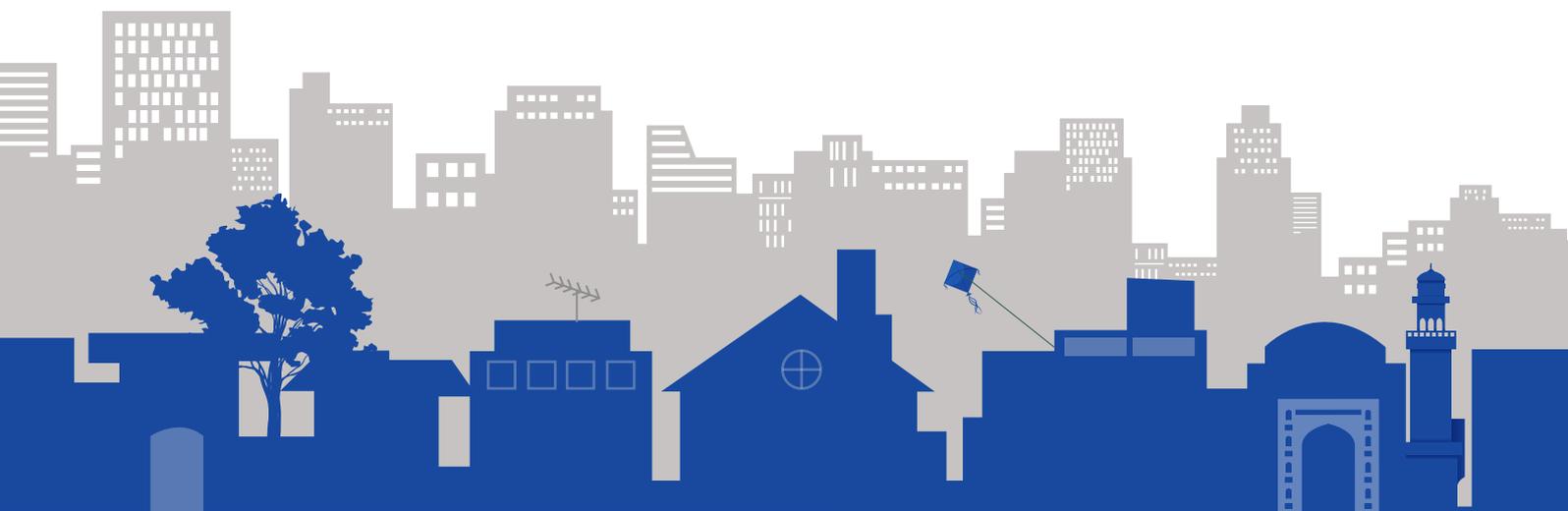


Designing Affordable Housing Policy

Ibrahim Khalil
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December 2019



Bismillah irr Rahman irr Rahim

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Ibrahim Khalil, Umar Nadeem

Abstract

This working paper builds on an earlier series of efforts to assess and analyse the Naya Pakistan Housing Program (NPHP) and its nexus with the goal of affordable housing for all in Pakistan. The following publications provide important and detailed contextual information to better understand the analysis and recommendations presented in this paper:

- “Optimizing the Naya Pakistan Housing Program”, Tabadlab Working Paper 01, by Ibrahim Khalil and Umar Nadeem, March 2019
- “Affordable Housing: Just Out of Reach”, Tabadlab First Response, by Ibrahim Khalil and Umar Nadeem, March 22, 2019
- “Mortgage Market Design for Low-Cost Housing Units in Pakistan” Tabadlab Working Paper 02, by Ibrahim Khalil, May 2019

This paper starts by describing the fundamentals of the urban economy and describes the basic concepts that will be used as building blocks in analyzing the dynamics of the real estate and housing market in Pakistan. The primary focus throughout the paper is affordability. We draw linkages to, and assess the implications of various factors as they relate to affordable housing. The paper then presents an affordability framework to explain key drivers of affordability and how they apply to the Pakistani context. A summary of selected literature highlighting international evidence of housing programs and interventions is presented throughout the paper to identify critical policy pitfalls that Pakistani decision makers should consider. The last section covers specific policy recommendations focusing on strategic and tactical interventions that can contribute to an effective housing program, that privileges affordability.

To improve the affordability of housing in Pakistan, supply and demand dynamics will both need to be in sync to be able to reach an optimal equilibrium price of asset and/or space market in the housing sector. A disproportionate focus on demand side interventions, such as mortgage depth, without a corresponding increase in housing supply will only lead to increased debt burdens and worsen affordability. A supply side focus that does not take into account the need for land supply regulation will be abused by developers and it will fail to address affordability concerns. In order to truly leverage the opportunity that the Naya Pakistan Housing Program may offer for GDP growth, a holistic, robust and coherent cross-sectoral policy will have to be devised in a manner that addresses two foundational issues. First, that housing finance and land/real estate markets are regulated. Second, that a revitalization and growth of domestic industry connected to the construction sector is made central to the effort. However, no matter how strong regulation is, and how intimately a growth in the housing sector is linked to domestic industry, unless affordability does not underpin all decisions, the Naya Pakistan Housing Program will be at risk of failure.

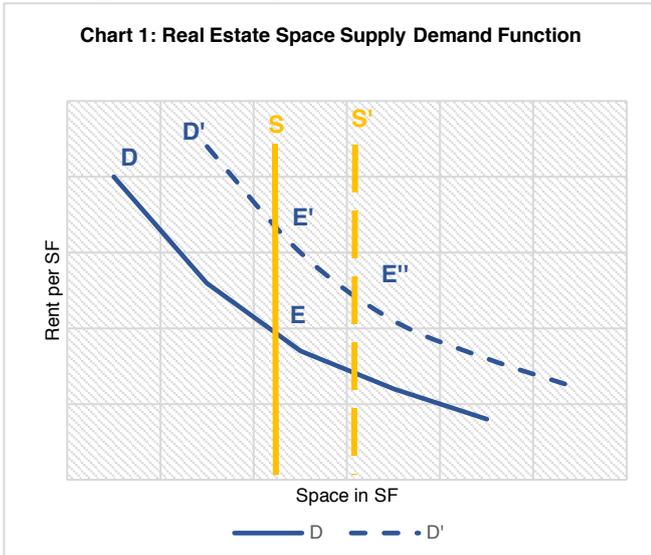
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1 Some Basics: Urban & Real Estate Economics i

This section summarizes the conceptual basis upon which the analysis in this paper is based. These urban economics and real estate concepts help us to deconstruct the status quo, and unpack the policy opportunities offered by the Naya Pakistan Housing Program for affordable housing.

Housing is a unique good that can serve a dual role as both a consumption and an investment good.



The market for the consumption of housing is called the 'space' market, shaped through supply and demand of residential housing units, shown in Chart 1. Shifts in the supply of space follow a long cycle owing to the nature of housing development, i.e. land must be acquired, infrastructure must be developed, regulatory and legal approvals must be secured, financing must be arranged and finally the 'space' must be constructed. In addition, housing is a long-lived asset with a productive life of decades. Alternatively, sometimes existing space needs to be reconfigured to a different purpose i.e. change in use, such as residential to commercial, or re-densification, such as low to mid or high-rise. Here too, a significant stock of capital and time investment are required to affect the desired

changes. All this means that in the short to medium term, the supply function of housing space is deemed inelastic and is thus represented by a vertical line.

The demand function of space is represented by a typical downward sloping demand curve, which implies that most housing and space is a normal good. Socio-economic changes or shocks to the system will impact demand, either upwards or downwards. If there is a reduction in demand say from D' to D , the supply cannot be reduced in the short to medium term due to the long arc of time space occupies. Consequently, the rent per unit of space (represented along the vertical axis) decreases from E' to E . The decrease in the rent will not always be manifest in the form of lower rents, as demanded by landlords. Sometimes, the "decrease in the rent" is exhibited in higher vacancy rates. In a later term, an increase in demand will initially be manifested through lower vacancy rates. Once vacancy rates have lowered to a minimum, the rents will start to rise. If demand and associated rents are forecasted to grow continuously, the market will respond by increasing the supply of housing with the vertical supply line shifting to the right, from S to S' . This will bring down the market clearing rent from E' to E'' . Based on an increase in supply and relative elasticities, the reduction in equilibrium rent can be significantly lower and long-lasting due to the permanent nature of supply.

The market for investments in the housing is called the 'asset' market. A housing asset (like other real estate assets) comprises of a future stream of cash flows and makes it comparable to other cashflow producing assets such as bonds and stocks, which operate through debt and capital markets. Owners of housing assets, (or landlords), can be considered investors operating within broader capital markets, making investment choices that optimize their risk-return appetite as shown in Chart 2.

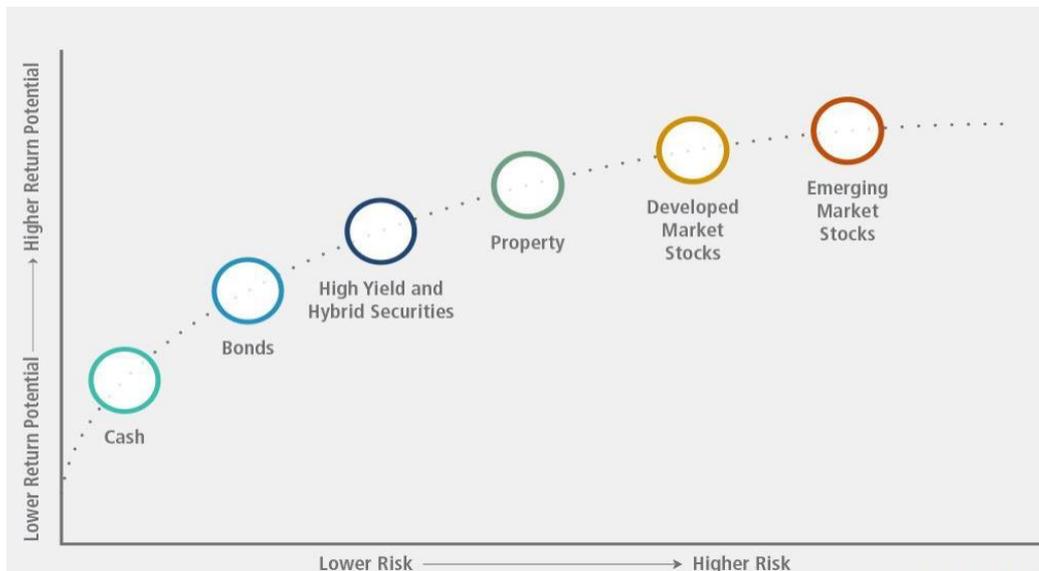


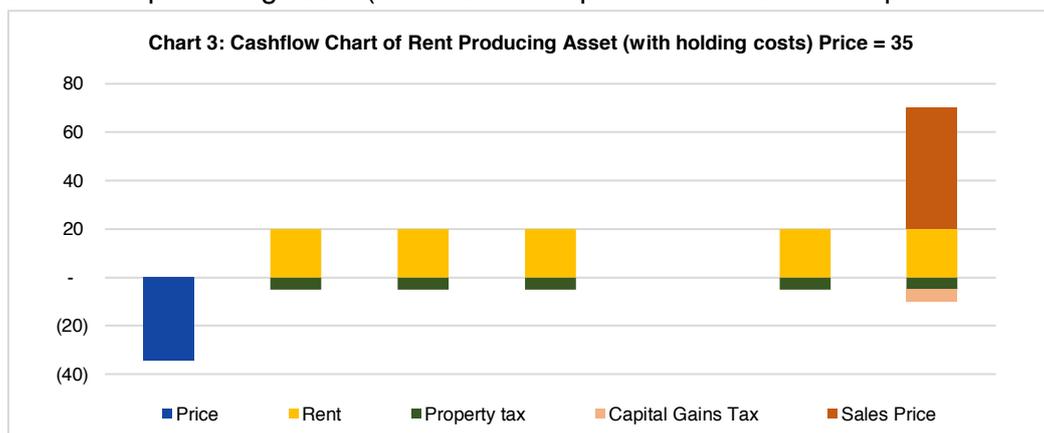
Chart 2: Potential Risk and Rewards of Asset Classes
Source: PIMCO

Like other capital market assets, the price of a real estate asset is the present value of future cash flows (rents, property expenses, sales and purchase of property etc.) and computed as:

$$\text{Price of Real Estate Asset} = \sum_t^0 \frac{CF_n}{(1+r)^n}$$

Where *CF* is the cashflow for 'n'th period and 'r' is the required rate of return.

The required rate of return is affected by factors like the uncertainty of cashflows, the opportunity cost of the returns, and the costs incurred during the holding period. We illustrate the potential of these factors, through an example in Chart 3. Here, an increase in the return on national savings certificates, will increase the opportunity cost of returns and result in a decrease in the price of the real estate "asset". Higher holding costs like taxes, non-utilization fees, capital gains taxes etc. will also lower the price of this asset. The price of a non-income producing asset (such as vacant piece of land or unoccupied apartment) is calculated in the same manner with the exception that all cash flows are realized at the time of disposal (there are no interim cash flows from rentals). The space and asset market collapse into one when housing is used for self-occupation where rental savings can be treated as cash flows in this case.



Price acts as the signal to developers for increasing the housing stock through new developments. When the price is higher than the development cost, developers will be incentivized to increase supply. Development costs constitute land, land acquisition, construction costs, as well as sales, marketing, financing and, of course, developer profits (the expected profit margin in the market).

To summarize:

- The space market determines rent rates,
- The asset market uses the rent rates to determine the price of the asset, and
- Developers use the price of assets as signals to make decisions on increasing supply in the market;

Figure 1 below depicts The housing system comprising of the space market, asset market and real estate developers.

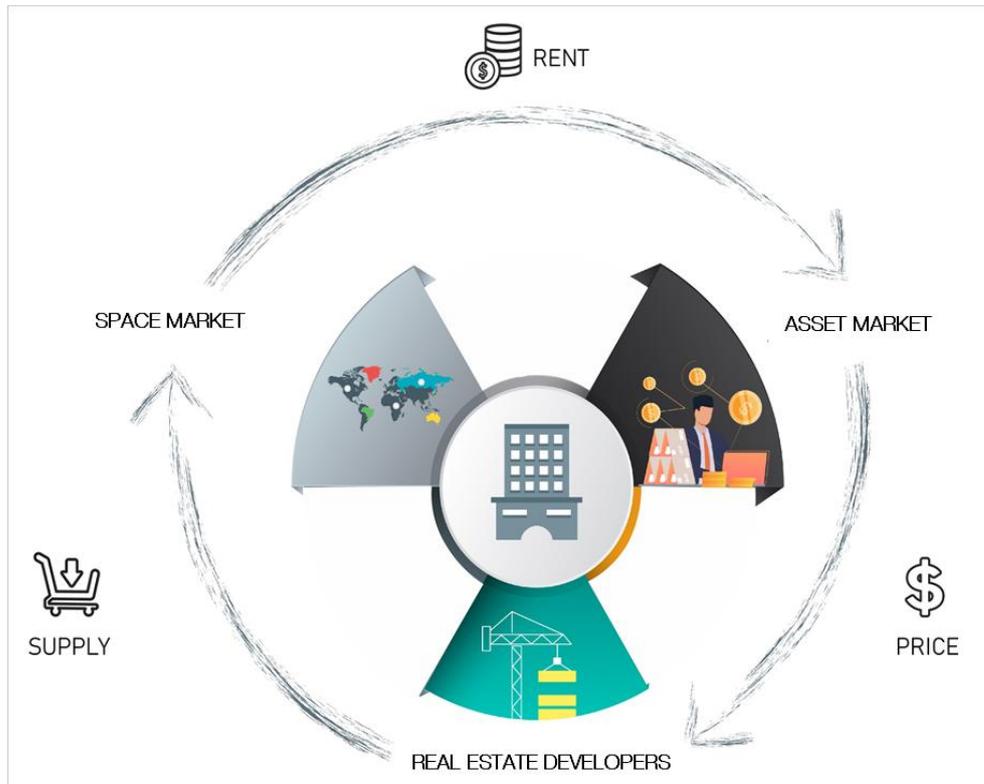


Figure 1: Asset Market and Real Estate Developers

Asset price, or more commonly, the value of real estate has two key major components: land value and structure value. Structure value is the difference between the asset price and the land price. When the asset is newly constructed, structure value is equal to its construction costs. Over time, the value of structure depreciates on account of obsolescence. The main determinants of structural obsolescence are:

- Physical: wear and tear owing to use and natural deterioration,
- Economic: factors that render the structure utilization sub-optimal and lend the land to more economically viable use e.g. densification of low-rise structures, and
- Technological: design and materials of the building do not meet present requirements

The land value does not decrease due to fundamental scarcity or fixed supply. Unlike other factors of production (capital and labor), land is immovable, scarce and permanent. This means that its economic value is distinctive. All attributes of land are factored in its value e.g. the physical aspects of a site like location (seafront, highway, etc.) and the zoning regulations like residential/commercial, low/high-rise. The quality of infrastructure and municipal services are also priced into land value. The price of land will also take into account any extraordinary costs and circumstances for its development. In summary, land is priced at the residual value from the earnings potential of a site and the costs of readiness.

Continued development for increasing the stock of housing and ancillary use like public spaces, roads, and utility spaces constrain the open land available in a fixed pool, thereby restricting supply against an ever-growing demand. This leads to increases in the value of the land without any direct value addition to that piece of land.

“Land is limited in quantity while demand for it, in a prosperous country, is constantly increasing. The rent, therefore and the price, which depends on rent, progressively rises, not through the exertion or expenditure of the owner, to which we should not object, but by mere growth of wealth and population. The incomes of land owners are rising while they are sleeping, through the general prosperity produced by the labor and outlay of other people.”

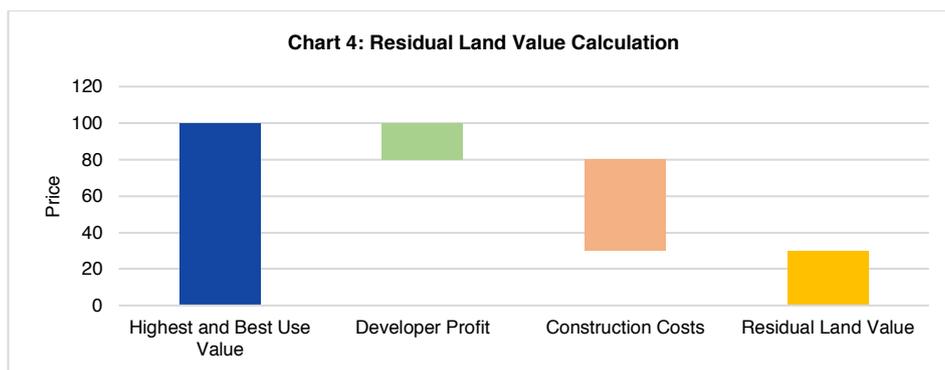
John Stuart Mill

Inexpensive land may be available in many cases but will not possess high-potential attributes. Uneven sites, pre-existing structures for removal, poor connectivity and inadequate infrastructure would add to the cost of the land. In sum, whereas the total supply of land for the economy as a whole is considered inelastic and represented by a vertical line, supply for a particular use is considered somewhat elastic and represented by an upward sloping curve.

“Buy land, they are not making it anymore”

Mark Twain

Land is a key input for developers, which needs to be acquired before development starts. Developers use the “highest and best use value” to determine the acceptable cost of land. Highest and best use value is based on the use that will bring the highest value of the real estate, it’s current and actual use is not relevant the highest and best use. Residual value of land is determined by deducting the costs (including the developer’s profit) that will be required to develop the highest and best use of the land. This is the maximum price a developer is willing to pay for acquiring the site as depicted in Chart 4 below

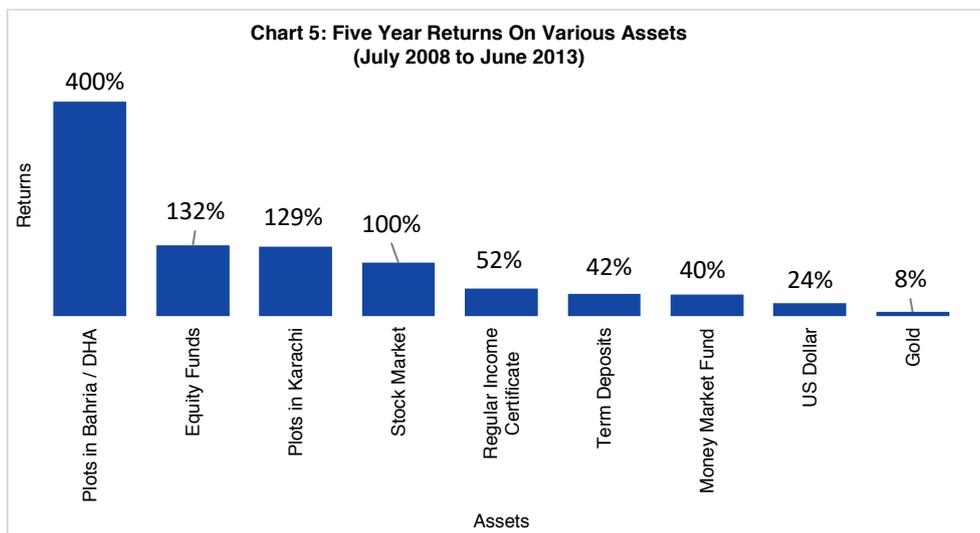


*Highest and Best Use **Value** - Developer Profit - Construction Cost = Land Value*

Land development decisions by the developer are based on profit maximization. If the developer believes that by keeping the land undeveloped he can realize a high profit due to increase in price of land in the future or if the prevailing highest and best use value is less than the development costs (land, construction cost and developer profit), deferring or postponing development offers the possibility of higher profits for the developer. Given that construction is a decision requiring significant capital outlays, and is irreversible, developers hold a call option on the development of land i.e., they have the right but not the obligation to develop a cashflow generating asset upon the payment of construction cost (exercise price of the option) necessary to build the structure. The option essentially allows the developer to delay exercising it till said developer decides that the expected returns on the investment can be realized. The expected higher returns can be from higher housing unit prices (if developed) and/or higher land value (when held for speculative return).

2 Real Estate and Housing in Pakistan

Real estate has become a major avenue for investment in Pakistan. Owing to the returns generated by real estate, land has become a primary store of value. Investment in premier private residential plots (Defence Housing Authority and Bahria Town) generated a return of approximately 400% over a five-year periodⁱⁱ. Return on plots of land in other areas of Karachi had a yield of approximately 129% over the same period. The only other comparable return was on equity mutual funds – 132%, which are taxable at a rate of 15%. This unparalleled return on plots of land, as shown in Chart 5 below, resulted in channeling of the savings to this sector.



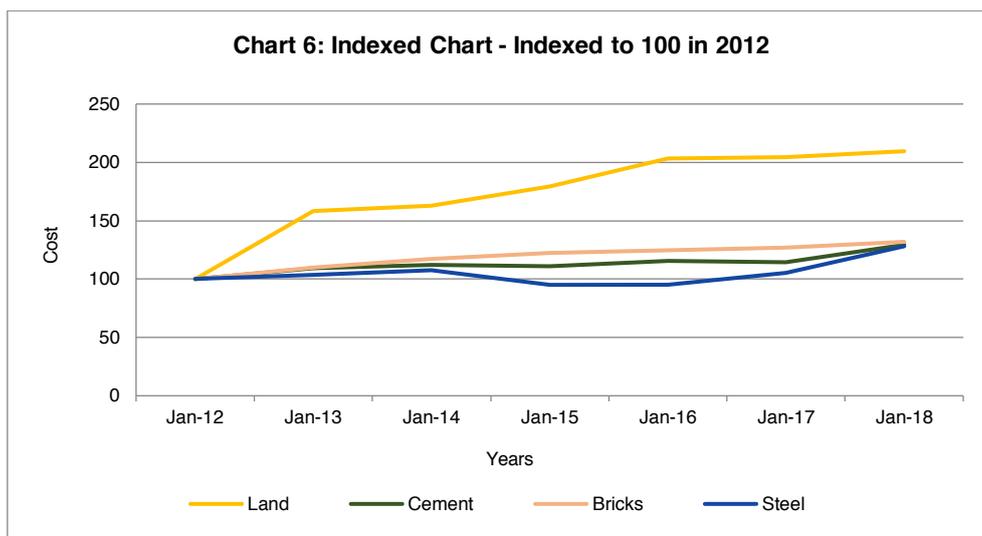
“Roads are made, streets are made, railway services are improved, electric light turns night into day, electric trams glide swiftly to and fro, water is brought from reservoirs a hundred miles off in the mountains – and all the while the landlord sits still. Every one of those improvements is affected by the labor and at the cost of other people. Many of the most important are affected at the cost of the municipality and of the ratepayers. To not one of those improvements does the land monopolist as a land monopolist contribute, and yet by every one of them the value of his land is sensibly enhanced. He renders no service to the community, he contributes nothing to the general welfare; he contributes nothing even to the process from which his own enrichment is derived. If the land were occupied by shops or by dwellings, the municipality at least would secure the rates upon them in aid of the general fund, but the land may be unoccupied, undeveloped, it may be what is called ‘ripening’ – ripening at the expense of the whole city, of the whole country, for the unearned increment of its owner.”

Winston Churchillⁱⁱⁱ

With no effective holding costs and a long turnaround cycle for developments, instruments like booking titles, files of plots, partially and fully paid vacant residential plots have become an investment opportunity that are acquired not for housing consumption or development, but to ensure lucrative returns from speculative appreciation. In some instances, this activity has even extended to industrial zones where land is purchased in early years by speculators who intend to flip the investment once development of the zone and infrastructure starts.^{iv} In Khyber Pakhtunkhwa’s flagship Rashakai Economic Zone, landowners who had sold the land are approaching lower courts for enhancement of compensation amount now that the area is about to be developed.^v

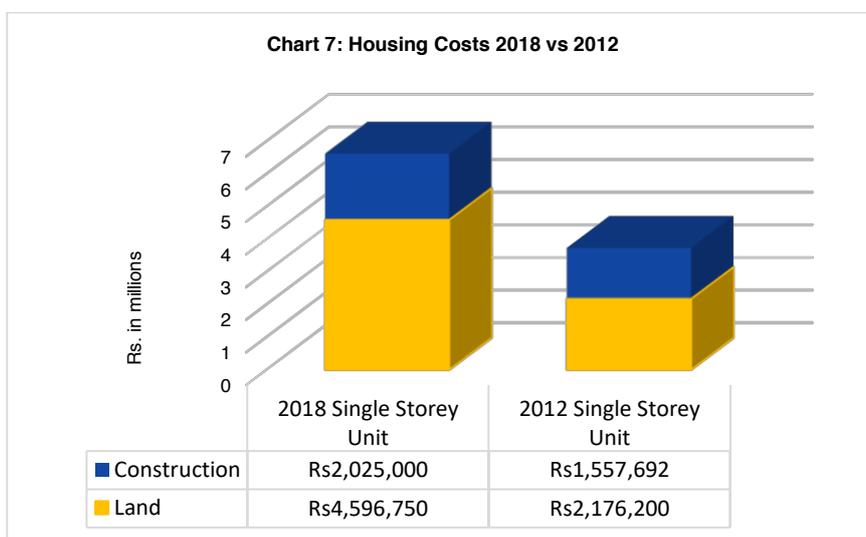
Speculative interest in land and corresponding spikes in real estate prices has an important bearing on the prospects for development activities and the resulting housing stock. An unwieldy dynamics in both the housing asset and the space markets in Pakistan has emerged. Chart 6 shows the increase in the construction cost and land cost since 2012. The prices of cement, steel and bricks (as reported by Pakistan Bureau of Statistics) are used as a proxy for construction costs.^{vi} The cost of construction has gradually increased by 30% and is primarily attributable to market dynamics and inflationary pressures

on the costs of production. The price of land, however, has increased by more than 100% during this period. vii



Source: Pakistan Bureau of Statistics (Price of cement, steel and bricks)

At prevailing land and construction costs, land alone comprises of approximately 70% of the total cost of single-story housing unit.viii The index in Chart 7 is used to estimate increases in the cost of a single-storey housing unit between 2012 and 2018. 2012 costs have been arrived at by deflating the current construction costs by the price index. It is clear that a housing unit that costs PKR 6.6 million in 2018 would have cost around PKR 3.7 million in 2012. A break down of the costs reveals that a massive 83% of the increase is attributable to land. Land accounted for 57% of the housing cost in 2012 as compared to 70% in 2018.



Source: NPHP Housing Prices

The surge in land and house prices is intriguing, and remarkable. This surge has taken place absent a vibrant mortgage market. Mortgage market depth in Pakistan is 0.2% (one of the lowest in the world). Only 1,500 new mortgage loans are extended every year with an average loan-to-value (LTV) ratio of 48%. This ratio means that borrowers are forced to arrange more than half of the purchase price for a home from their own savings.ix The current mortgage finance market (despite constituting an insignificant share of the overall housing sector) primarily serves high-income, and asset-rich Pakistanis. No other income or wealth group can afford the prohibitive structure of the mortgage market in Pakistan (and the availability of mortgage instruments marketed as being Shariah compliant has seemingly made little or no difference to this structure). Rapid urbanization on account of clustered economic opportunities in large cities and a soaring, unregulated real estate sector has resulted in a large informal

housing sector with an estimated shortfall of 10 million housing units. This shortfall is heavily concentrated in the lower income segments.

The Naya Pakistan Housing Program (NPHP) was conceived to address this shortage, and to do so by creating a stock of “affordable” housing for Pakistanis that have been crowded out by the existing nexus between economic, political and social factors, including years of bad public policy. One of the repeatedly reinforced features of the NPHP is that it seeks to stimulate private sector investment so that it can help affect the increase the stock of housing, and especially the stock of affordable housing. It was also intended to spur economic activity and contribute to a domestic turnaround through fifty connected industries, thereby propelling GDP growth. The policy direction was to focus on demand, and on the financing and regulatory aspects of the real estate sector to address asymmetries, and to plug the policy gaps that generate deficiencies in the market. The wider policy direction and analysis of other aspects of housing policy has been discussed in Tabadlab’s earlier papers. In this paper, we seek to explore the impact of NPHP on the participation of low-income Pakistanis in the housing market, and how this segment can be enabled to migrate to the formal housing market.

2.1 Global Evidence: Housing as a Financial Asset

Rolnik (2017) explains the transition from supply side policies to demand side policies to address the housing problem. Supported by aid and consultancy services from multilateral organizations, countries are introducing policies that incentivize the financial sector to extend more credit for mortgages and encourage households to take on mortgages as a primary mechanism to own housing. This is accompanied by a ‘conceptual transformation’ of housing from social good to a commodity and a strategy for household wealth accumulation. Housing has become a financial asset and housing markets are increasingly regulated to promote the financial aspects of housing, rather than the social aspect of housing.

Collins, Lloyd and Macfarlane (2017) argue that over a century ago, housing supplied a place to live whereas today homeownership is promoted as an investment opportunity which offers long term financial security in the face of stagnating wages, dwindling pensions, and reduced state welfare provisions. Public and political discourse now classifies housing as a vehicle for wealth accumulation rather than a universal consumption good.

“Property is a better bet than pension”

Andy Haldane, Chief Economist Bank of England

The principle underlying an asset-based approach to welfare is a shift from the reliance on state managed safety transfers (to counter risks of poverty, old age and retirements) where individuals accept greater responsibility for their own welfare preferences by investing in financial products and real estate assets which appreciate over time. Doling and Roland (2010) state that the notion of an “asset-based” welfare system has increasingly become central to debates on restructuring western welfare states, and the asset class of choice for this has been residential real-estate and/or housing assets.

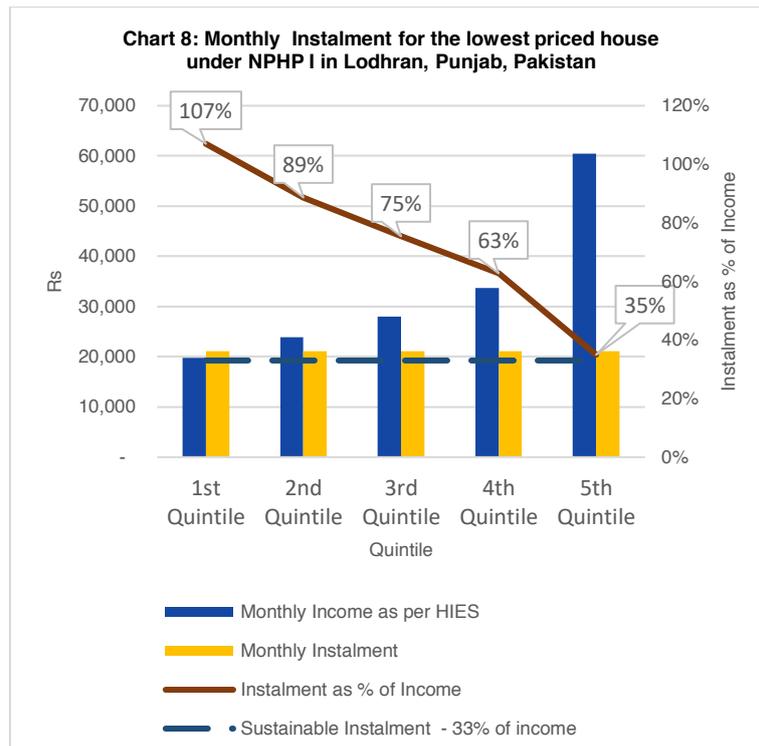
Given this wider policy context, affordability is a crucial element of the question of housing policy. We attempt to establish a framework for affordability in the Pakistani context and offer a set of recommendations that must inform the design of any effective policy response to the actual housing sector challenges facing Pakistan.

3 Affordability Framework

Affordability is central to the conception and the rhetoric around the Naya Pakistan Housing Program (NPHP). In this section, we map a framework to help assess affordability in the housing sector in Pakistan.

3.1 Is NPHP Offering Affordable Housing?

Affordability of housing units under the prevailing market conditions presents a serious challenge for Pakistani policymakers. We use the Household Integrated Economic Survey (HIES) 2015-16 to map income quintiles with mortgage payments under the lowest priced housing unit of the NPHP Phase I in Lodhran, Punjab. x



Source: Household Integrated Economic Survey (HIES) 2015-16

Chart 8 above compares household income levels (in blue) and the existing monthly instalment for the lowest priced mortgage in Phase I of NPHP at Lodhran, along with an indicator of the sustainable debt-servicing burden (33% of income). The analysis highlights the significant delta in debt-servicing if these housing units are financed through mortgage financing. The unsustainability of such financing levels makes these housing units unaffordable even for the highest income quintile.

An alternative affordability analysis is based on the financing options offered by the NPHP through the registration forms.xi The form offers the following monthly instalment options:

- PKR 5,000 to PKR 10,000
- PKR 10,001 to PKR 15,000
- PKR 15,001 to PKR 20,000

Assuming a 20-year mortgage at 17% with 10% down payment, Table 1 clearly illustrates that the maximum allowed price of a housing unit is lower than the lowest priced house under the NPHP.

Table 1: source: NPHP financing options

Monthly Instalment	Maximum Purchase Price (PKR)
5,000	378,753
10,000	757,507
15,000	1,136,260
20,000	1,515,013

It should be noted that PKR 1.6 mn is the lowest priced house in the announced NPHP lots. Price of housing units in the same location go as high as PKR 3.5 mn (more than twice the cheapest housing unit). Unless, the mortgage structure fundamentally changes, the NPHP will not be able to make any dent in the affordability of formal housing for Pakistanis in the lower income quintiles.

Since the announcement of these prices, consistent inflationary pressures may have adversely affected the already compromised affordability through an escalation in construction costs. Many households that straddle the edges of the income quintiles are likely to have prioritized basic consumption, over and above savings, or consumption of durables. The country experienced a drastic shift in its macroeconomic policy with the base rate hiked to 13.25%. This contractionary fiscal direction, largely dictated by the IMF program, is likely to constrain the potential for demand side uptake. Public debt levels do not lend the luxury of offering subsidies on housing finance for increasing mortgage depth. The State Bank of Pakistan has withdrawn all proposals allowing for a discounted mark-up except for special segments. The end-consumer interest rates for financing, even with modest spread by commercial banks will render the debt-burden too high for low and middle-income segments. This internal tension in the contradictory policy stances raises an important existential dilemma for the NPHP and how it aims to tackle the chronic issue of 'affordable housing'. The bottom line is that, as of December 2019, the NPHP is not designed to improve affordable home ownership.

3.2 Affordability Unpacked

The affordability of housing is hinged on four factors: mortgage term, interest rates, income, and the price or cost of housing. These parameters can singularly, or in combination, be adjusted to improve the targeting of housing stock for specific income segments. Each of these and their relevance as policy instruments is discussed below.

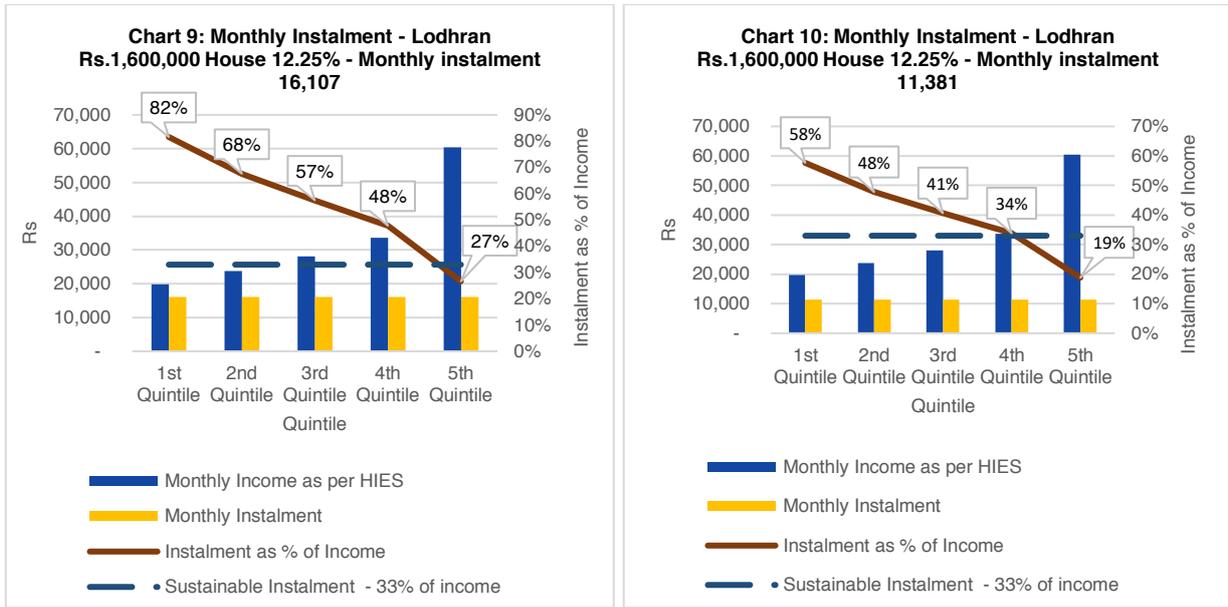
3.2.1 Mortgage Term

The wider consensus in the literature on the centrality of mortgages to housing affordability is informed by three key aspects of mortgage credit. First, mortgage credit enhances "welfare through ownership" by spreading the costs of a durable good over a longer period of time. Second, mortgage credit is best deployed to finance new stocks of housing rather than to acquire already constructed units. When mortgage credit is used to increase transactions of already existing housing (the secondary housing market), house prices rise, affordability is reduced and there is a net negative impact on inequality. Third, synchronizing mortgage expansion and new development can stimulate GDP growth by ensuring a focus on the primary market for housing thereby improving affordability and welfare. In short, more mortgages, focused on additions to the stock of housing, over longer terms, are instrumental in expanding affordable housing. Unfortunately, commercial mortgages in Pakistan are offered for a maximum term of fifteen years, partly due to a lack of depth in the debt capital market. The SBP policy to facilitate affordable housing has extended the term to twenty years with support from the Pakistan Mortgage Refinance Company (PMRC). With this change it is unlikely that the policy will be adjusted to allow an increased term beyond 20 years in the short term.

3.2.2 Interest Rate

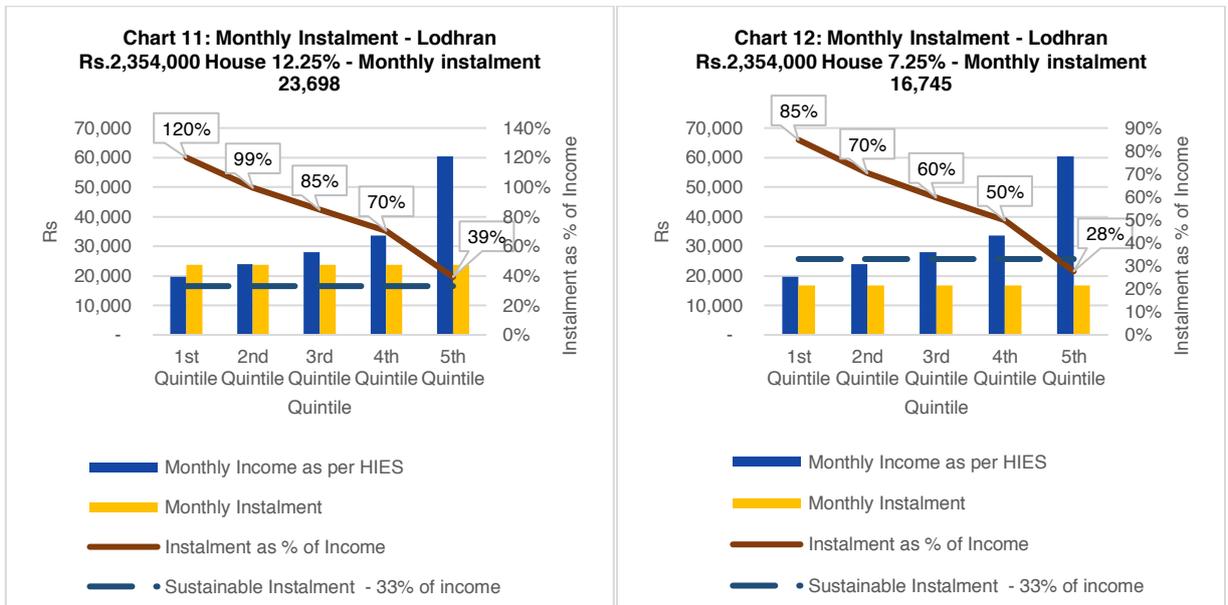
Though the SBP Low-Cost Housing Policy discussion paper mentioned a subsidy on interest rates for affordable housing, the subsequently approved policy did not formalize this subsidy, except for selected special segments.^{xii}

A scenario analysis is presented below to understand the effect of a 5% and 10% subsidy for a typical basic housing unit under NPHP. This unit is a one-bed, one-story construction situated in peri-urban/rural area. The price offered to the end-consumer for this unit is PKR 1.6mn. This unit is benchmarked to the lowest price unit of NPHP Phase I.



Source: Household Integrated Economic Survey (HIES) 2015-16

At an interest rate subsidy of 5% (12.25% effective rate for mortgage), the unit becomes affordable for the fifth quintile only. At a subsidy of 10% (7.25% effective rate for mortgage) the housing unit affordability is extended to the fourth quintile. This one-bed unit will barely suffice for an average household and is still beyond the reach of the first three income quintiles. The analysis is extended to a three-bed house in the same location, which was priced at PKR 2.35mn. A massive 10% interest rate subsidy will be required to make this affordable for the top income quintile.



Source: Household Integrated Economic Survey (HIES) 2015-16

Housing units in urban centers or other areas are priced much higher and the unaffordability for at least the bottom 80% of the population (as well as a substantial portion of the top 20% too) extends naturally to these cases. It is evident that any interventions focusing on mortgage term and/or interest rate (if even remotely possible in the current fiscal regime) will not be able to address the affordability

constraints. Furthermore, as soon as there is even a minor fluctuation in the costs of construction, prices will aggravate the challenge further.

3.2.3 Income

An increase in income levels which is significantly higher than the rate of increase in housing prices can make the offered units affordable. However, this requires structural changes in the economy that result in better employment opportunities across the board particularly for low-income groups which will require a well-thought out and efficiently implemented programs to boost education outcomes, industrial development and growth. This will only be possible in the medium to long-term and further discussion of this is beyond the scope of this paper. Moreover, the government will also need to ensure that the prices of housing units do not increase during this period at a rate higher than the rate income growth—otherwise the impact of increased incomes will be offset by the corresponding increases in housing units.

3.2.4 Cost of Housing

The discussion above has concluded that without significant increase in income levels, there is no possibility of increasing affordability of housing units in the short to medium-term in the prevalent conditions.

Khalil (2019) proposed shared equity mortgages (SEMs) wherein the government becomes a partner in the mortgage by sharing equity with the buyer by deferring land cost payment to a future date. With land comprising of up to 70% of the cost of a housing unit in Pakistan, there is significant room for the government to contribute in the mortgage sharing arrangement.

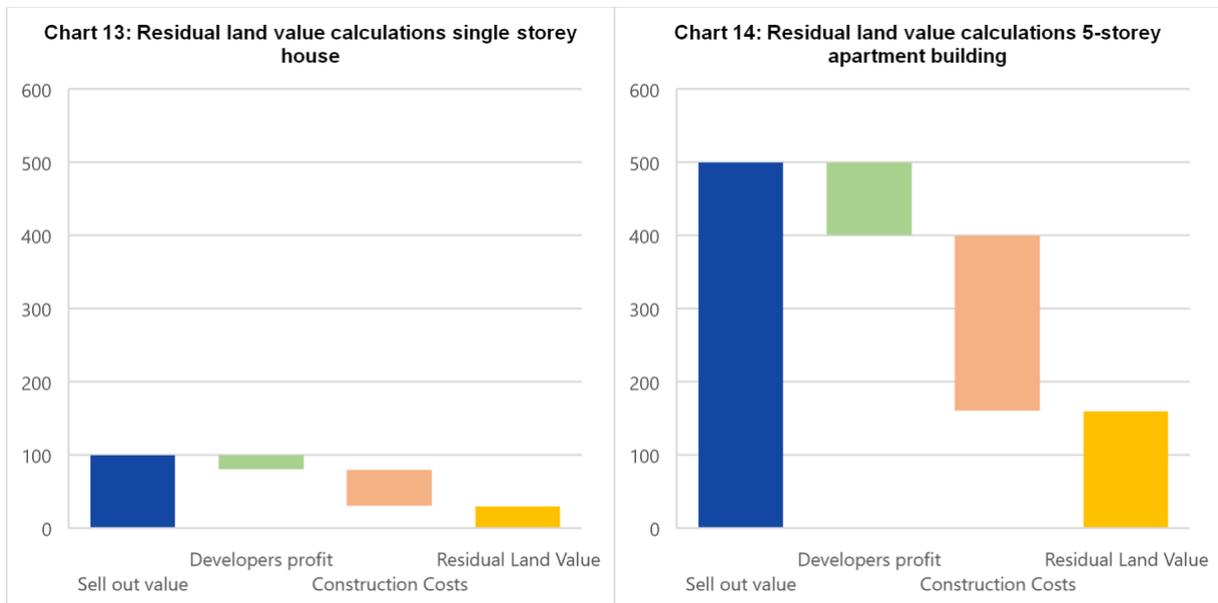
When the government increases its stake in the shared mortgage to the maximum possible limit of land cost (approximately 70% of the unit price), the instalments become sustainable for every income segment. In a way, the new homeowner or occupant of the new housing unit ends up only paying for the construction costs. This could potentially be a viable model for an affordability-first housing finance policy that privileges housing for the low-income segment. The land would remain in the ownership of the government and the housing units themselves would be are leased out to occupants. However, such a model would fail to build wealth for the new “homeowners” as any increase in the housing unit’s value would be priced into the land, which is owned by the government, rather than the house, which was described above as the depreciating element within the housing unit price. If the new homeowners or occupants decide to sell the house, they may get back the equity they contributed towards the construction with a reasonable return. The core objective here then would be to provide affordable housing, security of tenure and affordability, perpetually. Wealth creation would not be a primary objective under this model. This is generally known as the Community Land Trust model where the landowner can also be a non-profit organization interested in keeping the land affordable in perpetuity. The government can vary its contribution to this shared equity mortgage (SEM) based on the segment it is targeting and the affordability delta that it seeks to affect.

Table 2 compares the costs of housing units across cities. Assuming similar specifications and construction quality under the NPHP, the difference in costs can be clearly attributed to the cost of land. In short, in order to really have a meaningful impact on the affordability of housing, any intervention needs to target the cost of land.

City	House Price	PKR/SF
Lodhran	1,600,000	1,959
Layyah	1,890,000	2,314
Bhakkar	2,430,000	1,785
Rawalpindi	5,272,000	6,202
Lahore	5,580,000	6,200

Table 2: Costs of lowest priced NPHP housing units across cities

Conventional wisdom suggests that increasing the zoning/densification of land (i.e. to give permission for high-rise development on land previously permitting only low-rise development) can have a meaningful impact on increasing supply and reducing prices in the housing sector. However, this is not necessarily a guaranteed outcome of changing zoning permissions or increasing housing density. The case below illustrates how the intended outcome may not be achieved:



The chart shows that value of same piece of land increases by a multiple if its zoning is increased to allow a denser building

As soon as the zoning of a site has been changed to allow higher rise/density development than was previously permitted, the value of the land (potential of being able to develop and sell more units) will increase. This increase does not result from any value addition to the land, but rather from the mere stroke of the urban authorities' pen. If privately held, the market will price this site based on the expected returns from the new zoning permissions (i.e. more units on the same land). Consequently, the developer will price units to cover the increased cost of land and thus the result may be that there is no decrease in the price of a single housing unit despite the increased overall density or supply of housing units. Freemark (2019) analyzed this phenomenon in a recent study of up-zoning in a neighborhood in Chicago. He showed that the short-term impact of increasing allowed densities (increasing the zoning) and reduced parking requirements has been higher property prices with no increase in housing construction. Thus, there is no guarantee that re-zoning or increased density always results in decreases in the cost of housing.

Moreover, developers only engage in construction if the sales of the units enable her or him to realize target profit levels. In case there is a decrease in prices of housing unit, the developer may decide not to exercise the 'land development option' and hold the land for a higher return down the road. Developers take on significant risk by investing in land sites as it takes significant time and capital to bring infrastructure to the land, seeking approvals, marketing and selling the project and arranging capital for construction. If the land is acquired in a public auction, the winning bidder can secure profits in two ways:

- Sell the constructed units at a price higher than that estimated by conceding bidders
- Sell units at competitive prices but reduce costs (cheaper quality material or squeezing cost efficiencies).

With little or no R&D budgets, the likelihood of cost efficiencies being realized at scale is very low. This means that if NPHP authorities auction public land to developers for construction of affordable housing, we end up with either increases in the price of housing units (more expensive houses) or shoddy construction (lower quality houses for the same price as before).



Figure 2 Sales Price of the Housing

When land price is higher, developer needs to sell at higher sell-out value to achieve same amount of profit.

A report by the McKinsey Global Institute (2014) estimates that construction costs can be reduced by as much as 30% by employing value engineering (cutting-edge design of units to reduce wastage of material and time), and using industrial construction methods (lean manufacturing, just in time (JIT) inventory, pre-fabricated and pre-cast materials). Achieving such benefits requires significant capital investment across the entire value chain: setting up manufacturing units requiring procurement of technology and production equipment, a logistics infrastructure to deliver JIT inventory and lean manufacturing and lastly, a highly trained workforce to make use of all this technology and processes. Realizing all these gains would reduce the total cost of housing units by only a meagre 9%.^{xiii}

3.3 Global Evidence: Housing Credit and House Prices

By comparing real house prices and mortgage credit as a percentage of GDP in developed economies since 1870, Ryan-Collins (2018) shows that till 1960, there was little change in house prices despite rising income and growing populations. However, in last 20 years, mortgage credit rose exponentially followed by increases in real house prices by 50%. Correlation isn't causation. The author cites an OECD study of nineteen countries between 1985 and 2005, which estimated that the expansion of mortgage credit explained 30% of the increase in house prices (far more than explained by any other variable).^{xiv} By extending the study to 2010, IMF showed that a 10% increase in household credit leads to a 6% increase in house prices.^{xv} The same study also showed that this led to an upward spiral between mortgage credit and house prices i.e. an increase in house prices leads to further increases in household credit and so on. Using a dataset from 1994-2005, a period of interstate banking deregulation in US, Favara and Imbs (2015) showed that increasing mortgage credit helps explain one half of the increase in housing prices observed over the same period.

Mortgage finance affects the “haves” and “have nots” in different ways according to Stephen (2007). Mortgage finance increases access to housing, but it also contributes to higher house prices that reduces access to house ownership for the “have nots” by reducing their ability to get on the housing ladder thus increasing inequality. Due to financialization, housing now comprises a larger component of household wealth. For the non-home owners, increases in house prices is a “double whammy” as they

miss out on this increase in wealth, and rising house prices further compromise affordability and in turn limit wealth creation opportunities for these groups.

Knoll, Schularick and Steger (2017) used empirical data to construct house price indices for fourteen developed economies. An accounting decomposition of house price dynamics into replacement cost of structure and land prices demonstrated about 80% of the increase in house prices between 1950 and 2012 can be attributed to land prices.

3.4 A theory of affordability

The analyses above conclude rather decisively that cost of housing units in Pakistan especially in urban centers is controlled by cost of land. Appreciation in land value is not due to any value addition done by the landlords but largely driven by fixed/restricted supply, infrastructure and connectivity, surrounding development, speculative activity etc. Unless the price of the land is managed and rationalized, improving affordability of housing especially for low-income groups is very unlikely. Unless the cost structure of housing units, primarily land, fundamentally changes, using innovative modes of delivery like public private partnerships will not serve as a panacea as the desired outcomes simply cannot be achieved through a different contracting model or performance vehicle.

Policy tweaks like mortgage term or interest rate subsidies will not be able to move the needle of affordability by the degree required for impact unless the government can regulate land cost effectively without distorting market dynamics; or the government can enable an economic transformation that results in an accelerated rise in income levels trickling down to the base of the pyramid, faster than the increase in price of housing units.

4 Policy Recommendations for NPHP

The housing sector in Pakistan does not lend itself to a single overarching policy architecture. There is a large disparity of real estate market dynamics across different geographical areas or markets, and there is a corresponding variation in the prices of housing units. The stark income inequality in the country also means that any housing policy must cater to a diverse set of income groups, with the lower ends of the income spectrum being especially difficult to service. Any positive outcomes in the housing sector will require a segmented targeting through a bouquet of policy interventions.

Our analysis has sought to identify key insights to inform policy interventions that can help address the affordability dimension of the housing sector in Pakistan. The recommendations below offer some broad guidelines and are intended to stimulate further inquiry and analysis.

4.1 Target policy toward specific income segments

Consumer preferences on the demand-side, and affordability considerations on the supply-side mean that the beneficiaries of the NPHP represent a broad spectrum. Any blanket policy that aims to intervene universally across all segments will not work. Khalil and Nadeem (2019a) suggested targeting the middle-income segment for commercial mortgage finance as a pivot to stimulate growth in the stock of housing. For low-income segments, Khalil (2019) suggested the involvement of microfinance institutions for effective targeting.

4.1.1 Low-Income Groups

Low-income groups under NPHP comprise of households with a monthly income of PKR 60,000 and can afford a debt-servicing instalment of PKR 5,000 to PKR 20,000. These constraints render existing offerings out of reach for this group. Clarifying the policy objective can open up options to address this group's needs. Is it home ownership as a vehicle of wealth accumulation? Or is it security of tenure? Or is it expanding formal housing? While home ownership may not be fulfilled in the existing macro environment, focusing on security of tenure does present a few viable options:

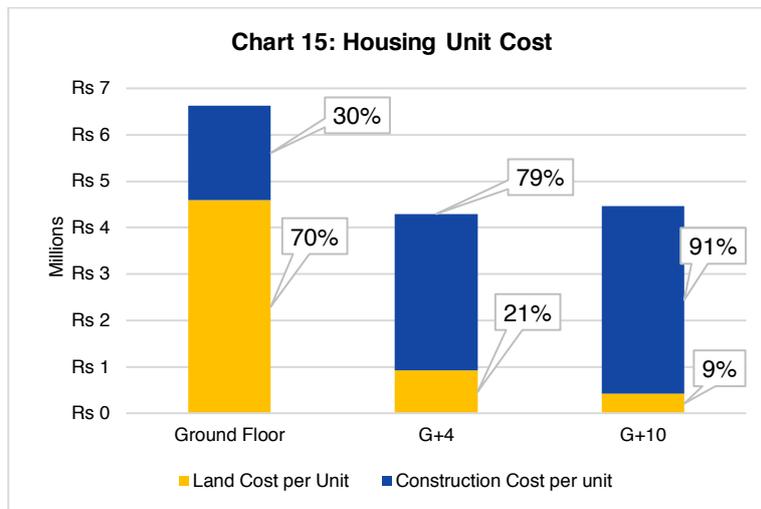
- Community Land Trust (as discussed above) can provide affordable housing to low income groups, and a secure tenure but does not promote housing as a source of wealth accumulation. The government owns the land or works with non-profit organizations to manage and/or own the land and enable access to housing against the financing of construction costs only.
- Incremental Housing Schemes would constitute plans for the regularization and up-gradation of slums on a self-help basis.
- Housing communities for industrial employees at factory sites would provide employees with affordable accommodation and any financing that is obtained could be serviced directly through the employers.
- Provision of materials and know-how to farmers to building shelters on their own. This model is used by the Government of Sindh. ^{xvi}

Most of these models can be implemented outside the urban core as the cost of land is within affordability margins. For such peri-urban/rural schemes, investment in infrastructure such as transport networks, public services and economic activity will be required to avoid ghettoization. Khalil and Nadeem (2019a) had established that housing developments comprising strictly of low-income communities aren't bankable and lead to vicious cycles in which ghettoization becomes inevitable. Recent news items that indicate the refusal of even some public sector banks to finance low income groups highlights the reservations of the banking sector viz an aggressive position on affordable housing, and thus the limitations to policy ambitions for affordability for the lowest income groups.

4.1.2 Middle Income

A large segment of the population works in the formal sector and has income levels that are considerably higher than low-income households. Despite this, they simply cannot access mortgage

finance as it exists in Pakistan today. Khalil and Nadeem (2019a) proposed mixed-income high-rise developments that are focused towards this group. The proposed mixed-income housing here, is cognizant of the social dynamics, is a mix of middle and low-income groups rather than upper and low-income. Chart 15 shows a 150 square yards housing unit cost in a single story, five-story and eleven-story building.^{xvii}



It shows that a Ground + Four Floor building provides the cheapest cost per unit. Moreover, it also increases the construction cost component to 79% of total cost. Using cutting edge construction techniques for such a building has the highest potential to optimize cost. We should keep in mind this assumes a land cost of PKR 3,405 per square foot, which is the cost of land zoned for a single-story unit. In a rational market, the cost of land will multiply (as the residual value of land has increased) when its zoning permissions allow mid-rise development. In such a scenario, these assumptions will not hold. The government needs to ensure that land cost remains within reach and reasonable despite changes to zoning. This requires a degree of insightful and long term thinking and planning on the part of the government and land/real estate regulating agencies.

4.2 Establish an Inclusionary Zoning regime

The government can introduce blanket inclusionary zoning for all high rises as suggested in Khalil & Nadeem (2019a). As an example, a plot of land that could accommodate a ten-story building of fifty apartments (no conditions attached) will now only be given a construction permit if 20% of the units are affordable for the middle-income group. This would reduce the overall sellout price of the building to be constructed on the site. Whereas the builder could earlier sell all fifty apartments at market price, she or he will now only be allowed to sell forty units at market price and ten units at an “affordable” price.

If the site is up for a fresh auction, the developer will bid at a lower price for the land to maximize profits even when factoring in affordable obligations. This lower bid will result in lower offered prices of housing units developed. However, for a developer who has already acquired the land at a high price anticipating construction without inclusionary zoning, this will mean a lower profit. The developer may decide to keep the developer option to hold development and/or hold on to the vacant plot of land for higher returns later. Taxing land that is meant for development, but where the developer has not yet begun development may be one way of stimulating a swifter conversion of undeveloped land into liveable housing units. This is explored below.

4.3 Charge developers a “Non-Development Fee”

Inclusionary zoning may encourage land owners to hold the land vacant as they can no longer actualize the forecasted return due to the mandatory offering of affordable units. This lower return and the expectation to lobby for or wait for availing an exception to the inclusionary obligations can result in a pool of land being held idle. This ‘hoarding’ of non-productive land results in speculative investments driving up the price of not only subject sites but all new allocations around dense population centres. This non-productive use must be curtailed. There should be a non-development tax/fee/charge on plots

that are ready for development. If land owners are not interested in developing the site, it should be sold off. This mechanism will keep land pricing in check. It will also reduce the value of the developer option. Similarly, vacancies in the space market should be regulated by imposing a tax/fee/charge on unoccupied units. Developed units should be used efficiently to keep the supply and rent in check.

Estimates from Karachi alone show that there are 200,000 developed plots of land and over 62,000 apartments that are lying vacant.^{xviii} With no holding costs, it has become obvious that housing has become an investment good and investors are holding on to it to realize capital gains. Taxes that capture land value such as Land Value Tax are suggested to control such costs, which can help rationalize the unhinged speculative activities characteristic of real estate markets in Pakistan.

“I do not think that the man who makes money by unearned increment in land is morally worse than anyone else who gathers his profit where he finds it in this hard world under the law and according to common usage. It is not the individual I attack; it is the system. It is not the man who is bad; it is the law which is bad. It is not the man who is blameworthy for doing what the law allows and what other men do; it is the State which would be blameworthy if it were not to endeavor to reform the law and correct the practice.”

Winston Churchill ^{xix}

“no private landowner should benefit from development which had taken place at public expense;”

Lee Kuan Yew ^{xx}

4.4 Introduce Density Bonuses

Similar to inclusionary zoning, density bonuses are regulations that allow developers to build extra units if and when they commit to offering affordable units within their buildings. For example, a site that is zoned for ten floors may be approved for a building of fifteen floors if the builder commits to build three floors of affordable units. The builder gets two extra floors, whereas the government is able to provide three floor equivalent of affordable housing.

There is a possibility that the government may require affordable units for low-income groups in these buildings too. These buildings offer a better living standard for low-income groups as compared to low-income communities only. Density bonuses represent an innovative instrument to generate desirable developer behaviour, but the scale of such instruments is relatively limited, and unlikely to be able to achieve any substantial market shifts.

4.5 Establish developer incentives

Being rational economic actors, developers are interested in profit maximization. Inclusionary zoning reduces profits and hence will lead to resistance. Developers, on the other hand can demonstrate significant structural power and hence need to be incentivized. Time value of money is a crucial factor in ensuring lucrative returns for developers. The government can incentivize developers by making it easy for them to access construction financing, avail favourable terms like subsidized interest rates and/or fast track approvals for construction financing of inclusionary zoned projects. However, these incentives must only be available to developers that are responsive to the overarching policy objective of affordability. Otherwise, such incentives only end up acting as further subsidies for already financially strong, and powerful developers—at the expense of the taxpayer and the lower income segments that affordable housing is supposed to benefit.

4.6 Reconfigure financing policy to stimulate bank financing

Banks can offer financing through two main avenues: construction financing and mortgage financing. Whereas the SBP policy discussion paper talked about financing options catering to both ends, the final announced policy covered only mortgage financing. Khalil & Nadeem (2019b) showed that the announced policy doesn't work at the current real estate prices and income levels. The government is focusing on easing mortgage regulations and impressing upon the courts to expedite the matter of

foreclosure laws. Once the foreclosure laws are approved, the banks can take a more aggressive position for extending mortgages. These will naturally focus on high-income groups. Due to the time it takes for the developers to build housing units, this will lead to mortgage applicants applying for already built units increasing the price of existing housing units. If the objective of the government is to use mortgages to boost the construction industry in cities and prevent urban sprawl, there should be a restriction that mortgages can only be used to acquire units in newly constructed high rises. To support inclusionary zoning, SBP policy should encourage mortgage financing in buildings that are built according to inclusionary regulations.

4.7 Role of PMRC

Pakistan Mortgage Refinance Company (PMRC) has been established to provide depth in the credit market and make instruments for long-term financing available to commercial banks. The PMRC has received funding from The World Bank. This role of PMRC can be enhanced, similar to the role played by Federal Housing Agency in US when it was introduced, wherein PMRC approves a certain project with minimum quality standards and inclusionary zoning for mortgage refinancing against a fee. Once a project is approved from PMRC, the developer, purchaser and commercial banks know that a chain of back-to-back financing can now be made available. The foundational support at the household end to easily secure financing for the project can be leveraged to offer construction financing to the developer against the project. The comfort of having assured mortgage credit as soon as the project is completed can improve cashflow certainty and thus facilitate both the banks and the developers. Again, the risk that will need to be mitigated against will be that banks and developers do not take the money and run, without offering the intended target of more affordable housing (low income Pakistanis). PMRC will need to work alongside government and banks in carrying out market research on the cost of construction, minimum quality standards and an optimal design. However, once a reasonable housing product has been designed, it will increase the supply of housing as builders will have an incentive to design according to those standards to access construction financing. Portfolio management will also need to be strengthened to ensure a healthy balance between different types of projects and locations to generate healthy returns and hedge risks.

4.8 Formalize alternative investments through a real estate development company

Pakistan does not have a social security system and is not a welfare state. Plots and real estate investments are the only avenues available to low and middle-income people to save a nest egg for retirement or for significant expenses later in life. Many households sell the property to finance their hajj pilgrimage, higher education expenses for their kids or marrying off their children. In the absence of a vibrant stock market or wide distribution of low-cost mutual funds which would enable households to invest savings in instruments that grow at a rate higher than the inflation rate, real estate is the only avenue for savings for many Pakistanis. The government needs to facilitate or provide alternate avenues for households to invest and grow their savings.

One option could be to establish a real estate development company. The government doesn't have the resources to capitalize such entity. The government can capitalize the company by conducting an IPO and inviting the general public to invest their savings which were previously invested in real estate. The real estate company will use the capital to acquire the land and by accessing developer financing from the banks, develop and deliver housing units.

Moreover, if the government's intention is to keep housing affordable and bring in international investors to participate in these projects, it should not revive the construction sector with a relaxation on transparency on sources of capital or compromising on taxation.^{.xxi} Developers have been building real estate without mortgage financing and construction financing. As the government is facilitating with financing which should lead to growth in construction activity, the government should not forego the opportunity to collect revenue, and to document the businesses involved in the housing sector. Reviving the construction sector by compromising on transparency and taxation will risk the diversion of already scarce capital to real estate development. Pakistan is already grappling with premature

deindustrialization. International investors with their money sent through proper channels will not be able to compete with it.

4.9 Mortgage Credit and Economic Growth

Bezemer (2014) finds that increases in housing finance go on to increase the ratio of debt servicing to GDP without a corresponding increase in GDP, since the extended credit is mainly channeled into secondary markets (already built houses) and results in transactions of the existing housing stock. Beck et al (2009) analysed the impact of bank credit to the business sector and households to study its impact on GDP of forty five countries. Using cross country regressions averaged over 1995-2005, they found that only bank credit to the business sector increases GDP. This implies that efforts to stir economic growth and reduction in inequality will have to be delivered through the business sector. Bezemer and Samarina (2019) studied the Gini Coefficient impact of credit extended to households and credit extended to the non-financial business sector. Analysing the credit data for forty countries, they found that credit to households increases inequality and credit to businesses decreases inequality. Credit to households increases capital gains and incomes connected to the real estate sector. Such incomes are connected to well-off households which widens income disparity. Chakraborty, Goldstein and MacKanlay (2018) demonstrate that rising house prices led banks to increase their allocation to mortgage credits and move away from financing the real sector of the economy, which had an adverse effect on the growth potential of the economy.

Jorda, Schularik and Taylor (2014) study data from seventeen countries to show that a lucrative housing sector (as witnessed by rising house prices) has resulted in banks in most countries becoming real estate funds. Banks have moved away from their textbook role of channelling savings into the real sector as investment, with as much as 60% of their balance sheets comprising of mortgage credits. Mian, Sufi and Verner (2015) analysed data from thirty countries from 1960-2012 to establish that easing credit availability to households resulted in increased consumption with a knock-on effect of increased imports. The Bank of England (2016) noted that between 2005 and 2015 in the United Kingdom, 94% of the mortgage credits were used to facilitate the exchange of an existing house and only 6% went toward the financing of new housing units.

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- ^{iv} <https://www.brecorder.com/2019/02/11/472761/sez-need-special-attention/>
- ^v https://www.dawn.com/news/amp/1504230?__twitter_impression=true
- ^{vi} Table 7.9 Monthly Statistical Bulletin Jan 2019 <http://www.pbs.gov.pk/content/monthly-bulletin-statistics-january-2019>
- ^{vii} Land price of Rs.3,405 per SF as per Zameen.com and construction cost of Rs.1,500 per SF for single storey unit as per <https://www.brecorder.com/2019/06/17/503276/naya-pakistan-housing-is-stagnant-in-sindh>
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- ^x The blue bars show the monthly income of quintiles of income groups as per Household Integrated Economic Survey 2015-16 (HIES). The beige bar is the monthly mortgage instalment of Rs. 21,122 for the cheapest house under Naya Pakistan Housing, which is a 3-marla unit in Lodhran. The cost of the unit is PKR 1,600,000 and installment has been calculated assuming a 10% down payment and a 20-year mortgage at 17% interest rate (KIBOR of 13% + 4% spread).
- ^{xi} https://nphp.nadra.gov.pk/nphponline/download/nphp_eSahulat_Form.pdf
- ^{xii} <https://www.tabadlab.com/publications/first-response/low-cost-housing-just-out-of-reach/>
- ^{xiii} 30% saving in construction cost which comprise 30% of total housing cost; $30\% \times 30\% = 9\%$
- ^{xiv} Dan Andrews, Aida C. Sanchez and Åsa Johansson, 'Housing markets and structural policies in OECD countries'. OECD Economic Department Working Papers, No. 836 (Paris: OECD Publishing, 2011)
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