Economic Logic of Apartment Unit Designs

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Abstract
In this study, we discuss the unique characteristics of apartment unit plan design in Korea, which we assume to have been influenced by economic logic. This research is based on two basic approaches in looking at the apartment: first is from the functional approach that an apartment is a “home” where people live; and second is from an economic approach of viewing an apartment as property with economic value. This study focuses on how the unit design of apartments in Korea has evolved, and how use value and exchange value have influenced this change. Use value is related to the characteristics an apartment has as a “home” while the exchange value is related to its characteristics as property. For the purpose of this study, “Effective Area” is suggested as a conceptual parameter for the description of use-exchange value of the apartment.

It is argued that the use value and exchange value have produced specific physical characteristics in the unit plan: the predominance of the living room-centered unit plan over the bedroom cluster; the prevalence of the stair type building apartment over corridor types; the emergence of wrapping balconies; and the reduction of closet areas in the unit plan. These characteristics are the results from the dominance of the exchange value in plan design, and do not always enhance the use value of the housing.

Keywords: apartment unit design characteristics; economic influence; use value; exchange value

1. Introduction
The apartment is the predominant type of housing in South Korea today, even though modern apartments were introduced only forty years ago. The successful adaptation of the apartment is not only a result of the livability that it provides, but also a mixture of various factors. Therefore, the popularity of the apartment should be understood from a variety of approaches, not just from a view that looks at the physical benefits. To fully understand how apartments were introduced and why they are the predominant type of housing in the real estate market, we need a viewpoint that does not overlook economic reasons and influences. In other words, one of the main assumptions should be that apartments are commodities.

In general, demand for housing is driven by two values: the use value and the exchange value (Ha, S. G., 1991: 139). One of the main reasons people in South Korea buy an apartment is to own real estate property. In the market for newly built apartment complexes, in particular, there are many speculative buyers driving competition. This study aims to identify the influence of exchange value in the apartment unit plan and housing market. To identify the driving factors behind use value and exchange value, we need to look at apartments as commodities. Use value is assumed to be the value generated from the physical features and unit plan design, and exchange value is the value generated from the economical efficiency for trading in the market. In this study, we aim to define the elements that compose or drive these two values of an apartment house.

Until now, use value has been the main focus of researchers that use an architectural approach, while exchange value has been the focus of socio-economic researchers. However, to truly understand the relationship between, and dynamics behind use and exchange value, we need to take a multi-façade approach. To find the architectural implications, we need to focus on the physical characteristics of an apartment as a commodity.

In this study, we suggest that “area” can be used as a planning element to describe use value and exchange value. This is based on the fact that area is the first determinant in price evaluation and is also an important measurement factor when considering the quality of housing from a living perspective.

2. Framework for study

2.1 Previous Research and Analysis
Existing research about apartment housing in South Korea can be divided into three groups according to the approach used.

The first group is the school that looks at apartments from a design and planning perspective. The main area of interest for this group is the interpretation and

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assumptions used to create and develop the design of the apartment. This group focuses on apartment plan development based upon design precedents. Many studies highlight unit plan typology by identifying historical design trends and patterns with the aim of gaining a better practical understanding to improve plan efficiencies (Kim, S. A., 1992). Kang, I. H. (1997) tried to identify what competitive advantages apartments had over other types of housing, especially detached houses. He compared the structural characteristics and elements of each housing type from the custome’s viewpoint. This school of research investigated the different types and conditions of built environment, but their discussions intentionally left out economic considerations. In short, there were few studies that looked at the design and planning of the apartment as a commodity. Seomoon, Y. (1998) listed the elements that made apartments attractive as a commodity in the housing market, and analyzes the time series trends. Since this topic had hardly been studied, he identified a number of commercialization elements and articulated them one by one. The design and planning approach has fundamental limitations: it rarely considers the commodity value of an apartment. Therefore, more integrated and interdisciplinary studies, which cover both economic conditions and housing policy, are needed to overcome this limitation.

The second group is those who study housing policy and marketing to create more demand for apartments. Park, C. S. (1999) examined the influence the housing supply system had on the unit plans of the apartment. The supply system in Korea is governed through two instruments: control on boonyang prices and mandatory housing deposits required to bid for boonyang rights. This school believed that government intervention in housing supply resulted in apartments with specific and identical characteristics. The houses were usually a certain size, had little common area and longer balconies. The findings of this study, however, do not explain the relationship between the economic aspects and actual living aspects of the apartments. The fact that marketing could actually lessen the lived utilities of the house was not touched upon.

The last group did try to shed light onto apartments as commodity using various approaches, but they did not succeed to explain the complex relationship between market value and real living value. However, this relationship is important in understanding the apartment as a factor that contributes to lifestyle conditions.

This paper studies the economic value of the apartment and its influence on unit planning to narrow the gap between the aforementioned schools of research. The reasoning behind this topic and the method of research shall be described in more detail in the following pages.

2.2 The Basic Framework

2.2.1 Applying Value Theory

As mentioned above, a house can be regarded as both an investment and a consumption product. In some cases, adding economic value does not necessarily mean adding use value. This indicates that designs can be driven by two very different motivations. We need to look at these two elements together in order to explain how particular design features took root. In this paper, we apply value theory to highlight the cause and effects of various values on apartment planning.

In classical terms, use value represents the real life usefulness, while exchange value represents purchasing power provided by ownership of the good for other goods (Hunt, E. K., 1979). We use these terms broadly and fundamentally to include the meanings in relation to design implications.²

2.2.2 Apartment Use Value

We regard use value as the contribution of the apartment as a home. Use value is linked to general concerns about architectural design and planning, such as reasonable zoning, functional circulation, useful space organization, and privacy planning. Harvey, D. listed seven elements that composed the use value of house as follows:

1) shelter 2) a quantity of space for exclusive use by the occupants 3) privacy 4) a relative location which is accessible to work places, retail opportunities, social services, family and friends, and so on 5) a relative location which is proximate to sources of pollution, areas of congestion, sources of crime and hazard, people viewed with distaste, and so on 6) a neighborhood location that has physical, social and symbolic (status) characteristics 7) a means for storing and enhancing wealth. [Harvey, D., 1973: 159]

In his urban study, Harvey included “enhancing wealth” as an element composing the use value of a house. However, for the purpose of this paper, we will exclude this element to concentrate on the pure physical usefulness, while keeping the concept of houses being a shelter and a private space shall remain valid. Therefore, the operational definition for the use value of the apartment can be restricted to the satisfaction and usefulness of the apartment.

2.2.3 Apartment Exchange Value

Exchange value can be understood as the potential economic value reflected in the price, regardless of the usefulness of the house. It is not based on living, so it is different from use value, and in some cases is the direct opposite. In plain terms, exchange value is market price. For the purpose of this paper, however, exchange value shall be defined as the value created by designing and planning efforts focused on increasing commercial attractiveness. Therefore, the definition used here is somewhat different from that used in economics. In general, housing prices are heavily driven by external factors, such as the neighborhood environment and schools. The definition of exchange value for the purpose
of this study shall be limited to just the value creating elements coming from the plan design.

One issue that emerges in separating these two values is that it is difficult to draw a clear line between the two. If a particular design element contributes to increasing the value of the apartment, it is difficult to say whether that value is just the use value or exchange value. For this reason, in this paper, use value will a conceptual focus on enhancing lifestyle and convenience, while exchange value the one on price determining elements not related to dwelling.

2.2.4. Effective Area

When discussing value, it is difficult to find an effective tool or standard for quantification. In order to be able to compare and contrast, we need a common ingredient of each value. It needs to be an ingredient that can be manipulated as a parameter and can be used to advance studies. In this paper, we used “area.” Area is a dominant factor when deriving apartment prices or exchange value. In addition, it also is an important factor from a living perspective in the highly populated urban situation in the greater Seoul area. According to the annual survey on residential patterns issued by the Korean National Housing Corporation (“KNHC”), people looking to buy a house put priority on size. A majority of respondents to the survey answered that unit area was an important measurement standard. In particular, area can be used comparatively because not only are housing prices dominated by area, but because real use area is also deeply related with dwelling satisfaction. In

The area of an apartment plan is generally broken up into common areas, dwelling areas, service areas, and other areas. This breakdown, however, is based on building and construction codes, not on real life area. To understand the unit plan from a consumer or real user’s perspective, we must redefine the area in an apartment unit. This definition should include service area, which is usable area, but exclude other unusable areas in order to reflect actual life.

Fig. 1 is an example illustrating Effective Area, which as mentioned above includes service area, but excludes unusable areas. In this illustration, the living room area is marked as “li,” corridor as “cor,” front balcony “b1,” back balcony as “b2,” and closet “CL.” The Effective Area in this unit plan is the aggregated total of the li, b1, and b2 areas, which does not include CL and cor. Effective Area is the actual living space used by the occupant or furniture.

The value of an apartment is determined by the unit plan design, as well as parking area, service area, view, and supporting facilities. Balconies: Large balconies are services areas and provide a space that can be used in a variety of ways. There are surveys that indicate that balcony area influences housing prices even more than dwelling area. [Chosun Ilbo, Newspaper Article, 2000.5.1]

This article points out the importance of useful service area in creating value. For consumers, the actual value is not limited to the value of the legally defined areas of common area, dwelling area, and service area, but expands beyond to include areas that are actual life areas.

3. Increasing Exchange-Value in the Unit Plan

3.1 Dominance of Living Room-centered Designs

3.1.1 Typical Korean Style: Living Room-centered Designs

The most typical apartment pattern in Korea is the so-called “living room-centered” plan. The patterns vary according to size, but they all share the common fact that the living room is located in the center of the plan. For a 4-bed room-house, the living room is in the center of the unit, with bedrooms and other rooms in the corners. Illustration A of Fig. 3 in next page shows the typical plan of a living room-centered apartment.

One very interesting fact is that this pattern that is typical today was not found in the 1960s, when apartments were first introduced. However, they started to become the predominant apartment design in the late 1970s. Due to the location of the bedrooms, the living room, dining room, and kitchen is in actuality one space. There are many theories explaining the reason why. Cultural behavior study says that the current structure of the apartment plan actually comes from traditional urban housing called “urban-style Han-Ok (Choi, J., 1997).” The open area in the center of the house, achieved by combining the dining room, kitchen, and living room, is a main factor in understanding this unique design (HR Group, 1999). Another explanation is that developments in construction techniques and lifestyle changes led to a separate heating system for cooking and heating. This ultimately gave housing designers freedom to move the kitchen, and cluster it with the dining room and living room (Lee, S. H., and Park, Y. H., 1997). These papers all provide a reason for the typical pattern, but these explanations are not based on the assumption that the apartment is a commodity.
The concept of “openness” is ambiguous and can have a variety of meanings. In addition, the fact that the heating system was separated does not provide a sufficient answer to why the unit plan design changed. To analyze the economic motives of changes in plan design, we first need to start by looking at the brief history of apartments in Korea.

3.1.2 No more Bedroom Cluster-type in the 1980s
The bedroom cluster unit design was used to build Hangang Mansion, Banpo, Jamsil 5th KNHC, and other apartment complexes in the early and mid 1970s. These designs are quite different from the present living room-centered. The figure below shows a basic example of a bedroom cluster plan type. It seems that this design was influenced by western apartments, which separated dining and sleeping space. However, from the 1980s on, this type of bedroom cluster disappeared, and the aforementioned living room-centered design dominates. Recently, there has been some revival of the bedroom cluster in large-sized “complex housing”, but from a legal and building use perspective, this housing cannot be regarded as a general form of apartment. Therefore, we can conclude that bedroom clusters gradually evolved into living room-centered unit plans. During this process, the corridor area was changed into real living areas, such as living rooms or other bedrooms. As a result, this change created a larger living room area.

For 112m²-sized Jamsil 5th KNHC Complex apartments built in 1976, the living room-centered units [Type A] have 1.65m² more usable space than bedroom clusters [Type B]. In addition, Type A does not waste the corridor area, and the depth of the entrance is shorter. Moreover, the space around the living room is opened, so it looks larger than it actually is. From this comparison, we can infer that the bigger area was customer appealing. Apartment newspaper advertisements during the 1990s emphasize the fact that they “maximized the dwelling area” (Sohn, S. K., and Kim, S. E., 200). This is an indirect indication that area attracted customers.

3.1.3. Price Comparison: Living Room-Centered vs. Bedroom Clusters
The dominance of the open living room-centered plan indicates that consumers preferred it in the market. The stronger the preference for the open living room style, the higher the prices for this type of apartment. In general, price is driven by external factors, of which location is the strongest consideration. To make an apples-to-apples comparison between living room-centered and bedroom clusters, we needed to select samples, which were identical in all aspects except layout. The location of the units had to be in the same district to discount external economic factors. The only sample that meets these conditions in Seoul is the Jamsil 5th KNHC. This complex has both 112m²-sized and 118m²-sized units which have both Type A and Type B layouts. We surveyed the price of the units by interviewing local real estate brokers and asking for quotes, because real estate magazines or the Internet only quote the highest and lowest price by size. We discovered an interesting fact: according to the records of the real estate agents, the general price of a 112m²-sized unit was about 500 million Won, and Type A was 20 million Won more expensive than Type B. It is difficult to say that this 20 million Won was due to a difference...
in the use value. In other words, there was a clear
difference in the exchange value, though it may not be
easy to pin point the exact reason.

3.1.4. Increasing Exchange Value 1: Expanding Effective Area

As mentioned above, the exchange value of the living
room-centered unit is higher than the bedroom clustered.
Increasing Effective Area, in simple terms, means getting
rid of wasteful corridors and reallocating space reasonably. Of course, one of the basic principles of
designing is to make the space more economic and
efficient. Since area a very expensive resource in cities,
designers and architects take floor space distribution very
seriously. This is the reason we used Effective Area is a
parameter in this paper.

Even if an apartment has the same dwelling area, if the
Effective Area is different, it does not provide the
same usefulness to consumers. Areas that are wasted or
not effective are not only an economic loss, but also a
“living loss.” As explained above, this loss is reflected
in the unit price, as we can see in the example of the
price difference in the two types of KNHC apartments.
In short, living room-centered layouts have become the
main unit pattern, because of design improvements and
consumer preference, which phased out other types.

An increase in Effective Area does not only increase
exchange value. Although a larger house is generally
more expensive, size could also be important in terms
of use value. In the greater Seoul area, population is
dense and there is a general shortage of housing, so
apartment builders try to make more effective and larger
dwelling space. The main reason that the use value of
area is emphasized is because apartments are property.
The fact that exchange value, not use value, has driven
price increases has let to the characteristics apartments
have today.

3.2. Predominance of the Stair-type Apartment

3.2.1. Corridor Type and Stair Type

Corridor apartments are buildings, which link the
horizontal apartment units with a corridor located in the
back of the building. These horizontal corridors are
connected vertically by stairwells. In this type of
building, occupants approach their home from the back-
side of the unit, which opens to the horizontal corridor.
On the other hand, the stair type apartment is the typical
and standard type of apartment, in which a pair of units
shares a stairwell. In this type of building, dwellers
approach their home by the flank of the unit.
Traditionally, large-sized apartments have been built in
stair type buildings, and smaller-sized in corridor types;
however, this trend changed in the late 1980s, because
of economic feasibility. Now, even small apartments are
stair type. From 1983, the amount of stair-typed 82m²
unit apartments accounted for half of the total apartment
housing supply. As shown in the chart below, from 1983
larger apartments, such as units 115m² in area, started
to be mostly stair type buildings. From the late 1980s,
corridor buildings start to phase out significantly.

Chart 1. Building Type Changes in 115m² Unit (4LDK)
*Source: Choi, J., 1996a

3.2.2. Stair Type’s Advantages over Corridor Type

In order to compare corridor type vs. stair type, we
approach this issue from an economic approach, rather
than a planning approach. For stair types, construction
companies need bigger budgets to build stairwells,
because only two vertical rows of units share the stairs.
In addition, the dwelling area does not include stairwells,
which are classified as common areas, so actual gross
area is less. Corridor types cost less to construct, but
stair types have the following economic advantages:

- Less interior corridor area
- A large Effective Area: the living room
- Possible expansion into the back balconies
- Openness in the combined living room, kitchen,
dining room area

For stair type buildings, the entrances are not in the
back, which saves entrance space. In addition, the
entrance is usually located at the side as shown in Fig.
4, which makes the layout more flexible and space easier
to use. In the corridor type, there is space inevitably
wasted, because of the circulation in and out of each
room. Shaded areas in Fig. 4 show how stair types are
better in terms of Effective Area. Stair type layouts enable
the owner to add space to develop the apartment value.

3.2.3. Increase Exchange Value 2: Stair Types as the Basis

The stair type plan has one drawback though, which
is that it has relatively small bedrooms. This type of
apartment is usually designed to emphasize domestic
public space (living room and dining room). Many
consumers have responded to the KHNC annual survey emphasizing the importance of public space, so this drawback is not necessarily a weakness. In addition, stair type layouts are more private.

In terms of construction costs, corridor types are more economic, but if the Effective Area created in the stair type is taken into consideration, the marginal construction cost increase is not an issue. One of the major strengths of stair types is that the layout is flexible, so occupants can make changes to increase value, such as expand back balconies, reduce corridor space, and increase living rooms. These chances directly or indirectly result in an increase in exchange value. Therefore, stair type buildings are regarded as the basic foundation for value enhancement. It is also true that the use value that only stair types have created the changes in building types during the past 20 years. However, the predominance of the stair type apartment can be explained using exchange value in the sense that specific features can be adopted to intentionally expand the Effective Area.

3.3. Wrapping Balconies

3.3.1. Apartment Balconies in South Korea

Unlike other countries, apartment balconies in South Korea today are designed to wrap around the unit’s whole surface. When apartments were first introduced, balconies were only built in the front of the living room area. However, balconies gradually grew to as many surfaces as possible. In many cases they are remodeled into expanded room space.

Chart 2 shows time series trends on the number of balconies. With the emergence of the stair type building, the backside of each unit could be used as balcony space. The number of balconies increased (not including early 1970 when samples were limited), and almost matches the number of façade bays in 1995.

3.3.2. Customers’ Views

Balconies have been excessively applied all around the unit, but users are not fully satisfied with them. A survey on the use of the balcony says that 77% of the respondents use balcony space as storage space even though the initial intention of the space is to create an area that is open to the outside (Oh, D. S., and Yoo, I. W., 1999: 104). Even in psychological evaluations, balconies do not get positive responses. The presence of the balcony makes the consumer insecure about the privacy of the individual bedroom (29%) and a bedroom balcony makes them feel oppressed and uneasy (22%), because balconies in front of the living room and bedrooms are connected to each other (Ibid., 114). The current use of back-balconies, in particular, which include a utility room or laundry room, is an indicator showing that actual service is not enough. Architectural codes restrict the depth of the balcony to be 1.5m. Moreover, consumers do not pay property tax in South Korea for this 1.5 m. Due to this restriction, most balconies have been designed to be shallow and wide. Some believe that this unique form is why balconies are underused in living, but even the Olympic Apartment Complex, which have deep, rectangular balconies, are transferred into interior space or utility space. This indicates that the balcony issue is not about use but about area.

3.3.3. Increase Exchange Value 3: The Economic Value of the Balcony and Effective Area

Although consumers were not satisfied with the balconies, they were popularly built since the mid 1990s. To understand this paradox, we need to investigate the economic value of the balcony. If the balcony area is enlarged, the price of the whole unit should increase accordingly. However, the Korea Housing Institute reported that a 2~3x increase in balcony area resulted in a 9.5~15.5% rise of unit price (Koo, B. C., 2001). For a 100-sized unit, the balcony area is usually 10% of the whole unit area. If the balcony is enlarged by 10 (which is twice the original balcony area), it translates to be a 10% area increase and 9.5% price increase. The relationship between area expanded and price increase is almost linear. Having a higher area cost more is reasonable, but this linear relationship is a price distortion, because the balcony is not considered a part of the other dwelling areas. When thinking of the location and form of the balcony, we cannot assume that it has the same utility with other space, such as the living room or kitchen. Therefore, we may conclude that the balcony area, although not being used as a dwelling area, has the same exchange value as other general areas.

The Chosun Ilbo (2001.5.1) article reported that balcony area affected price more seriously than other parts of dwelling area. The title of the articles was “Look at the house sample, and you can see money.” Apartment constructors are aware of the importance of the service area, including balcony area. Therefore, the balcony is designed to maximize the Effective Area not because its use value, but because of its exchange value in the market. Another side-effect is that over-designed balconies lead to an erosion of exterior space.

3.4. Reducing Closet Space

3.4.1. Closet Space Changes in the Apartment Unit

When apartments were first introduced in the 1960s and the early 1970s, apartments had a sufficient amount of closet space. Even the smaller Mapo apartments built
in 1962 had one or two closets per bedroom or living room. However, closet space gradually started to disappear in the late 1970s. In the Jamsil 5th KNHC Complex built in 1976, there are no closet spaces in the plans, even though this was a government project.

This change in closet space became more general, and most apartment houses built after the 1980s have only tiny closet areas (HR Group, 1999: 403). Chart 3 shows the trend in closet space in apartments from 1970. The spots show that the ratio of closet area over dwelling is on a downward trend in the 1990s. The ratios after 1985 are all below 0.06.

The small closet spaces do not satisfy the minimum requirements recommended by the housing government and researchers. The apartments built in the greater Seoul area, which is the capital district, after the 1990s do not have enough space for storage, regardless of the size of the apartment (Cho, S. K., 2000: 45). The following table shows the requirements and standards for storage space.

Although the government and KNHC recommend that the storage room or closet space should be about 3m², most apartment storage does not even come close. On average, it usually is about 1.5m², which is half the size of the requirement.

3.4.2. Consumer Satisfaction on Closet Space

Though storage space trends decreased, consumers actually require more space. We can find reports showing that consumers are not satisfied in various surveys and newspapers (HR Group, 1999; Chosun Ilbo, 1996.5.15; 2001.5.1). According to Chosun Ilbo’s survey, 70.8% of respondents answered that they were not satisfied with the closet space area, because it was not enough. The annual report by KNHC points out every year that a 1.5 storage room cannot satisfy normal living standards. Therefore, balconies are used as additional storage space.

3.4.3. Increase Exchange Value 3: The Conflict between Effective Area and Closet Space

Cho argued that closet space reduction is the consequence of a commercial pursuit to try to make the unit look larger (2000). Recent lifestyles usually lead to more personal possessions than in the past, but since there is less closet space, the result is less space efficiency and livability of the apartment. Closet space has been designed to nominally satisfy architectural codes for unit plan design. As pointed out earlier, although a majority of dwellers are not satisfied with the insufficient closet space, storage space cannot have priority in plan design, because it is a hidden space, which is not related to the Effective Area. Closet space does not contribute to the openness of the living room-dining room-kitchen combination and is not considered an additional service area. If we think only about the available area for living, storage area seems to be a less important element in unit plan; however, it is a necessary part of real dwelling life. When storage area is increased, the actual dwelling area decreases. For this reason, there has not been serious though in planning. The overemphasis on the living sector over the support/service sector makes consumers voluntary adapt to all the inconveniences resulting from insufficient storage space.

4. Conclusion

As stated earlier, our approach is based on value theory, in which the value of the apartment is divided into the property value and the value of the shelter as a home; the former is exchange value and the later use value. We studied the way each value influenced the apartment unit plan. The purpose of this approach is to find the fundamental driving forces to the design of the layout. The findings of this study can be summarized as follows:

a) The apartment plan is driven to enlarge the Effective Area to increase the value of the property; and b) elements, which contribute to enlarging the Effective Area, have higher actual and potential exchange value.

The apartment plan having the characteristics above can be explained with the factors below:

1) The phase out of the bedroom cluster plan type and the subsequent emergence of the living room centered plan type. The lower exchange value of the bedroom cluster relative to that of the living room centered plan type explains why the former changed to the later. 2) Predominance of the stair building type apartment: The stair building type apartment’s comparative advantages
over other types result in an increase Effective Area, which results in an increase to the exchange value. 3) Balcony over-adaptation around the surface of the apartments. Balconies, the stereotype service area, can be transformed directly into living area. This transformation is just a temporary way to expand Effective Area. 4) Closet space changes in apartment units. Although closet area is very useful space (i.e. high use value), it usually is designed to not even meet the minimum standard, because in the market, price increases with more Effective Area.

To understand the findings of this study, we can conclude that apartment unit plan is not optimized for to facilitate dwelling, or increase the use value, but for to increase the exchange value. The economic determinant is mainly related to the unit’s Effective Area. In the pursuit of Effective Area, apartment unit plans has been designed to satisfy the characteristics mentioned above. It is through this conflict between use value and exchange value that the characteristics of the Korean apartment plan has emerged.

This study suggests that elements of apartment planning need to be analyzed with economic valuation. With the help of this approach, we can understand the fundamental factors underneath the physical changes of the apartment plan type. Although apartment dwellers may complain about their homes, they usually are satisfied with the economic value created from their apartment property. They give tacit permission to the uniform and dry form of the apartment houses, although they know that these apartments cannot fulfill their wishes as homes. Recently, many apartment builders have been attempting to try out new types of apartment houses. Nevertheless, we can assume that the fixed plan type will not change, if such alteration does not result in an increase in exchange value.

References
2) Choi, J. (1996a) A Diachronic Analysis of the Unit Plan Changes in the Context of Space Syntax Model for the 4LDK Apartment Unit Plans in Metropolitan Seoul Area. Journal of the Architectural Institute of Korea, Vol.12 No.7 (Serial No. 93)
10) Kim, S. A. (1992) Inflexible Pattern of Apartment Unit Plan I; II; III. Journal of the Architectural Institute of Korea, Vol.8 No.4 (Serial No. 42); Vol.8 No.6 (Serial No. 44); Vol.8 No.7 (Serial No. 45)

(Footnotes)
1) It was reported that competition was 40:1 and 70:1 in some areas in the bid to acquire hoonyang rights (defined as the initial right to buy a new apartment unit). [Chosun Ilbo, newspaper article, 1977.4.21].
2) This study actually owes Logan and Molotch’s work (1987). The idea that the use and exchange value of the apartment can be separated derives from their conceptual framework on urban city life. They too studied urban space with value theory although the scope of research is significantly different from that of this paper.
3) “According to the Survey on Housing Purchasing Value, the most important factor for consideration when a buyer chooses a house is the space of the living area. When asked what the most important factor was, “area” was the answer given by 22.5% of the respondents, while other factors only accounted for under 11.8%.” Kim, Y. J. (2001) Identification of Buyers’ Influencing Factors in the Assessment of Purchasing Value of Housings and Its Applications to Marketing Communications, Ewha Woman’s University, p. 38.
4) Apartment complexes which have bedroom cluster-type designs were built as follows: Hangang Mansion, size of 105m 2, 122m 2, 168m 2 and 181m 2, in 1970; Banpo 1st Complex, size of 105m 2 (flat and maisonette), 118m 2 and 138m 2, in 1972-74; Jamsil 5th Complex, size of 112m 2 and 118m 2, in 1976; Hangang Hyundai, size of 148m 2, in 1974; Apgujeongdong Hyundai 1st Complex, size of 158m 2, in 1975; Apgujeongdong Hyundai 2nd and 3rd Complex, size of 158m 2 (A) in 1976, Bangbai Samho, size of 283, in 1976.
5) The floor Design of the Hangang Mansion apartment was experimental in many ways. It attempted to adopt a western standing kitchen and to divide eating and sleeping space. The main purpose was to try to modernize lifestyles. [Korean National Housing Corporation, 1992: 376]
6) At that time, modernization was used as a synonym to westernization. [Hansol, Samsung, Keumkang, and Keumsan real estate agents, Records as of July, 2002.
7) The exchange rate as of July 24, 2003 is 1,180 Won per US dollar.