تسجيل الدخل شبه الوظيفي، وأظهرت النتائج أن الإيجار غير المنضبط هو أعلى في المتوسط من وحدات التحكم بنحو 9 في المئة بعد ضبط الجودة، ويرجع ذلك إلى حقيقة أن السيطرة على الإيجار حوالي 18 في المئة من التباين في الإيجارات الاسمية في الواقع. ولذلك، فإن الوحدات المتدنية السعر تتناسب طردياً مع الحدة السكنية بأسعار ميسرة في النهاية أعلى من السوق وبخس في الطرف الأدنى من السوق.

1. Introduction

Rent control — a government mandated law that places a ceiling on the rent imposed by landlords on tenants. Rent control as distributive policy has been applied in a number of countries worldwide¹. Throughout the 19th century, a generation of rent control policies and regulations has been passed to protect tenants. The rent control policies first appeared at the end of WWI and in the advent of WWII as there was economic necessity back then that induced governments to interfere to protect the mass population due to shortages of housing supply during wartime and increases in the prices of construction materials, which in turn drove some landlords to raise rents above the ability of average renters and as a consequence many eviction cases were witnessed at the time. Rent control policies had a comeback again in the 1960s and 1970s. Relatively, there are few countries who still apply rent control policies today as most countries prohibit the practice as a disturbance of the housing and stock markets.

The rationale behind rent control was essentially to make the housing stock affordable to low-income segments of the population by protecting the poor tenants from the inflationary prices of housing stock and to act as an anti-profiteering practice. Rent control as a policy has many undesirable effects on the housing market. On the supply side, rent control results in the deterioration of building units as maintenance costs exceed the rent paid, which lead to landlords deciding not to pay. On the demand side, tenant mobility has deeply reduced. Rent control as a governmental policy is difficult to undo, even if it proved inefficient. The long-term price effect of the rent control policy is useless for both landlords and tenants. The realization of the distortions resulting from rent control is not directly realized because of the durability of housing. In fact, the tenants who have exceeded the landlords in number have formed an interest group to collectively fight to retain what they believed to be their legitimate interests in long-term occupancy.

The dynamic growth of the Egyptian population is remarkable. In the beginning of the twentieth century, the population was around 11 million, reaching 44 million by 1981, 53 million by 1988 and 83 million in 2013 (CAPMAS). The rapid growth of population pressures the housing market with a high rate of demand as the supply of the housing units is unaffordable by the average demanders. Housing stock deficit is attributed to the inefficient governance of the housing sector for years and a series of housing policies that exacerbated the problem. Rent control policy is up for re-negotiations and is considered for serious policy discussions. The threat of displacement is very serious in Egypt, which prevents decision makers from taking actions.

There is very few evidence in the literature in support of rent control. Proponents consider rent control an anti-profiteering and a redistributive policy that serves the poor segments of population. It has also been argued that the distributional benefit of rent control outweighs the allocative distortions (Gyourko and Linneman 1989). Ejarque and Kristensen (2013) examined Danish data and showed that households living in rent control housing units have lower expenditure share for housing than households living in uncontrolled housing. Arnott and Igarashi (2000) believed that rent control can increase search efficiency, which will improve welfare. Apparently, there are different justifications and reasoning for the policy but, in conclusion, the effectiveness of the policy is highly questionable and is at best mixed as shown by Turner et al. 1992 and Arnott 2003. On the contrary, there is almost a consensus in the literature against rent control. The comprehensive literature against rent control rests on many explanations. One explanation addresses rent control policy and tenancy mobility. Munch & Svarer (2002) studied the effects of controls on mobility in Danish housing markets and found

¹ UK has applied rent regulations over the period 1915-1980 and the conservative party from the “Housing act of 1980” has started to deregulate the housing market by first abrogating price controls. However, USA has various rent regulation for each state.

that the duration of a household's tenure is related to the size of the rent reduction as a typical household in the top decile of the regulated units stay six years longer than a typical household in the least regulated decile. Ault, Jackson and Saba (1994) find that New York City's rent control reduces mobility and that around 80 percent of the difference in mean expected tenure between controlled and uncontrolled units is attributable to efficiency losses from controls. Also, Gyourko and Linneman (1989) find that tenancy duration and the size of the tenant's subsidy have an inverse relationship such that the larger the subsidy, the less likely a tenant will move. Rapaport (1992) examines the effects rent control has on the probability of vacancies and occupant turnovers in New York City's rental housing stock. She finds that a rent controlled apartment is about 15 percent less likely to turn over in a three-year period unconditionally and about 8 percent less likely when other determinants of mobility are included in the regression. Other explanations deal with the housing quality issues by studying housing depreciation. Olsen (1972) argues that the question is not to figure out whether rent control induces deterioration or not nor the amount of the deterioration but rather the rapidity of the deterioration. However, Olsen (1988) emphasized that the change in the size and direction of maintenance is related to many factors, which include market conditions, landlords and tenants characteristics and the type of laws themselves and pointed out that tenants have an incentive under a control policy to substitute their own maintenance for the owners'. Rent control policy has been studied on many dimensions in Egypt only theoretically. There are few empirics on rent control. Makary (2002) argues that rent control fails to achieve its purpose and helps in transforming the housing market into an ownership-oriented system. Malpezzi (1998) shows that control units in Cairo rent for less than half of estimates of their market rent in the absence of controls.

The objective of this paper is to assess the cost incurred by landlords and tenants, if any, as a consequence of the imposition of rent control in the presence of a submarket of exempted units. It is believed that the controlled units drive the price above what otherwise would have been a free-market price. A hedonic model is used to estimate the rent that would have prevailed for the uncontrolled units in the absence of controls and will consider the difference between that estimated rent and the actual rent to be the transfer to tenants and the cost imposed on landlords.

The structure of the paper is as follows. Section 2 overviews the housing market in Egypt, section 3 outlines the methodology, section 4 analyzes data and empirical results and section 5 concludes.

2. Egypt's Housing Market Overview

2.1 Housing tenure and development of the housing market

The housing structure in Egypt is diverse. The overcrowded Cairo is characterized by *Ashwa'iyat* (slums), roof-top shanty dwellings and cemetery residences, such as the infamous 'city of the dead'. Cairo, the capital, is suffering from densification and related housing problems (Fahmi & Sutton, 2008). The housing problems are consequences of malpractices in the housing market. For instance, Key money "Klew"— an amount paid by the renter to the owner upfront is equivalent to the difference between the regulated rent and free-market rent and is used by landlords as a return on rental units (Araby, 2003). The key money practice acted as a barrier to low-income segments who cannot afford the upfront amount especially by the newly married youth. Vacant dwellings are another common phenomenon in Egypt. Wikan (1996) estimated one million vacant flats in the city of Cairo. Ibrahim and Ibrahim (2003) estimated two million vacant flats in Egypt. However, Singerman 1995 argues that Egypt suffers from vacant dwellings and not a housing crisis, as 200,000 apartments lay vacant.

The planned cities and public sector housing appeared in the 1960s and 1970s. Housing was provided by the state en masse back then. However, this was the period in which squatter and other informal settlements began appearing (El-Nahas, 2004). Two features of the housing

stock dominate the scene in Cairo today: the spread of the informal settlements at the lower end of the market and gated communities on the upper-middle to high end of the market. The former is a consequence of the low supply of public sector housing and declining funds for cooperative public housing schemes compared to the population growth and migration. The extension of the informal settlements, has been estimated at 50 to 75 percent of the building activity in Cairo (Prof & Aref, 2012). These buildings are either without permits or without title to the land and are almost deprived of services such as water, electricity and gas. The informal extensions, with a population of more than 12 million, represent a serious problem. The second feature is the evolution of the gated communities within Cairo, which appeared soon after the neo-liberal economic policies of the 1990s (Kuppinger, 2004). The Egyptian government has sold desert land to private real estate developers since then. Kuppinger (2005) argues that the gated communities are the ever-sharper distinction between rich and poor.

2.2 Housing policies and rent control legislations

Over the past decades several government policies have caused significant distortions to the housing market. Rent control is one of the worst policies passed by the Egyptian government. The rent control policy has been applied through a series of laws and regulations. Among a range of distortions, rent control was disastrous. Rent control policy has been enacted for over sixty years. There has been a combination of forms and many modifications. It takes many forms, among which: freezing the rents to levels existent at the time of the enactment or at some other time prior to enactment or rent as a percentage of cost of building unit to the owner or rent to ensure certain owners' rate of return (Bins, 2014).

Rent control has first been enacted in the aftermath of WWI in 1924 by increasing rent by 50 percent over rent paid in 1914 and was revoked in 1925 as there seems to be no economic necessity by then. It was re-enacted during WWII by decree no.151 of 1941 which abrogated the lessor from terminating the lease by the end of the specified period and gave the right to the courts under special conditions. In addition, the lessor has no right to change the rental value stated in the lease (Bins, 2014). In 1944, the current rents were set back at rates of 1941 through a military regulation and then the Egyptian parliament codified Bill 121 in 1947, freezing all rents to 1941 values for those units erected before 1944.

In 1952, the free officers took power in Egypt and passed law no.199 of 1952, which brought tenancy agreements signed between 1944 and 1952 under rent control. These rents were reduced by 15 percent below the frozen level. The housing market in Egypt has been largely dominated by foreign capital with minimum intervention from the state until the Nasserist socialist government came to power with the 1952 revolution's spirit of equity and economic reform (Araby, 2003). Under the administration of president Gamal Abd El Nasser, the government issued law no.55 of 1958 which reduced rent by 20 percent for leases signed between 1952 and 1958. Law no. 168 of 1961 reduced rent by 20 percent for leases between 1958 and 1961. Law no.46 of 1962 was an attempt to change the previous rent legislation that sets rent below the initial levels in the leases at the time of construction by calling for a special committee to set rental values at an amount equal to 3 percent of the estimated land value at the time of construction plus 5 percent of the building construction cost. The law did not function well due to lengthy delays in the process and lack of trained personnel. The government restored previous legislation through law no.7 of 1965 by "double reduction" as it reduced the units built between 1944 and 1961 by 20 percent, which had already been reduced through the three consecutive laws of 1952, 1958 and 1961. Thus, these units saw reductions twice. However, leases signed after 1961, which had been fixed by the special committees mandated by law no. 46 of 1962, were reduced by an additional 35 percent from the amount fixed in the tenancy agreements. Law no. 52 of 1969 with amendments in 1976, 1977 and 1981, formed the basis of the current rent control legislation in Egypt.

The construction of public housing has dropped significantly during the period (1965-1975), because of the diversion of national income towards military purposes, which resulted in a gap between demand and supply. The Egyptian government under the Mubarak administration attempted to address the distortions created by the rent control legislations and passed rent law No. 4 of year 1996, which exempts units erected from that date onwards from rent controls. This law is usually referred to as the “New Law,” while earlier rent legislations combined are referred to as the “Old Law” (Mansour, 2009).

2.3 Landlords-tenants conflict and landlords’ welfare

One of the unsolved problems of rent control policy is the balancing between the interests of the tenants and landlords. The relationship between landlords and tenants is the worst in the housing sector. Poor governance and a series of housing policies have disadvantaged landlords and negatively affected their welfare to please tenants. The series of housing legislations from 1941 to 1996 were pro-tenants. Tenants can only be evicted in four cases: if they fail to pay three months overdue within 15 days of notice, if the tenants rent the unit to a third party, if the tenants uses the units in a way that disturbs the peace and in the case a temporary evacuation is required for major repairs or when the building collapses (Bins, 2014). However, the tenants can’t be evicted even if the lease has expiration. Also, the landlords are responsible for maintenance to ensure the dwelling remains in proper conditions by law (Mansour, 2009). As a further disadvantage, rent control legislation permitted the inheritance of tenure up to three generations, which left the landlords with no power over their property (Fahmi & Sutton, 2008). The only units that are exempted of these malpractices are the luxury units and the furnished units (Malpezzi, 1998). This in fact has reduced the welfare of landlords significantly and deteriorated the housing stock.

Apparently, the tenancy mobility is lower for “old law” renters as compared with other types of tenure. Table 4 show the distribution of households into income quintile for those who has moved in the last five years by tenure type. “New law” renters have higher levels of mobility compared with other types of tenure. “Old law” renters, as expected, have low levels of mobility. However, the government renters and furnished renters are the lowest, which is justified as the former units are the subsidized units offered by the government for poor-income segments of the population. On the contrary, ownership is the highest, which emphasizes the fact that there is a significant spread over income quintile as with regard to ownership with higher income groups moving more rapidly than low income quintile.

Table 5 shows current rents as a percentage of perceived market values. It is obvious that for Old Rent Law, the actual to perceived market value is just 18.2 percent versus 79.6 percent for units supplied under the New Law, which assure the assumption that units supplied under the Old law (Regulated units) are underpriced compared to units supplied under the new law.

Table 6 displays the annual rent to income ratio. Rent to income ratio for the 3rd quintile is 20 percent which is moderate with slightly higher for lower income quintile and lower for higher income quintile which means that the low income quintile are more burdened under the new law rental units, however, is affordable. Though not very informative, but it indicates that the under old law tenants are not disadvantaged as they can afford new law rents where some tenants are richer than landlords.

2.4 Methodology

The housing market is a differentiated product market and housing under controls with exemptions is a heterogeneous good, defined by a set of housing characteristics. For that purpose, the hedonic regression estimates the relationship between housing prices and characteristics and determines the implicit amount of housing consumed by a typical consumer

by tenure type. To this end, the hedonic price approach is used to set up quality-adjusted price indices.

First, hedonic price functions are estimated in the controlled and uncontrolled segments of the housing market. The hedonic function decomposes a house into housing characteristics, such as number of rooms, size and other structural characteristics. A log-linear housing expenditure model is estimated with the following specification:

$$\log r = \beta X + \varepsilon$$

Where r is a vector of observed house rent by typical household, X is a $j \times k$ matrix of demographic and housing characteristics and β is a vector of hedonic prices to be estimated. The log-linear model is used as linear models usually suffer from Heteroskedasity and thus semi-logarithmic regression is adopted. Given the hedonic estimates, the log-linear coefficients are interpreted by exponentiation².

The hedonic price function is estimated for the two sectors with separate equations of the same form and a single equation was estimated for the two sectors using pooled data and adding a dummy.

Second, price index is constructed to compare the prices in the controlled sector to the uncontrolled sector of the market.

$$I_c = \sum_{n=1}^N r_{uc}(X_c) / \sum_{n=1}^N r_c(X_c)$$

$$I_{uc} = \sum_{t=1}^T r_{uc}(X_{uc}) / \sum_{t=1}^T r_c(X_{uc})$$

Where I_c is the housing price index for the controlled sector using housing characteristics (X_c) and I_{uc} is the housing price index for the uncontrolled sector using housing characteristics (X_{uc}) as weights. An index value greater than 1 indicates a higher rental housing services in the uncontrolled sector of the market as compared to the controlled sector.

3. Data and Empirical Results

3.1 Data

This paper uses the Household Income, Expenditure and Consumption Survey (HIECS) for the year 2010/2011 conducted by ERF and CAPMAS. It was conducted on a sample of 26,500 households where 16,500 were new households and 10,000 were panel households distributed between urban and rural areas with the percentage of 47.1% and 52.9% respectively. The survey provides information on household composition, socio-economic status, households' consumption expenditures on housing and other expenditures by type. In effect, the estimation of the hedonic equation decomposes the heterogeneous housing units into housing characteristics. These characteristics are broadly divided into physical, structural and neighborhood characteristics. The housing characteristics are defined quiet narrowly here due to the unavailability of data.

3.2 Results and discussion

For estimating the disequilibrium costs caused by rent control to both segments of the market, a hedonic price technique was applied. Two variables are of interest here: the free market price and quantity of the housing services. To start with, the price and quantity of housing services consumed were estimated by means of equation 1. We assume that in the absence of rent control, rents would have been at the owned market price. These prices are biased upward as the existence of rent control pushed the market prices in the uncontrolled segment of the market above the free market price that could have existed otherwise. Furthermore, the survey lacks information on local, neighborhood and, most importantly, locational attributes. Also, the physical characteristics of the dwellings were identified on a narrow scale. Thus, the variation

² A one unit change in housing characteristics causes rent to change by $100(e^{\beta X} - 1) \%$.

in the rents not attributed to the characteristics at hand is attributed to the price differences. The hedonic approach to estimating the amount of housing demanded by a typical consumer yielded housing output values. The housing characteristics variables have yielded marginal values for the prices of the housing output, where estimated prices for housing characteristics (estimated coefficients) are used as weights to compare housing dwellings.

The results estimated by the hedonic equation are presented in table (3). Three regressions were run for the controlled rental units, owned uncontrolled units and both segments of the market combined for a sample of 1,171 for controlled rented units, 6,259 for uncontrolled/owned units and 6262 for combined regression. The standard errors shown are robust estimates because of the Heteroscedasticity. Some variables were excluded because of the high collinearity between the housing characteristics in the survey and the low response rate for some other variables. However, most of the variables included are highly significant except for few and the sign of the coefficients are consistent with expectations.

The linear functional forms is restrictive, herein, the consideration of other functional forms. The often used semi-log functional form is presented in table 3 for pooled data and separate market regressions for both segments, as stated earlier. The dependent variable is the log of the gross imputed rent and the explanatory variables were divided into three categories of characteristics: **neighborhood characteristics**, including urban-rural residence; **structural characteristics**, including type of dwelling and number of rooms per housing unit; and **physical characteristics**, including electrification, source of energy for cooking, water facilities, toilet facilities, and a telephone line. Description of variables and summary statistics are shown in table (1) and (2) respectively.

The estimated parameters vary between the two segments of the market. Generally, the results are consistent with similar studies averages with R^2 ranges from 0.46 in the uncontrolled owned segment to 0.53 for controlled rental segment. The housing market has a persistent gap between housing services and welfare of typical demanders in the controlled rental segment of the market. The current demand for housing has put upward pressure on prices, creating a situation where the housing services' consumption demanded for ownership outpaces the rent sector, negatively affecting affordability.

The mean rent for an uncontrolled unit is 3400.7 compared to 2882.5 for controlled rented units. Therefore, units in the uncontrolled segment of the market are higher than in the controlled segment of the market by approximately 18 percent. By assuming that the housing characteristics are constant across time and that the implicit prices of these characteristics reflect the change to the price of the housing unit, a quality-adjusted price index is constructed by means of equation 2 by estimating semi-log regression for pooled regression. The results revealed a constant ratio of uncontrolled to controlled rents to be equal to $e^{.0845732}$ or 1.088. Therefore, uncontrolled rent is higher than controlled units by around 9 percent after controlling for quality, while about 18 percent of the discrepancy in nominal rents is due to the fact that rent control is in effect.

4. Conclusion

This paper has shown the existence of price inefficiency in the housing market in Egypt. The Hedonic analysis indicated that the rent in the controlled segment of the market was higher than in the uncontrolled segment. It extends to the uncontrolled segment affecting the market price of owned units that would have prevailed had the rent control not been in effect. These results support the hypothesis that rent control has affected units not subject to rent control. The results of the hedonic regressions reveal that water facilities, toilet facilities, number of rooms and source of energy are important determinants of prices of the housing units. The prevalence of a significant relationship between dwelling characteristics and imputed rents reveals the importance of hedonic models in determining house price.

This paper has actually shown that rent control has resulted in welfare losses not only to landlords but also to tenants, as rent control discriminates in favor of the occupants at the expense of outsiders, and significantly offsets tenants' welfare benefits. To this end, the existence of rent control with exemptions has many complications since not too many tenants enjoy lower rents and this is in fact at the expense of higher renters incurred by the majority of the tenants' population. Similarly, some landlords receive higher rents and the majority receives lower rents, which has a severe impact on the housing units.

Apparently, the rent control policies are shortsighted and are usually taken by administrations to please certain groups, most often the majority at the expense of the minority. As a consequence, the disadvantaged groups who may have had legitimate rights suffer for years, which makes it impossible to deprive the beneficiaries from the cream that they have been hoping for for so long. Factually, the rent control policy had to be relaxed as it proved not to serve its purpose and has deteriorated housing stock and housing sector investments. Realistically, it is impossible to let go of rent control at once. However, the government should direct its effort toward modifying the regulations and attracting investment in a way that makes the regulated residential units unattractive and enhances tenants' mobility.

The housing crisis in Egypt is a matter of governance. The government can only eliminate the current distortions on a gradual basis by playing two vital roles. The government should play the role of a regulator to the upper end of the market and an enabler to the lower end of the market. The first task can be done by calling for committees to value the housing stock and then apply necessary amendments by abolishing Rent Freeze on Units in upper class districts. This mission faces difficulties in that the resources are not enough and there is a lack of tools and trained personnel in addition to the high institutional corruption, which might worsen the situation as it requires monitoring from the side of key institutions that is not feasible. The second role of the government is to act as the enabler to the lower end of the market through facilitating access to mortgage loans and encouraging private suppliers to engage in supplying lower cost units. The good governance in this regard will facilitate access to affordable housing. In conclusion, the housing crisis in Egypt is no coincidence but rather a cumulative consequence of a series of housing policy distortions combined with socio-economic problems. The housing stock deficit is purely a matter of governance.

References

- Ault, Richard W., John D. Jackson, and Richard P. Saba. 1994. The Effect of Long-Term Rent Control on Tenant Mobility. *Journal of Urban Economics* 35(2): 140-158.
- Olsen, Edgar O. 1972. An Econometric Analysis of Rent Control. *Journal of Political Economy* 80(6): 1081-1100.
- Olsen, Edgar O. 1988. What Do Economists Know about the Effect of Rent Control on Housing Maintenance? *Journal of Real Estate Finance and Economics* 1(3): 295-307.
- Bins, B. (2014). THE EFFECTS OF RENT CONTROL IN EGYPT- PART I *, 3(2), 151–166.
- El-nahas, N. A. I. (2004). A Suggested Strategy Towards an Effective Treatment of Housing Crisis in Egypt, 1981(1907).
- Fahmi, W., & Sutton, K. (2008). Greater Cairo's housing crisis: Contested spaces from inner city areas to new communities. *Cities*, 25(5), 277–297. doi:10.1016/j.cities.2008.06.001
- Gyourko, Joseph, and Peter Linneman. 1989. Equity and Efficiency Aspects of Rent Control: An Empirical Study of New York City. *Journal of Urban Economics* 26(1): 54-74.
- Ibrahim, Fouad N and Ibrahim, Barbara (2003) *Egypt: An Economic Geography*. I.B. Tauris, London, New York.
- Kuppinger, Petra (2004) Exclusive greenery: new gated communities in Cairo. *City & Society* 16(2), 35–61.
- Kuppinger, Petra (2005) Globalization and exterritoriality in metropolitan Cairo. *The Geographical Review* 95(3), 348–372.
- Makary, S (2002) *The Real Estate Sector in Egypt*. American University in Cairo Press, Cairo.
- Malpezzi, Stephen (1998) Welfare analysis of rent control with side payment: a natural experiment in Cairo–Egypt. *Regional Science and Urban Economics* 28, 773–795.
- Mansour, S. (2009). New Law , OLD PROBLEMS :, 40–43.
- Munch, J. R., & Svarer, M. (2002). Rent control and tenancy duration. *Journal of Urban Economics*, 52(3), 542–560. doi:10.1016/S0094-1190(02)00502-8
- Prof, A., & Aref, H. (2012). State versus civil society : An approach to affordable housing in Egypt : Policy and practice.
- Rapaport, Carol. 1992. Externalities, Government Intervention, and Individual Responses: Rent Regulation and Housing-Market Dynamic. *American Economic Review* 82(2): 446-451.
- Wikan, Unni (1996) *Tomorrow God Willing. Self-Made Destinies in Cairo*. University of Chicago Press, Chicago.

Appendix

Table 1: Description of Variables

Variables	Description
Tenure of Dwelling	=1 if rented
Neighborhood characteristics	
Urban-rural Residence	=1 if urban and 0 if rural
Structural characteristics	
Type of Dwelling	=1 if apartment
Number of Rooms	Number of Rooms
Physical Characteristics	
Electrification	=1 if electrified
Water facilities	=1 if piped supply
Toilet facilities	=1 if yes and connected to sewage
Has a Telephone	=1 if own one or many
Source of energy for cooking	=1 if gas

Table 2: Summary Statistics

	Mean	Standard Deviation	Minimum	Maximum	Observations
Imputed Rent	3400.088	4157.401	120	120000	6262
Tenure of Dwelling	1.966317	.5854372	1	4	7719
Neighborhood characteristics					
Urban-rural Residence	.4646975	.4987845	0	1	7719
Structural characteristics					
Type of Dwelling	2.710455	.8390775	1	4	7719
Number of Rooms	3.667833	1.242877	1	15	7719
Physical Characteristics					
Electrification	.9955953	.066226	0	1	7719
Water facilities	1.132141	.450909	1	5	7719
Toilet facilities	1.480762	.5172451	1	3	7719
Has a Telephone	.9014121	.2981272	0	1	7719
Source of energy for cooking	2.008162	.1207248	1	5	7719

Table 3: Hedonic Regression

Dependent variable: log (Rent) - Adjusted gross imputed rent

Independent Variables	Pooled regression (1)	Separate Market Regressions	
		Rental Controlled Units (2)	Ownership (3)
Tenure of Dwelling	.0845732***		
Dummy (=1 if controlled)			
Neighborhood characteristics			
Urban-rural Residence	.3592927 ***	.3089953 ***	.3632496 ***
Structural characteristics			
Type of Dwelling	.3260602 ***	.4284432 ***	.3197461 ***
Number of Rooms	.1467066 ***	.149344 ***	.1511535 ***
Physical Characteristics			
Electrification	-.0204802	.2042369 *	-.0282257
Water facilities	.1097811 ***	.1790014 ***	.1112705 ***
Toilet facilities	.2432162 ***	.1844501 ***	.2408192 ***
Has a Telephone	.2026782 ***	.2450751 ***	.2007451 ***
Source of energy for cooking	.1399696 **	.1182193	.1384002 **
Intercept	6.401984	6.059474	6.468032
R ²	0.4712	0.5361	0.4693
Observation	6262	1,171	6,259

Notes: Significance level is denoted by *** 1 percent, ** 5 percent and * 10 percent.

Table 4: Tenant's Mobility

Tenure Type	1 st Quintile	2 nd Quintile	3 rd Quintile	4 th Quintile	5 th Quintile	Total
Old Rent Law	51	76	81	93	78	379
New Rent Law	183	292	310	312	323	1,420
Government Rent	5	5	9	5	2	26
Furnished Rent	2	1	2	1	1	7
Ownership	258	252	220	265	364	1,359

Note: Tenure Type by Income Quintile for Those who have moved in the Last Five Years. Ownership includes ownership by Construction, by inheritance, by purchase on market and others.

Source: 'Housing Study for urban Egypt' conducted by TAPR II Team, USAID (2008).

Table 5: Actual Rent as a Percentage of Perceived Market Value

Type of Rent	Actual Rent as a % of perceived market value
Old Rent Law	18.2
New Rent Law	79.6
Government Rent	18.5
Furnished Flat Rent	81.2

Note: the no. of tenants for old rent law is 5807, new rent law is 1,896, government Rent is 180 and furnished flat Rent is 8

Source: 'Housing Study for urban Egypt' conducted by TAPR II Team, USAID (2008).

Table 6: Annual Rent to Income Ratio

	1 st Quintile	2 nd Quintile	3 rd Quintile	4 th Quintile	5 th Quintile
Median HH Annual Income (LE)	7,500	9,600	12,000	14,400	23,400
Median Annual Rent (LE)	1,800	2,130	2,400	2,640	3,600
Annual Rent to income Ratio (%)	24	22.2	20	18.3	15.4

'Housing Study for urban Egypt' conducted by TAPR II Team, USAID (2008). Note that rent to income ratio is for new rent contracts in the last five years by income quintile.