



Life on the Edge:  
*Reforming Mexico City's Housing Market*

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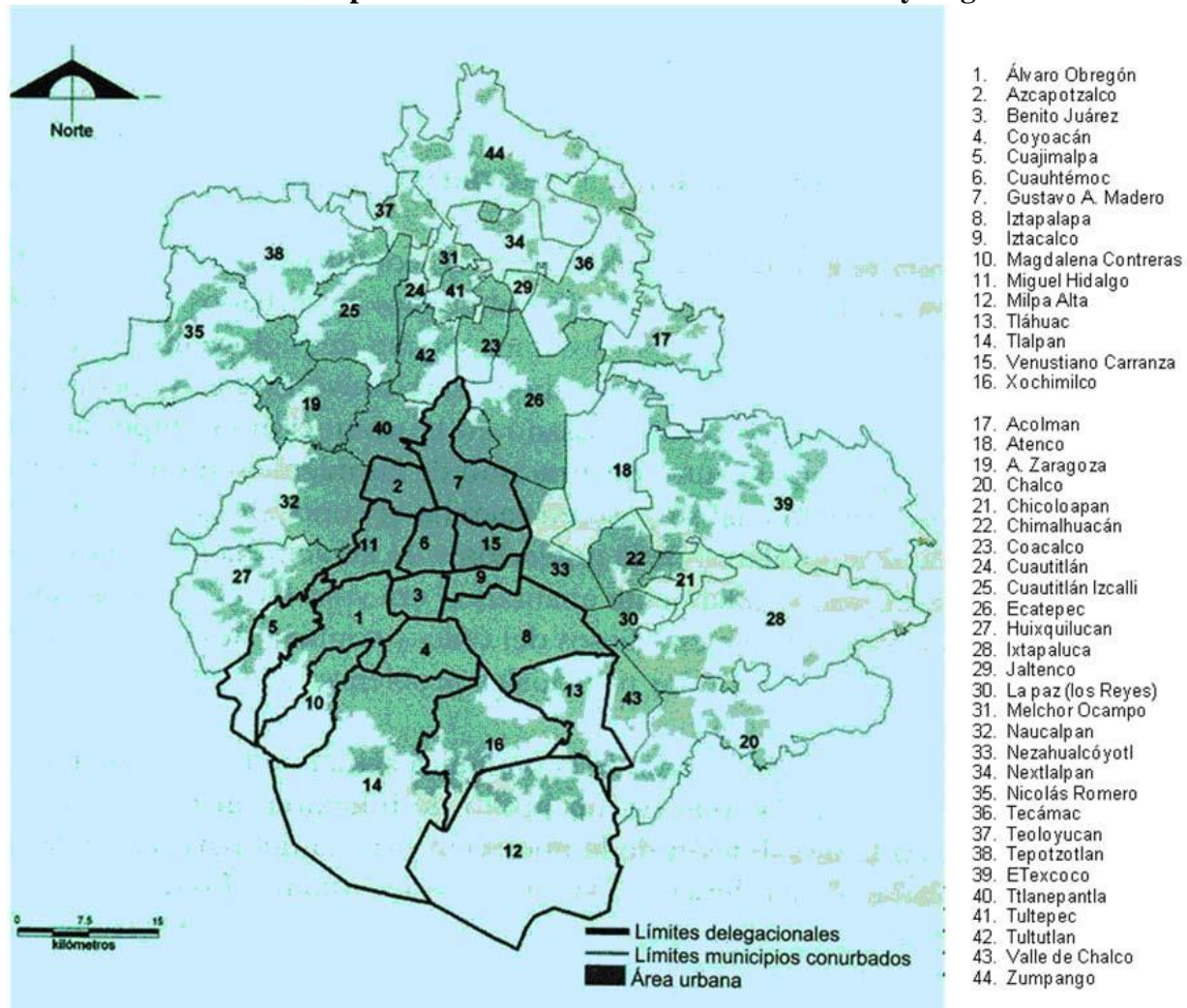
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### Zona Metropolitana del Valle de Mexico – Mexico City Region<sup>1</sup>



*The above map shows the capital region of Mexico. The areas delineated in thick black lines are the delegaciones of Mexico City, 16 semi-autonomous neighborhoods within the Federal District (DF). The communities delineated with thin lines are municipalities within the State of Mexico that form part of the region and our story. Shaded regions are built-up urban areas.*

<sup>1</sup> Velázquez Mejía, Osvaldo. “La zona metropolitana de la Ciudad de México: Una zona habitable, pero sin habitabilidad. Un acercamiento desde la subjetividad.”

## I. Introduction

The massive urban expanse of the metropolitan area of Mexico City makes its way northward from the Distrito Federal, or Federal District, to the Estado de Mexico (State of Mexico), where its outer edges are defined by subdivisions of small, connected houses. Likely built by one of several large homebuilders, like Geo, Urbi, or Homex, the homes found there, priced between 1.5 million and 150,000 pesos (\$150,000 to \$15,000), are meant to provide a range of affordable options for Mexican workers. These workers are largely receiving subsidized financing for the housing from a government agency called INFONAVIT (Instituto del Fondo Nacional de la Vivienda para los Trabajadores), to whom they have paid a 5 percent payroll tax since they began work in the formal sector. INFONAVIT also provides loans to the very homebuilders whose homes they are buying.

But in recent years, this peripheral expansion of housing around Mexico City has increasingly gone from providing *un patrimonio para la familia*, a means of creating a family homestead, to being a nightmare for homeowners, homebuilders, and the Mexican government. In the city of Cuautitlán Izcalli, the homeowner Jorge Arzave lives in a failing development called Lomas de San Francisco de Tepojaco. As the *Christian Science Monitor* wrote of the far-off neighborhood, “The area has scarce water, overcrowded schools, no health clinics, and poor transportation to and from Mexico City, 90 minutes away.”<sup>2</sup> Arzave’s personal home, only ten years old and located near an active landfill, is already falling apart. Others around him have abandoned their homes, adding to the 5 million units of social housing financed by INFONAVIT and others that sits empty nationwide.<sup>3</sup> Centro Prodh, a human rights law firm representing Arzave, has detailed the size and scope of the problems in Lomas. The 45,000 residents of

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<sup>2</sup> Eulich, Whitney. “In Mexico, low-income homeowners watch their dreams crumble.” *The Christian Science Monitor* June 26, 2013.

<sup>3</sup> Ibid.

Lomas occupy homes built ten years ago of such poor quality that walls move with hand pressure and pipes are already bursting in an area with temperate climate.<sup>4</sup> The issues are not limited to this one development. In Ecatepec, also in State of Mexico, the Las Américas subdivision, built on a toxic waste site, is already seeing major structural deficiencies. Seven thousand homes are affected.<sup>5</sup>

As residents leave low-quality homes in poorly-sited developments far from jobs, the homebuilders are starting to feel the crunch. The Mexican government put a temporary hold on new construction as it worked out a new National Housing Policy intended to promote density. However, as a result of the changes in policy and a general drop in sales for Homex, Geo, and Urbi, the homebuilders have fallen behind on their debts and their stock prices have crashed, as seen below:

**Figure 1: Decreasing Homebuilder Stock Prices<sup>6</sup>**



<sup>4</sup> Centro Prodh. *Informe sobre el Estado de México durante el sexenio 2005-2011*. Ciudad de México: Ideas en Punto, 2011.

<sup>5</sup> Centro Prodh. "Caso Las Américas: Construcción de Viviendas sobre terreno contaminado." 2014.

<sup>6</sup> "Dropping a brick." *The Economist* June 1, 2013.

As these problems have become clearer and the young government of Enrique Peña Nieto has promised action, what can and should be changed to ensure that all Mexicans can provide the all-important *patrimonio a la familia*, the Mexican dream of a house for one's children?

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In Mexico, 78 percent of citizens live in cities. Twenty-one million of them live in the metropolitan area of Mexico City,<sup>7</sup> which has long enjoyed a reputation as a city huge in population and urban problems, particularly its longstanding battle with high levels of air pollution. Mexico City's high levels of pollution have led to serious negative health consequences.<sup>8</sup> Contributing to both this pollution and the continued loss of green space has been the significant sprawling out of the Mexico City metropolitan area. Between 1970 and 1990, the physical area of the metropolitan area nearly doubled from 75,000 hectares to 139,000 hectares.<sup>9</sup> Suarez and Delgado (2007) predicted that this expansion would add between 38,000 and 56,000 of urbanized land by 2020.<sup>10</sup>

Resolving the issues that plague Mexico City would not only be an environmental victory. It would also aid the Mexican nation in its continued economic development strategies, as it seeks to escape a "middle-income trap" that has marked the country for decades. At its current growth rate, Mexico is not expected to become a high-income country until 2074.<sup>11</sup> Housing has long been key to Mexico's plans to grow its economy and empower its citizens. And much as the housing policy in the United States has focused on encouraging

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<sup>7</sup> Over 8 million are in the Distrito Federal, "Mexico City," while the rest are in the State of Mexico or the town of Tizayuca in Hidalgo.

<sup>8</sup> Loomis, Dana, Margarita Castillejos, Diane R. Gold, William McDonnell, and Victor Hugo Borja-Aburto. "Air Pollution and Infant Mortality in Mexico City." *Epidemiology* 10.2 (1999): 118-123.

<sup>9</sup> Suarez, Manuel and Javier Delgado. "La expansion urbana probable de la Ciudad de Mexico. Un escenario pesimista y dos alternativos para el año 2020." *Estudios Demograficos y Urbanos* 22.1 (2007): 108.

<sup>10</sup> *Ibid.*, 123.

<sup>11</sup> Felipe, Jesus, Arnelyn Abdon, and Utsav Kumar. "Tracking the Middle-income Trap: What Is It, Who Is in It, and Why?" Levey Economics Institute Working Paper Series 715 (2012): 31.



homeownership, Mexico has recently attempted to make it tremendously easy for average and poorer Mexicans to access cheap financing to purchase a new home. Some have called the Mexican experiment a “success story.”<sup>12</sup> And indeed, in 2012 alone, the main mortgage lender in the country and a major focus of this essay, INFONAVIT, issued 578,396 mortgages to Mexican homebuyers in 2012, for a total of \$12.6 billion.<sup>13</sup> Just four years after the global housing bust, Mexico appeared to be riding high. But as the above example shows, soon disaster would also strike the exurbs of Mexico City, just as they did those of California and Florida. A new reform policy initially sent further shockwaves through the housing market.

This paper investigates the economic and political forces that drive the affordable housing market and housing policy in greater Mexico City. It examines how these forces ought to be shaped to ensure that the new Mexican housing policy leads to better outcomes for the Mexican city and its potential homebuyers, specifically in terms of improving quality and job accessibility. I find that the need to provide affordable housing for a relatively poor population and the incentives created by INFONAVIT do drive an unsustainable, low-quality housing production system. These market concerns ought to be resolved by improvements in planning, fiscal policy, and governance in the three involved jurisdictions: the federal government, the Distrito Federal (DF), and the Estado de México (State of Mexico). Since INFONAVIT has made tremendous strides in its effectiveness in the last decade and a half and the DF has embraced a coherent set of urban policies, both are poised to launch new policies and incentives to shape the low-income market. The State of Mexico, meanwhile, is a corrupt and poorly-run state, where a fundamental reform of government is needed to effect housing change.

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<sup>12</sup> Eulich, Whitney. “In Mexico, low-income homeowners watch their dreams crumble.” *Christian Science Monitor* June 26, 2013.

<sup>13</sup> Guthrie, Amy. “Mexican Mortgage Institute Infonavit Issued 578,396 Loans in 2012.” *Wall Street Journal* January 16, 2013.



## *Approach*

To accomplish the objectives of this paper, I will first situate the discussion in existing theories of the economics and politics of housing markets, as applied to the low-income setting. Though Mexico City is, like New York or Santiago or Beijing, a unique housing market, those that have studied housing around the globe have pointed to dynamics and incentives that drive urban real estate markets generally. From this broad overview, I will examine the theories specific to Latin America, where a number of truths hold. Latin American cities generally fall into a lower to middle income level, where a large portion of the overall housing demand is for very affordable units. And the housing markets of the cities themselves are notable for their mix of formal and informal construction. The informal sector has broad implications for the efficient functioning of housing markets and for the politics of housing regulation.

From this broader introduction, I will move to an explanation of the political economy of Mexico City housing from the 1940s until 1993 (Section III). This period represents the significant post-war growth of Mexico City before the seminal year of 1994, which would fundamentally alter the politics and economics of Mexico. In this pre-1994 period, several pivotal political and economic factors dictated housing in the capital city. On the economic side, I will focus on a shifting Mexican economy that drove in-migration, rent regulations, and the *ejido* land tenure system. With the presence of in-migration in a Latin American setting, we have to give special attention to how the informal housing sector, from early on, shaped the citywide picture. Politically, I will explain how the politics of the ruling PRI government, both at the national and state levels, drove a political climate that encouraged the first iterations of sprawl policy. And though this period can be seen as a cohesive era of certain policies and politics, changing economic conditions divide the period into pre-1970 growth and stability and post-

1970 recession and upheaval. In the pre-1970 period, I will draw heavily from the work of Bernard J. Frieden, who completed an early study of Mexican housing in 1965. The 1970-1994 period is something of a “golden age” of research into the Mexican capital, with a series of works by Peter Ward and Alan Gilbert driving our understanding of that time.

In 1994, three events came together to fundamentally alter Mexico City’s housing market: the Mexican financial crisis, the beginning of NAFTA, and the election of Ernesto Zedillo, who would democratize the country over the next six years. In the post-1994 period (Section IV), I will look at how the economic fundamentals and politics of Mexican housing changed because of these significant events. In particular, I will discuss how recession and then new popular politics drove INFONAVIT to become an increasingly large, central, and conflicted player in the housing market. These changes having taken place, I will ask what happened in the last decade to bring the Mexico City region to the current crises of abandonment and low quality. In Section V, I will pause from this descriptive portion to then analyze the present state of the Mexican housing market in the terms of the previously introduced economic and political models.

In Section VI, I then turn to the new policy, proposed in February 2013. I will lay out the various and ambitious goals set forth by both the President and federal departments. I will compare this new agenda both to previous efforts to push Mexican housing in a more “sustainable” direction to see if anything is different and to competing proposals for reform to see what other efforts might be possible. In Section VII, I will examine the last eleven months to see what the response has been, even at this early stage, and to what extent regulatory commitment has been kept.

From there, focusing on two goals of the federal government in particular—the ability of the federal government to promote affordable housing in denser, central environments and their ability to improve the existing quality of housing—I will look at existing obstacles to implementation of these goals, then evaluate how the political and economic realities of the current housing market need to be shaped for success. This discussion will form Section VIII. In closing (Section IX), I will assess what success in these two policy areas would mean for Mexico and Mexico City in the nation’s efforts to escape the middle-income trap and grow economically.

## **II. Analytic Framework: The Economics and Politics of Housing**

A broad literature has sought to explain both the economics and politics of housing markets in developed and developing nations. In order to better understand the economic forces driving development in the Mexico City region, I will create an analytic framework that begins with Rothenberg, et al.’s (1991) microeconomic models for explaining both consumer and producer choices in the housing market and apply them to a working-class setting. In seeking to complicate those models, I will use more recent analyses to describe the macroeconomic and governmental impacts on the market. From this general discussion, I will introduce how the characteristics of the Latin American housing market, particularly the role of informality, begin to alter our traditional understanding of how housing markets should efficiently function and do function inefficiently in practice.

The housing market is a commodity market driven by classical laws of supply and demand. The good at the center of this market is defined not only by endogenous factors (number of bedrooms, bathrooms, size, etc.), but also by exogenous, neighborhood characteristics. In the literature, these two factors are referred to as housing services and housing

attributes.<sup>14</sup> Hedonic studies try to map out the attributes that drive housing desirability and related prices, and they “have indicated that the structure/lot nexus itself may be decomposed into...attributes related to neighborhood, condition, racial composition, air pollution, public services and taxes, and accessibility.”<sup>15</sup> Goodman and Thibodeau found that the Dallas, Texas housing market is segmented by the quality of local public schools.<sup>16</sup> And given the ways that units can differ in their internal, endogenous amenities, it is clear that housing is a highly heterogeneous good.<sup>17</sup> In their work, Rothenberg et al. create a theoretical model for housing consumption and production that, while by no means perfect nor unique, paints a picture of individual choice and constraints that can be applied effectively to the low-income market. A fuller, mathematical explanation of the model is provided in Appendix A. This section will describe the key intuitions, which can be summarized as:

1. When consumers demand a house, and thus, when the market sets a price for such a house, the consumer is really demanding a set of attributes to maximize utility.
2. Consumers place a bid on housing based on their ability to pay and on desired characteristics.
3. In deciding between renting and owning, individuals are deciding between the consumption and investment values of housing (and the costs of both).
4. An owner will set the price of a housing unit based on its value and how quickly he expects it to sell.
5. In constructing or converting a housing unit, the builder/owner will seek to maximize revenue while minimizing cost for the construction or conversion.

(1). Housing can be described with a simple hedonic index with a series of characteristics  $h_i$ , that can be believed to effect the price of housing. Segmentation in the market can be explained through a difference in one such characteristic.<sup>18</sup> Subject to certain market and

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<sup>14</sup> Rothenberg, Jerome, George C. Galster, Richard V. Butler, and John Pitkin. *The Maze of Urban Housing Markets: Theory, Evidence and Policy*. Chicago: University of Chicago Press, 1991, 13.

<sup>15</sup> Ibid., 15.

<sup>16</sup> Goodman, Alan C. and Thomas G. Thibodeau. “Housing Market Segmentation.” *Journal of Housing Economics* 7.2 (1998): 141.

<sup>17</sup> Rothenberg et al., *The Maze*, 48.

<sup>18</sup> Ibid., 51.

personal budget constraints, buyers and sellers will engage in a competitive housing market that results in the production and consumption of housing units with the desired characteristics.<sup>19</sup>

(2). Taking housing attributes, utility, and income into consideration, individuals will settle on some bid,  $B$ , for housing. This market for bids yields important information about the housing market: “To the extent that households with similar  $B$  functions and incomes select similar housing solutions, the housing market will naturally tend toward segmentation by quality—an insight which, as we have noted, is an essential organizing feature of urban housing markets.”<sup>20</sup> Looking back at the original hedonic model, each  $h_i$  describes the various commodities embodied within a housing unit that the consumer must decide between, be it bedrooms or the local school. Each  $h_i$  has its own supply and demand functions, and the relative weight of one characteristic over the other to an individual may shift an individual’s choices within other commodity “submarkets.”<sup>21</sup>

(3). Complicating matters is the fact that housing can be both bought and rented and that switching from one’s current housing to another has substantial costs. As Logan and Molotch found, housing has both a use value (housing as consumption good, in economics) and an exchange value (housing as investment).<sup>22</sup> When a household decides between renting and owning, it decides between the welfare associated purely with consuming the good over several periods and with the welfare it gains from the investment value of the housing.<sup>23</sup> The authors of this theory propose, then, that the decision on whether to rent or own will be determined by

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<sup>19</sup> Ibid., 54.

<sup>20</sup> Ibid., 57.

<sup>21</sup> Ibid., 63.

<sup>22</sup> Molotch, Harvey and John R. Logan. “Urban Dependencies: New Forms of Use and Exchange in U.S. Cities.” *Urban Affairs Review* 21 (1985): 144.

<sup>23</sup> Ibid., 94, 100.

comparing how much the individual values ownership and the resulting investment value of homeownership versus the transactional costs of actually owning a home.<sup>24</sup>

(4). If we move to the microeconomic perspective on the demand side, we can examine the market incentives for the unit owner and the builder to place a unit on the market, build new units, or convert (“gentrify” or “degrade”) their units to another submarket. Important to the supply side is the role of timing. While a builder takes a long time horizon in his decisions, a landlord can be said to have a *market period* during which the unit is for-sale and not easily changed. In that period, the owner will set a reservation price, the minimum acceptable price of sale.<sup>25</sup> The owner responds not only to the value of the home embodied in its expected price, but also to the strength of the market. If he expects the unit to sit and incur costs because of a weak market, the reservation price drops.

(5). The builder, meanwhile, faces his own incentives as to whether to increase the supply of housing.<sup>26</sup> Faced with a liquidity constraint, the builder chooses to maximize his rate of return for the housing that he builds by maximizing profit and minimizing cost. Changes in the value of a type of dwelling or the cost of building that value will significantly influence whether and what he builds. An additional action that owners can take is to convert their properties from one submarket to another. They can degrade the quality to extract rents from the poor, divide rooms to rent to more people in one building, or they can choose to improve the property.<sup>27</sup> When there are significant market shifts that make the revenue to be received from conversion greater than the cost of conversion—which may include the opportunity cost of a lost market—we should expect a conversion to occur.

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<sup>24</sup> Ibid., 101.

<sup>25</sup> Ibid., 132.

<sup>26</sup> Ibid., 135.

<sup>27</sup> Ibid., 139-140.

Fundamentally, this microeconomic perspective provides a series of broad economic insights. First, the housing “market” is comprised of a series of submarkets that consumers are demanding, with neighborhood attributes being a part of that service. Since desirable attributes within submarkets should drive demand and thus prices, we should expect market-produced low-income housing to appear in areas with few quality housing services. Second, housing has a consumption and investment value, and thus housing policy ought to be designed to ensure that an individual’s housing choice brings him daily and long-term economic gains. For homeownership to “make sense” for lower-income people, it will need to be priced particularly cheaply so as to not crowd out other necessities of life. And, unless the investment returns are guaranteed—and unlikely to send the homeowner into debt, then renting would make greater sense, theoretically. Third, affecting the costs that the consumer faces in buying housing or that the producer faces in constructing or maintaining housing will fundamentally alter the market. In the low-income setting, since we can expect buyer bids to be low because of their limited liquidity, then to guarantee returns we should expect builders to severely curtail costs.

This model of microeconomic choices must be complemented with a robust macroeconomic theory. This theory is drawn from a variety of sources, but focuses on the role that broad market forces, government actions, and capital markets play in defining the big picture of housing markets. On the demand side, I will consider the following factors:

- Population and demographics
- Economic growth, booms and busts
- Government subsidies and transfers to consumers
- Government investments in local services
- Finance availability

On the supply side, I will examine the roles of these factors in constraining or promoting the availability of housing units:



- Government land use policy
- Government subsidies for builders
- Government construction of housing
- Government infrastructure investments.
- Finance markets

As a commodity, the strength of the housing market is determined in part by demographics and economic performance. If there are more consumers of working age, and those consumers are doing well, they will buy more housing. Ohtake and Shintani found that housing demand shoots up substantially for individuals in their 20s and then goes down precipitously after age 60.<sup>28</sup> Cities should particularly expect more housing demand when they are doing well. According to Hwang and Quigley,

Housing markets are local, and housing market outcomes reflect local economic conditions. Housing prices are bid up as a result of better employment opportunities and higher incomes enjoyed by residents in an expanding metropolitan market. Changes in the distribution of income are reflected in the distribution of prices and housing amenities. Similarly, housing vacancy rates can be expected to decline when the local economy improves and as the demand for housing increases.<sup>29</sup>

The World Bank has found that income level strongly predicts a nation's level of housing demand.<sup>30</sup> The nature of housing demand is thus intricately tied to the economic wellbeing of a community.

The action of governments, at national and local levels, can drive the broad supply of, and demand for, housing in the market. The policies they enact are not only important macroeconomic factors, but speak to the politics of housing markets. Liberal land use policies can allow for large increases in the supply of housing and lower prices, albeit with high

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<sup>28</sup> Ohtake, Fumio and Mototsugu Shintani. "The effect of demographics on the Japanese housing market." *Regional Science and Urban Economics* 26.2 (1996): 192.

<sup>29</sup> Hwang, Min and John M. Quigley. "Economic Fundamentals in Local Housing Markets: Evidence from U.S. Metropolitan Regions." *Journal of Regional Science* 46.3 (2006): 425.

<sup>30</sup> Warnock, Veronica Caddac and Francis E. Warnock. "Markets and housing finance." *Journal of Housing Economics* 17.3 (2008): 240.

externalities like sprawl and inefficient service provision. The ability for corruption can drive production, often uncoordinated and poor-quality production, even further. Looking at Indonesia, Server found that developers could easily bypass land conservation restrictions with a quick handout to their local planning officials.<sup>31</sup> Governments with very restrictive policies can drive the housing market in a different direction. In their 2002 paper, Glaeser and Gyourko found that the cost of housing in the United States largely mirrored the price of new construction. That is, that price setting was about as low and efficient as possible. In the places where costs are very high, strict zoning appeared to be to blame, even accounting for local amenities.<sup>32</sup> There is also space for corruption within the restrictive setting, as entrenched interests can prevent growth that might compete with their self-interest. In his 1981 work *City Limits*, Peterson asserts that cities are fundamentally interested in minimizing their tax and social service burdens. These limited cities may adopt restrictive zoning to ensure such an outcome.<sup>33</sup> Not content to just regulate the private provision of housing, the government can take an active role in financing housing development through subsidy to individual and builder, or through the public construction of housing.

Governments can invest in infrastructure that either makes particular housing units more attractive or facilitates the construction of new units. Segmentation within the housing market, beyond describing differences in the fundamental quality of the physical building, points to differences in amenities near the housing stock. These amenities are often provided by the government. The subsidized construction of highways and utilities infrastructure into previously undeveloped areas marks how governments can prime areas for housing development.

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<sup>31</sup> Server, O.B. "Corruption: A Major Problem for Urban Management." *Habitat International* 20.1 (1996): 31.

<sup>32</sup> Glaeser, Edward L. and Joseph Gyourko. "The Impact of Zoning on Housing Affordability." NBER Working Paper 8835, 21.

<sup>33</sup> Peterson Paul E. *City Limits*. Chicago: University of Chicago Press, 1981.

The market for finance has a major influence in the amount and nature of housing supplied and demanded. Where housing finance is not well-developed, as was traditionally the case in developing countries, it can serve as a source of stickiness in the market as individuals cannot purchase new homes or find themselves limited in their purchases to homes that they can buy with today's money alone. As Warnock and Warnock write,

While there are many aspects to the housing market...it can be argued that the provision of housing finance is a binding constraint that must be addressed before the market can sustainably provide adequate housing. Even in the best of environments, housing is a major purchase—average home prices typically ranging from 4 times annual income in developed countries to 8 times annual income in emerging economies...that is affordable only when payments can be spread out over time. Absent a well-functioning housing finance system, for many the market-based provision of formal housing will be neither adequate nor affordable.<sup>34</sup>

And so people will become stuck in their existing homes. When housing finance is oversupplied, due to loose or even predatory lending policies, markets begin to fall apart. In a sage and foreboding article written only months before the housing bubble collapsed, Shiller identifies the tremendous disconnect between the massive increase in prices of homes and their more modest increases in value. When times are good, housing can win the “animal spirits” of the market and become overvalued as an investment.<sup>35</sup> That leads to a second type of market stickiness. When the overvalue of the home leads to it going “underwater,” the property becomes very difficult to return to the market because of the costs that the owner faces and the legal wrangling associated with the property's debt.<sup>36</sup> A stable housing policy is thus good housing policy, from the perspective of homeowners.

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<sup>34</sup> Warnock and Warnock, “Markets and housing finance,” 240.

<sup>35</sup> Shiller, Robert J. “Understanding Recent Trends in House Prices and Home Ownership.” NBER Working Paper 13553. 2007.

<sup>36</sup> Case, Karl E. “The Central Role of Home Prices in the Current Financial Crisis: How Will the Market Clear?” *Brookings Papers on Economic Activity* (2008): 161-193.

If a lack or overabundance of housing finance provides stickiness in the market, questions of land tenure may provide even greater limits to market efficiency. So-called “tenure insecurity” may keep homeowners from investing in improved housing, according to the World Bank.<sup>37</sup> Others argue that tenure is not well tied to actual investment activities. Instead, the real concern about tenure insecurity may be that it keeps homeowners from accessing the formal housing markets and construction of insecure properties may pose a high level of expense for low-income landowners because of limited credit.<sup>38</sup>

This issue of land tenure brings us to our discussion of Latin America. In contrast to the United States market, Latin American housing markets represent a far smaller portion of the national economy, witness large gaps between the demand and supply of housing, and rely on the informal sector to provide most low-income and working-class housing. Underpinning this housing market is a land market that is largely unregulated. This situation means that Latin American housing markets behave fundamentally differently from those of highly regulated markets, like the United States. In the last decade, the International Monetary Fund (IMF) reported that Latin America has experienced a sustained boom in mortgage credits, due in large parts to reforms of the lending market that made mortgages more secure for creditors. The housing sector is growing quickly across the region, largely due to subsidized principal and interest payments. In Colombia, housing construction increased 30 percent between 2009 and 2010, just one year after housing markets collapsed elsewhere in the world.<sup>39</sup>

Despite this “progress,” housing finance in Latin America is still underdeveloped. This new access to credit has largely benefited wealthier homeowners. And in 2007, only 60 percent

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<sup>37</sup> Durand-Lasserve, Alain and Harris Selod. “The formalization of urban land tenure in developing countries.” 2007, 3.

<sup>38</sup> De Souza, Flavio A.M. “Land Tenure Security and Housing Improvements in Recife, Brazil.” *Habitat International* 23.1 (1998): 32.

<sup>39</sup> “Déjà Vu for Latin America’s House Hunters?” Knowledge at Wharton. January 13, 2012

of families in Latin America and the Caribbean had housing deemed “adequate.”<sup>40</sup> The mortgage market remains fairly small across the continent. In Brazil, which is fairly representative of other Latin American nations, housing loans represent only 6.9 percent of all loans and 2.9 percent of GDP. As of 2006, the housing shortage in Brazil reached 7 million units, with high obstacles to housing for the poor.<sup>41</sup> In the United States, the housing shortage manifests itself through high cost burdens for the poor, with some degree of homelessness. In Latin America, the mismatch between demand and supply brings about the construction of informal housing. As would be expected when there is very high demand and limited supply, central city housing costs in Latin America are surprisingly expensive.

**Figure 2: Central City Housing Affordability<sup>42</sup>**

Minimum wage and cost of residential properties in selected Latin American countries

Country	Min. wage per year (US\$)	US\$ cost per m <sup>2</sup>	Number of years to buy 40 m <sup>2</sup>
Argentina	6540	3144	19.2
Bolivia	1416	1120	31.6
Brazil	4656	3836	33.0
Chile	4660	1794	15.4
Colombia	3960	2102	21.2
Costa Rica	3762	1642	17.5
Guatemala	2734	1522	22.3
Honduras	3640	1450	15.9
Mexico	1753	2088	47.6
Nicaragua	2218	1342	24.2
Peru	3384	1306	15.4
Venezuela	4968	3530	28.4

<sup>40</sup> Cubeddu, Luis, et al. “Keeping an Eye on Housing Markets in Latin America.” *Regional Economic Outlook Analytical Notes*. Spring 2012.

<sup>41</sup> Martins, Bruno, Eduardo Lundberg, and Tony Takeda. “Housing Finance in Brazil: Institutional Improvements and Recent Developments.” IDB Working Paper IDB-WP-269. 2011: 2, 4.

<sup>42</sup> Caldieron, Jean M. “Land Tenure and the Self-Improvement of Two Latin American Informal Settlements in Puerto Rico and Venezuela.” *Urban Forum* 24.1 (2013): 51.

Peter M. Ward explained the resulting emergence of informal residences, writing,

In Latin America as in other less developed regions of the world, rapid urbanization has been marked by the growth of low-income irregular settlements, be they squatter invasions or illegally developed subdivisions...As the phenomenon of irregular settlements became widespread from the 1950s and 1960s onward, and as informal or illegal land development outpaced formal urbanization, by the 1970s self-build settlements made up anywhere between 10 and 60 percent of the built-up area in many cities.<sup>43</sup>

Another chart from Caldieron (2012) emphasizes the pervasive presence of “slums” in Latin American cities:

**Figure 3: Percentage of Urban Population Living in Slums<sup>44</sup>**

Country	% slums (2005)
Argentina	26.2
Bolivia	50.4
Brazil	29
Chile	9
Colombia	17.9
Costa Rica	10.9
Guatemala	42.9
Honduras	34.9
Mexico	14.4
Nicaragua	45.5
Peru	36.1
Venezuela	32

As Ward’s words remind us, housing markets have significant spatial impacts, a central concern of this paper. In the United States, the limited city’s interest in the intensification of land use drives middle-class housing to the periphery and suburban highway construction facilitates

<sup>43</sup> Ward, Peter M. “‘A Patrimony for the Children’: Low-Income Homeownership and Housing (Im)Mobility in Latin American Cities.” *Annals of the Association of American Geographers* 102.6 (2012): 1492.

<sup>44</sup> Caldieron, “Land Tenure,” 50.

further middle-class escape from the city.<sup>45</sup> Across Latin America, irregular land use regulations in the periphery, along with similar highway construction, have attracted development, affordable and gated, in these no-man's lands.<sup>46</sup> In their study of Argentine land use regulations, Monkkonen and Ronconi highlight the multiple effects of the typical Latin American regulation regime: significant obstacles to development in the center and poor peripheral oversight. Developing housing in central city Buenos Aires often requires developers to contribute expensive infrastructure improvements that crowd out more affordable uses of the land.<sup>47</sup> The authors find that communities with the most stringent official regulations drive people to develop out of compliance in peripheral areas, such that overall land prices for the metropolitan area drop.<sup>48</sup>

Having settled in low-cost land that often has questionable legal status, families often build up the homes. With the intention of building homes for their family—*el patrimonio para los hijos*—dwellers of informal settlements invest in expansions that allow multiple generations to live in the same residence.<sup>49</sup> Though many researchers believe that such improvement will not take place if land tenure is not assured, Caldieron argues that homeowners will invest in their homes if they perceive to be immune from government interference.<sup>50</sup> If a whole community has sprouted and survived for some time, its residents are likely to continue to build upon the “self-help” housing that they started.

Thus, there emerge particular micro and macroeconomic attributes of the Latin American housing market. The microeconomic perspective, of course, provides the preferences and actions

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<sup>45</sup> Schafran, Alex. “Origins of an Urban Crisis: The Restructuring of the San Francisco Bay Area and the Geography of Foreclosure.” *International Journal of Urban and Regional Research* 37.2 (2013): 671.

<sup>46</sup> Monkkonen, Paavo and Lucas Roncini. “Land Use Regulations, Compliance and Land Markets in Argentina.” *Urban Studies* 50.10 (2013): 1954.

<sup>47</sup> Ibid., 1952.

<sup>48</sup> Ibid., 1966.

<sup>49</sup> Ward, “A Patrimony for the Children.”

<sup>50</sup> Caldieron, “Land Tenure,” 52.



of consumers and producers. Liquidity constrained, Latin American low-income consumers prefer attributes of affordability, but also the ability to pass the value of the home directly to their children. Therefore, because of the centrality of this value, individuals will heavily favor buying their homes, even if they incur greater cost. And in fact, poor and working class residents own and largely do not rent.<sup>51</sup> And yet, because of the extreme poverty of the region, the maximum potential “bid” of a low-income homeowner may be lower than the lowest market available rent. When those bids are so low, owners will elect to own informal properties. Then, they may enter the market for expansion. This market for expansion has implications for programs that aim to expand new housing stock, as homeowners are able to produce a house that meets their budgetary constraints and consumption needs. And though some workers may be able to bid high enough to enter the formal market, these people are still fairly poor. Therefore, we expect the optimal actions of producers to drastically minimize the cost of construction, either through low-quality construction or the selection of low-cost land that may be largely undesirable. We also can predict a lot about macroeconomic rules in Latin America. While there may be a level of efficiency in the self-construction of housing, the issues of tenure, finance, and affordability in Latin America create severe inefficiencies in the market for higher quality housing and missed opportunities for wealth creation. Ward noted that mobility in informal communities was limited because “there are limited housing alternatives provided by public or private sector social interest housing, which for many families remains unaffordable.”<sup>52</sup> Therefore, individual choices and welfare are severely constricted by the structures of credit and affordable housing programs.

While the treatment of the historical development of the housing market will provide much of the explanation of how politics and policy affect housing, I want to first establish a

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<sup>51</sup> Ward, “A Patrimony for the Children,” 1491.

<sup>52</sup> *Ibid.*, 1496.

political framework that is deeply rooted in the incentives to urban governments in housing and the larger political system of Mexico, including taxation policy. Doing so will help to explain the inner workings and logic of decisions at both national and local levels.

Mexico is a federal republic. Today, there is a national Congress and President, in addition to state legislatures and governors and local municipal executives. For much of the 20<sup>th</sup> Century, Mexico was governed by the authoritarian Institutional Revolutionary Party (PRI). The PRI's support was bolstered by the farmworkers' union (CNC), labor movements (CTM), and CNOP, a coalition of interest groups, from women's and retiree groups to business interests.<sup>53</sup> Throughout the authoritarian period, policymaking was done in secret behind closed doors, which concentrated power and influence in the capital.<sup>54</sup> Not surprisingly, then, is that the states were largely controlled by the federal government, particularly in the case of the DF.

The DF is divided into 16 delegaciones, neighborhoods within the city that have their own governance structures. Prior to 1997, both the mayor of Mexico City and the 16 delegaciones leaders were appointed by the President.<sup>55</sup> And thus, for many years, the DF saw itself governed by individuals with limited local support or name recognition.<sup>56</sup> After Ernesto Zedillo was elected president in 1994, the country took significant steps towards democratization. The PAN, a right-leaning party, won the presidency in 2000 and 2006 (Vicente Fox and Felipe Calderon). The PRD, a left-leaning party, consolidated its support around the DF, where it has held the government since the first election in 1997. The PRI has retained a stronghold on the State of Mexico, where current President Enrique Peña Nieto served as governor from 2005 to 2011.

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<sup>53</sup> Gilbert and Ward, *Housing, the state and the poor*, 39.

<sup>54</sup> Ward, *Mexico City*, 71.

<sup>55</sup> *Ibid.*, 73.

<sup>56</sup> *Ibid.*, 85.

While there is more democracy today in Mexico, the governance and tax structures are still very centralized. These systems have tremendous impact on the capacity and policy of local governments. The vast majority of state revenues come from the federal government, more than 90 percent, in fact. These transfers come in the form of *participaciones*, *aportaciones*, and *convenios*. Participaciones are federal tax disbursements for the states. States whose residents pay more in tax get roughly more in participaciones. Aportaciones are designed to redistribute federal revenue to poorer areas. Convenios give specific support for discretionary projects in the states. The federal government raises revenue through an income tax and a value-added tax on sales. States, meanwhile, mostly raise revenue from payroll taxes, which are at 2.5 percent in the State of Mexico.<sup>57</sup> Peterson, referenced earlier, outlined the way that fiscal incentives drive local government policy. In property tax systems, communities engage in exclusive zoning policies that hope to increase the value of property and maximize their public coffers.<sup>58</sup> We would expect the State of Mexico, thus, to seek to maximize payroll taxes by increasing population, rather than the value of property through growth-stemming zoning. However, Peterson also finds that local governments also largely seek to minimize their social services, as an effort to maintain economic competitiveness through low taxes.<sup>59</sup> Cities with high burdens of poor people, like Mexico City, should then be expected to try to avoid increasing their social obligation.

Sever's lessons on corruption and Peterson's on taxes and services identify different types of incentives for governments with regards to local housing development. I will argue that the DF shows the characteristics of such a "limited city" that seeks to limit its social and tax commitment through housing restriction. I will argue that the State of Mexico sees housing through a lens of graft and corruption. It thus "limits" its obligations not by restricting rent-

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<sup>57</sup> "Strengthening Subnational Public Finance. World Bank. Mexico Policy Note 10, July 28, 2012.

<sup>58</sup> Peterson, *Limited City*, 104.

<sup>59</sup> *Ibid.*, 38.

providing housing, but by limiting services. Because its primary source of income is the payroll tax, not the property tax seen in U.S. cases, it has strong incentive to grow the population with little consideration of that population's land value.

### **III. The Political Economy of Housing, 1940s to 1994**

Having now created a framework for understanding the economics of housing in Mexico and the politics and incentives for Mexican jurisdictions, we turn to a historical analysis of the Mexican housing market. In the two following sections, I will outline the transformation of the housing market over seven decades. In doing so, I will draw out several “rules of the game” that serve not only to explain what has happened, but to guide the current efforts to reform the housing market. In particular, I find that while Mexico has long stated an interest in providing homeownership opportunities for its working class, its policies towards planning and credit availability often have harmed or neglected working-class Mexicans. I find that Mexicans do highly value homeownership, which, combined with the focus of government programs on owning a home, has led to the rental market being decrepit and almost non-existent. Thirdly, I find that the policies and governance of the metropolitan area of Mexico City have long contributed to the development of sprawling, low-quality housing.<sup>60</sup> In this section in particular, I detail the initial transition away from the rental market and the first signs that the credit-constrained housing market was largely unaffordable for the working-class, thus leading to informal sprawl. I show the relative failure of pro-poor policies, and find instead that corrupt and anti-poor housing policies predominated.

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<sup>60</sup> Please find a map of the sprawl in this period as part of Appendix E.

As early as the mid-1800s, poor residents of Mexico City had initiated early forms of sprawl as they built *jacales*, or shacks, around the periphery of the capital.<sup>61</sup> The modern era of Mexico City—and of Mexico City’s housing problems, however, began in the 1940s. Following depression in the 1920s and 30s, the 1940s saw the beginning of three decades of remarkable sustained economic growth that would carry with it implications for the capital’s housing sector. Agricultural productivity began to increase dramatically, and though *ejido* farmers—peasants who had been given plots under Revolution-era land reform—initially kept pace with private production, the tide was turning in favor of large-scale production. As a result, in the 1950s the number of Mexicans with no land to their name grew from 2.3 million to 3.3 million. By 1970, the percentage of the labor force in agriculture dipped from 65 percent to 39 percent.<sup>62</sup> Combined with these land pressures that further impoverished the poorest Mexicans, industrialization in cities drove additional demand for urban land and housing.<sup>63</sup> The poor who moved to Mexico City began a settlement process whose form would continue to this day, as they pushed the city north and eastward.<sup>64</sup>

In contrast to today’s focus on homeownership, housing for the poor in these early days was largely provided through the rental market. In 1940, only 14 percent of Mexico City residents, or *chilangos*, owned their own home. And though the location of this rental housing would move more from the center city to the inner ring, by 1960, the homeownership rate had only increased to 23 percent.<sup>65</sup> While central rental housing was initially provided through *vecindades*, old apartment buildings that had been subdivided to accommodate the influx of poor workers, in

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<sup>61</sup> Loreto López, Rosalva. *Casas, viviendas, y hogares en la historia de México*. México, D.F.: Colegio de México, 2001, 348.

<sup>62</sup> Ward, Peter M. *Welfare Politics in Mexico: Papering over the Cracks*. London: Allen & Unwin, 1986, 16.

<sup>63</sup> *Ibid.*, 17.

<sup>64</sup> Ward, Peter M. *Mexico City: The production and reproduction of an urban environment*. London: Belhaven Press, 1990, 37.

<sup>65</sup> Gilbert, Alan. *In Search of a Home*. London: UCL Press, 1993, 26.

Mexico City in 1947, 100,000 individuals were living in shacks on undeveloped land, as the demand for housing far outstripped the affordable supply.<sup>66</sup> Responding to this demand, early developers engaged in the construction of massive illegal subdivisions in the northern edge of the city. Though they initially had few services and unpaved roads, they grew into massive settlements like Netzahualcóyotl, which had 600,000 people by 1970.<sup>67</sup>

Housing quality in the period showed the limits of working-class housing of the time. Houses were sturdier than shacks they were replacing, but, being built without credit, they were small, overcrowded, low-quality, and built incrementally over long periods of time. According to Frieden, “The Mexican Census of 1960 reports that in the entire Federal District, 39 per cent of the population lived in dwellings of just a single room, at an average of 4.9 people per room.”<sup>68</sup> Meanwhile, 56 percent of units, as of 1962, were deficient, either due to structural failings or missing services, particularly bathrooms.<sup>69</sup> Costs were high to the poor, too. Lots averaged 17,000 pesos, usually paid over 8 years, for workers with an average monthly income of 1,000 or so pesos. Buying materials on an as-needed basis in small quantities, the new homeowner faced high construction costs, too.<sup>70</sup>

Confronted with a large poor population—in 1960, more than two-thirds of *chilangos* lived on less than 2,000 pesos/month—, illegal land use, and poor quality housing, government strategies began to come into focus. And in this period, there were some pro-poor policies, but these demonstrated largely an ambivalent relationship with illegal developments, land policies

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<sup>66</sup> Frieden, Bernard J. “The Search for Housing Policy in Mexico City.” *The Town Planning Review* 36.2 (1965): 76.

<sup>67</sup> Gilbert, Alan and Peter M. Ward. *Housing, the State and the Poor*. New York: Cambridge University Press, 1985, 87.

<sup>68</sup> *Ibid.*, 82.

<sup>69</sup> *Ibid.*, 83.

<sup>70</sup> Frieden, “The Search,” 78-80.

curtailing options for the poor, limited construction by the public sector, and an emerging mismatch in policy between the DF and the State of Mexico.

The pro-poor policies took the form of rent control, subsidized loans, and incentives to landlords. They were deficient in their economic fundamentals, and largely failed to achieve their targets. In 1942, the federal government fixed rents currently below 300 pesos per month indefinitely. However, new developments with rents above 300 were immune from controls, and by 1961 only 22 percent of rental properties were rent-controlled. Even worse, the control is thought to have limited new rental production in the central city, as keeping rents artificially low meant that “affordable” developments would become increasingly fiscally unsustainable for their owners.<sup>71</sup> More successful were American-led efforts. Beginning in 1963, banks were to invest 40 percent of their holdings in housing. At the same time, The Alliance for Progress in Mexico, a Kennedy-Johnson program, established the Fondo de Operación y Descuento a la Vivienda (FOVI) to provide subsidized loans to poorer Mexican homeowners (with interest rates at 9 percent vs. the market rates of 11 or 12). By 1965, 10,000 units were to have been financed with this program.<sup>72</sup> In the 1950s, developers were offered 20-year property tax exemptions for constructing social housing in the DF. Taxes were too low at this time, however, for this program to generate much new construction.<sup>73</sup> Even still, the programs proposed in this period signaled an early bias towards homeownership.

The DF was of two minds when it came to the illegal subdivisions. Mexico City’s mayor in the 1950s and early 1960s, Ernesto Uruchurtu, who was appointed by the federal government, sought to restrict new illegal developments and to destroy those in the early stages of

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<sup>71</sup> Gilbert, *In Search of a Home*, 29.

<sup>72</sup> Friedan, “The Search,” 88.

<sup>73</sup> Gilbert, *In Search of a Home*, 30.



construction. Still, new construction did take place in the poorest regions of the city.<sup>74</sup> And once it did, the government of the DF would either force the developer to provide titles and pay for services for residents, or the DF itself would sell the land to the individual residents and gradually provide them with social services over a decade or more.<sup>75</sup>

While struggling with the illegal settlement questions, the Federal District invariably sought to limit the overall availability of cheap land and housing for the poor. As Frieden writes, “Many observers suggest that the prohibition of sub-divisions had an additional purpose: to discourage further migration into the Federal District, and thus curb the demand for additional public services to low-income areas.”<sup>76</sup> With that as their official policy, the DF resisted the clamor of policymakers and academics to convert the *ejido* land within the DF to public housing. The political calculus for that decision was clear. The *ejidos*, as members of the National Confederation of Farmworkers (CNC), formed a central part of the base of the ruling PRI.<sup>77</sup> And by rejecting *ejido* development in this time, the government created an unnaturally constrained land market that drove up prices. Land prices “rose by multiples of fifty or a hundred” between 1930 and 1958.<sup>78</sup> In the late 60s, urban renewal’s highway construction and business district expansion led to the elimination of the old *vecindades*, the subdivided apartment buildings that had provided cheap housing in the center.<sup>79</sup> In the servicing of settlements, urban renewal redevelopment, and land policy, the Mexican government intentionally and unintentionally drove further development of the periphery.

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<sup>74</sup> Gilbert and Ward, *Housing, the state, and the poor*, 88.

<sup>75</sup> Frieden, “The Search,” 79.

<sup>76</sup> *Ibid.*, 85.

<sup>77</sup> Ward, *Mexico City*, 67.

<sup>78</sup> Frieden, “The Search,” 85.

<sup>79</sup> Gilbert, *In Search of a Home*, 27-28.

The government's attempts to construct housing prior to 1970 were small in number and expensive in price. Between 1950 and 1960, the DF added 276,000 units of housing. The public sector only generated 19,000 of those units. Of that paltry number of units, there was not a lot left for the poor. Forty-six percent of the units were priced for incomes above 2,000 pesos/month, the top 31 percent of the population.<sup>80</sup> In other words, public sector development was "crowding out" potential private sector investment by providing assistance to the well-off, instead of a baseline of accommodations for the poor. These policies are the beginning of a long legacy of market distortions driven by government involvement in housing production.

Amidst this policy landscape, two approaches to housing emerge. The DF provided a fair amount of services to new illegal developments, though it sought to push much of the new development across the border into the State of Mexico.<sup>81</sup> The State of Mexico, meanwhile, was happy to have the development while offering few services. Frieden remarked, "Outside the Federal District, however, most of these areas still lack services, and the State of Mexico has developed no continuing programme to provide them."<sup>82</sup> Gilbert and Ward added a more detailed recounting of the State's disinterest in controlling growth. They write,

There is evidence that the government of the State of Mexico actively supported the real-estate transactions... Our interviews with leaders in one subdivision (Jardines) indicate that local municipal officers were in the pay of the company. Moreover, state authorities took no action against the common abuse whereby the same lot was sold several times over to different individuals... Nor did the authorities attempt to disguise their support for the companies, even when many settlers formed themselves into 'defence associations' to demand that promises of service installation be upheld.<sup>83</sup>

And so the State of Mexico began a corrupt, pro-business approach to accommodating the growth of the capital.

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<sup>80</sup> Frieden, "The Search," 87.

<sup>81</sup> Ibid., 85.

<sup>82</sup> Ibid., 82.

<sup>83</sup> Gilbert and Ward, *Housing the state and the poor*, 88.

The year 1970 would usher in an era of greater economic instability for Mexico that culminated in the great economic crisis of 1994. With the shifting economic realities, the policy of housing matured, so to speak, while the PRI sought to be more dynamic in its approach to the politics of housing and growth as its stranglehold on the government began to diminish. The 1970s saw the rise of institutions like INFONAVIT, the housing finance agency, and CORETT, which sought to regularize developments on *ejido* land, as well as the institutionalization of urban planning as an instrument of government power. The 1980s saw more earnest attempts at planning, with periods of fiscal difficulty and an earthquake that brought a second round of urban renewal. By the early 1990s, the cracking of the PRI infrastructure and a real financial collapse drove a significant weakening of the housing market and clear signs for reform. By the end of this period, in 1994, the State of Mexico was still significantly benefiting from outward expansion while offering little to regulate or service it. Still, housing conditions for the average *chilango* had improved significantly.

The 1970s were an era of new institutions in housing and planning. From its founding in 1972, INFONAVIT and, to a lesser extent its public-workers-only brother, FOVISSSTE, played a central role in the emerging housing market of this period. Founded as a tripartite organization to be governed by representatives of the government, labor unions, and business owners, INFONAVIT was designed to provide housing loans to formal sector workers who had contributed to the fund via a 5 percent payroll tax.<sup>84</sup> Until 1992, INFONAVIT would construct the housing it had provided loans for, too.<sup>85</sup> A lottery system determined who among the union

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<sup>84</sup> García, Beatriz and Claudia Puebla. “El Infonavit en el contexto de las políticas habitacionales.” *Vivienda y vida urbana en la Ciudad de México: La acción del Infonavit*. México, D.F.: Colegio de México, 1998, 32.

<sup>85</sup> Such loans were known as *línea I* loans as they represented one of five loans of credit the agency could provide. Available, but less common, were credits to acquire property for others, to construct housing on land they already owned, to improve existing properties, or to pay off existing liabilities (García and Puebla, 32).

members would receive housing.<sup>86</sup> Academics in this period criticized INFONAVIT for its emphasis on union members and its relative lack of production. By the mid-1980s only 1 percent of workers had received housing, and much of it had gone to more middle-class individuals.<sup>87</sup> And yet, there was no doubting the size and significance of INFONAVIT in the market. Between 1973 and 1976, INFONAVIT produced more units of housing than the public sector had in the four decades prior. And in total, from 1973 to 1980, INFONAVIT covered 11.3 percent of that period's housing demand in the capital area.<sup>88</sup> In its first twenty years, INFONAVIT was responsible for 913,676 housing units, 39.15% of the total housing production in the country.<sup>89</sup> The reason for INFONAVIT's preeminence is clear: it had simply amassed more resources for housing than had been seen before. As early as 1976, INFONAVIT controlled 85 percent of the financing for housing in Mexico.<sup>90</sup>

The next institution that shaped the low-income market was CORETT, one of several entities created to regularize the mass of illegal housing settlements.<sup>91</sup> In 1975, 40 percent of residents of the DF lived on *ejido* land or other illegally tenured property.<sup>92</sup> As proposed in Section II, illegal land use is a product of an economy where, in 1974, 70 percent of workers earned minimum wage.<sup>93</sup> As Gilbert and Ward wrote then, "Illegality continues to be a useful way in which the state permits the poor to occupy the residual land of the city."<sup>94</sup> And yet, in the 1970s illegal settlements had fallen out of favor, with Mexico City stepping up enforcement on

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<sup>86</sup> Monkkenen, Paavo. "The Housing Transition in Mexico: Local Impacts of National Policy." *Institute of Business and Economic Research Program on Housing and Urban Policy* D09-001 (2009): 15.

<sup>87</sup> Legorreta, Jorge. *La autoconstrucción de vivienda en México: El caso de las ciudades petroleras*. México, D.F.: Centro de Ecodesarrollo, 1984, 29.

<sup>88</sup> Ward, Peter M. *México megaciudad: Desarrollo y política*. Zinacantepec: El Colegio Mexiquense, 2004, 129.

<sup>89</sup> García and Puebla, "El Infonavit," 44.

<sup>90</sup> Bazant, Jan. *Rentabilidad de la vivienda de bajos ingresos*. Mexico, D.F.: Editorial Diana, 1979, 251.

<sup>91</sup> REPRODUCE THE CHART on 68

<sup>92</sup> Iracheta, Alfonso X. "Algunas reflexiones en relación al problema del suelo para vivienda en la Zona Metropolitana de la Ciudad de México." *Procesos habitacionales en la Ciudad de México*. México, D.F.: Secretaría de Desarrollo Urbano y Ecología, 1988, 69.

<sup>93</sup> Gilbert and Ward, *Housing*, 55.

<sup>94</sup> *Ibid.*, 75.

invasions of unimproved land.<sup>95</sup> Attention then turned to legalizing those who had lived on *ejido* land. CORETT was very successful in its process of expropriating land from *ejidatarios*, the peasant owners of *ejido* land, then turning tenure over to existing settlers for a fee, with 6824 hectares expropriated by 1982. Beyond legalizing the housing, little was made to improve the conditions of these settlements, as, despite the rhetoric, services had already been provided when land tenure was insecure.<sup>96</sup> Instead, there were two disadvantageous results, although disadvantageous for different groups. The poor settlers ended up facing higher costs, “through land and valorization taxes, and payments for the installation of services,” while governments watched as *ejido* owners subdivided their plots further in the months before CORETT came to legalize everything, guaranteeing themselves additional compensation from the government.<sup>97</sup>

From this concern about legality and also uneasiness over unrest following 1968, a state interest in urban planning was born. There were two primary uses of the planning process: to justify already-made public decisions and to continue to try to cap the availability of illegal land for the poor. Of the first, Ward wrote that planning’s influence was “significant if only as an ideological tool to enhance state control rather than as a regulatory framework for urban development.”<sup>98</sup> Mayor Hank Gonzalez in Mexico City saw it as a way to put into law building projects that had already been decided in backroom deals and to appease opponents who often used urban development as a point of resistance.<sup>99</sup> Moving into the 1980s, a series of plans, most notably the 1983 plans for both the DF and the State of the Mexico, sought to severely limit

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<sup>95</sup> Ibid., 95.

<sup>96</sup> Varley, Ann. “The Relationship between Tenure Legalization and Housing Improvements: Evidence from Mexico City.” *Development and Change* 18.3 (1987): 469-472.

<sup>97</sup> Gilbert and Ward, *Housing*, 95, 91.

<sup>98</sup> Ward, *Mexico City*, 115.

<sup>99</sup> Ward, *Mexico City*, 129-130.

additional illegal development.<sup>100</sup> Despite the state's incentives to engage in planning, the plans largely failed through the 1980s from preventing sprawl into certain parts of the State of Mexico and precarious areas in the DF.<sup>101</sup> From this story of planning we should draw important lessons. Today, many respond to contemporary housing concerns with a call for more planning. In this period, there is little evidence that planning promoted increased affordability—in fact, it was anti-poor—nor do we see evidence that governments held to their plans.

The 1980s brought economic hardship that would disrupt the housing market and lead to an initial dismantling of the systems put in place in the 1970s and earlier. Mexico faced a high level of inflation. Mortgages for social housing developed through the schemes of the early 1970s used fixed-rates. Thus, with high levels of inflation, banks investing in housing suffered significant losses. These losses were “covered by the national budget,” and the resulting deficit drove instability in the economy.<sup>102</sup> During the 1980s, more than 200,000 units of housing were created in the capital area, much more than in the 1970s.<sup>103</sup> And yet even that supply could not compete with the massive demand for housing, and many of the original peripheral settlements of the 1960s became overloaded with hundreds of thousands of new residents. Evidence suggests that these were migrants from both the increasingly-unaffordable center and from other regions of the country hit hard by the crisis.<sup>104</sup> This reality paints a vivid picture of the models proposed in Section II. From a macroeconomic perspective, a recession in Mexico drove low-income residents to select peripheral, informal housing that faced lower costs. From a micro perspective,

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<sup>100</sup> Dahau, Emilio. *Hábitat popular y política urbana*. Mexico, D.F.: Universidad Autónoma Metropolitana, 1998, 205.

<sup>101</sup> Gilbert, *In Search of a Home*, 36.

<sup>102</sup> Lea, Michael J. and Steven A. Bernstein. “Housing Finance in an Inflationary Economy: The Experience of Mexico.” *Journal of Housing Economics* 5.1 (1996): 88.

<sup>103</sup> *Ibid.*, 32.

<sup>104</sup> Dahau, *Habitat*, 182-184.

individuals at the bottom appeared willing to give up many housing services in exchange for affordable options.

By the late 1980s, INFONAVIT was on the verge of bankruptcy. According to Monkkonen, “A recession reduced revenues and raised construction costs, while an absurd lending policy—with interest rates far below market and almost no recourse on collections leading to extremely high default rates—meant that the institution had to reduce both construction and lending significantly.”<sup>105</sup> INFONAVIT’s misguided lending policy points to fundamental compromises in market finance-based social programs. In seeking to be socially-minded and sympathetic to poor homeowners, INFONAVIT became increasingly fiscally insolvent, and thus unable to serve that same population to which it was supposedly giving a break. But, to enforce payment would be to risk evicting thousands of potentially unruly former homeowners. More broadly, INFONAVIT’s original lending model, like rent control and regularization policy before it, represent how Mexico has struggled to develop strong social policies without adverse outcomes.

In the 1990s, the political and economic systems that had governed Mexico’s economy and the provision of social housing faced more disruption. The economic concerns first led to fracturing within the ruling PRI, which only narrowly won the 1988 Presidential election after a mysterious computer crash kept the results from being reported for a week.<sup>106</sup> Thereafter, the government embraced a broader campaign of privatization and decentralization—supported by the World Bank—that would shift how the big players in public housing acted.<sup>107</sup> In 1992, INFONAVIT ceased constructing homes and began to enforce payment on its housing, in the

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<sup>105</sup> Monkkonen, “The Housing Transition,” 16.

<sup>106</sup> Ward, *Mexico City*, 67.

<sup>107</sup> Monkkonen, “The Housing Transition,” 21.

hopes of earning a return for its pension fund.<sup>108</sup> And in 1989, FOVI, the old Alliance for Progress lender, began to auction funds directly to developers to help finance development.<sup>109</sup> With a political leadership in trouble due to economic stagnation, the social housing sector adopted a more market-based approach to housing production as it headed into 1994.

Throughout this entire second period (1970-1994), the State of Mexico appeared to have changed little in its housing policy. Though housing expansion directly to the north of the city began to slow, eastward expansion continued through informal developments. Gilbert struck an almost-woeful tone in describing the situation: “Housing in the State of Mexico has always been worse serviced, and poor services were the basic cause of the social protests in the late 1960s in Netzahualcóyotl and Ecatepec.”<sup>110</sup> Expansion had grown more precarious with particularly ill-suited land being the new place for development—too far from jobs and too poorly served by transit.<sup>111</sup> Iracheta, meanwhile, contended that the State of Mexico’s failings were due to fiscal imbalances created by the federal government’s appropriation decisions. While the State of Mexico had seen much of the growth of the region, was home to a majority of its population, and was significantly poorer than the DF, more resource dollars went to the DF. In 1989, 22.4 percent of *participaciones* went to the DF. Only 9.3 percent made it to the State of Mexico.<sup>112</sup> Much of what was given to the State of Mexico was still misspent, either because of the ineptitude of local bureaucrats or because ambitious agencies and projects, like Instituto Auris, a program to provide services to illegal settlements, or a suburban train, were planned for many years without ever seeing the light of day.<sup>113</sup> Because of limited federal attention to either the

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<sup>108</sup> Ibid., 16.

<sup>109</sup> Ibid., 20.

<sup>110</sup> Gilbert, *In Search of a Home*, 23-24.

<sup>111</sup> Duhau, *Habitat*, 217.

<sup>112</sup> Iracheta Cenecorta, Alfonso. “Estado de México: la otra cara de la megaciudad.” *México megaciudad: Desarrollo y política*. Zinacantepec: El Colegio Mexiquense, 2004, 543-544.

<sup>113</sup> Ibid., 510-512.



fiscal imbalances or local mismanagement, it could be said that, as of 1994, coherent urban policy in the Mexico City area had still not reached its largest urban jurisdiction.<sup>114</sup>

But, in total, had the situation improved for Mexican low-income residents in 50 years? We can consider building and market conditions of both owner-occupied and rental units. Many of the residents of social housing had seen their housing conditions improve. New homeowners all had access to bathrooms, hot water, and washing machines, which had only been available in varying degrees in their previous residences.<sup>115</sup> Still, conditions were spotty, and social housing was still an exclusive good. INFONAVIT-financed developments for poorer workers reported that between 62 and 77 percent of developments had quality problems.<sup>116</sup> While supply had been much stronger post-1970 than before, the development of 60,000 credit-funded units in 1993 was still a pittance of the overall population of the area.<sup>117</sup> And in the developments with the poorest residents, housing was acquired largely through unions.<sup>118</sup> Winning social housing was still about being a member of the right club. Between 1980 and 1994, the percentage of formal housing in the market only increased from 40 to 47 percent nationally.<sup>119</sup> Social mobility in housing remained small. Kunz, working with Rothenberg's framework, found that lower-income submarkets saw few sales and little upward transformation, as lower-income owners simply could not afford better housing.<sup>120</sup>

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<sup>114</sup> Ibid., 508.

<sup>115</sup> Villavicencio Blanco, Judith. *Condiciones de vida y vivienda de interés social en la Ciudad de México*. Mexico, D.F.: Miguel Angel Porrúa, 2000, 114.

<sup>116</sup> Schteingart, Martha and Javier Camas. "Selección y análisis de seis conjuntos habitacionales en la zona metropolitana de la Ciudad de México." *Vivienda y vida urbana en la Ciudad de México: La acción del Infonavit*. México, D.F.: Colegio de México, 1998, 148.

<sup>117</sup> García and Puebla, "El Infonavit," 47.

<sup>118</sup> Schteingart and Camas, "Selección," 146.

<sup>119</sup> Zanetta, Cecilia. *The Influence of the World Bank on National Housing and Urban Policies*. Burlington, VT: Ashgate, 2004, 147.

<sup>120</sup> Kunz Bolaños, Ignacio. *Mercado inmobiliario habitacional de la Ciudad de México*. México, D.F.: Plaza y Valdes, 2001, 114-115.

The rental market, neglected by this movement to owner-occupied housing, was in disarray. It had become a much smaller portion of the market by the 1990s, but still hovered around fifty percent of the market. Not surprisingly, the private owners of these residences had largely avoided maintenance.<sup>121</sup> The deferred maintenance problem was so bad that the rental market was shrinking because properties were becoming unlivable.<sup>122</sup> As a result, much of the rental housing was found not in formal, but deteriorating, central buildings, but fly-by-night “lost cities” with both low rents and few amenities.<sup>123</sup> So while there had been progress for those who owned, rental conditions meant that many city dwellers continued to experience very poor housing conditions at the turn of 1994.

#### **IV. The Political Economy of Housing, 1994 to 2013**

We begin a new era of discussion in 1994, when Mexico is in the middle of a serious economic crisis. World Bank and INFONAVIT reforms would drive recovery and housing production in the 1990s. From 2000 on, INFONAVIT further reformed itself into a massive financier of private-sector housing. This new housing added tremendously to the country’s housing stock, but meant that both the DF and the State of Mexico were met with a sudden need for even greater attention to planning, to which they were not uniformly prepared. Politically, Mexico moved quickly towards real democracy, with the election of PAN nationally and the PRD in Mexico City changing the political calculus of housing policy. But as there was a national push towards democracy and, in Mexico City, the emergence of strong social justice policies, the State of Mexico emerged as a corrupt reminder of the past, where the politics of housing became wrapped in a larger public policy of intimidation and abuse.

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<sup>121</sup> Coulomb, Rene. “Vivienda en renta y dinámica habitacional en la Ciudad de México.” *Procesos habitacionales en la Ciudad de México*. México, D.F.: Secretaría de Desarrollo Urbano y Ecología, 1988, 171.

<sup>122</sup> Villavicencio, *Condiciones*, 46.

<sup>123</sup> Ward, *Megaciudad*, 130.

In 1994, a rapid devaluation of the peso had left the economy in shambles. Banks, which had earlier been freed from mandatory low-income housing lending and had promptly moved to wealthier customers, stopped providing housing loans.<sup>124</sup> That decision meant that the housing market was crippled, threatening to prolong the crisis. The government instructed INFONAVIT to take a leading role in restarting the mortgage market. In 1997, the flexibility of lending policies increased significantly. Loans would now be used to purchase existing homes, co-financing with other sources was made legal, and individuals could now add to their INFONAVIT account beyond the 5 percent payroll tax. With these changes that generated more credit on the supply side, INFONAVIT sought to create a private home construction industry in Mexico. The Commitment to Housing created a series of preferred relationships with developers.<sup>125</sup> INFONAVIT would issue RFPs to developers. Those that met their criteria would be issued guarantees that INFONAVIT would provide financing to workers who bought the planned units. This guarantee was used as backing to finance the project. And in areas where developers had little experience, INFONAVIT bought the land and then contracted for construction. INFONAVIT had now completed a shift from financier and builder to financier of both the supply and demand side. And while INFONAVIT held the mortgage on 27 percent of properties constructed between 1973 and 2000, it was responsible for 73 percent of all mortgage value and 52 percent of all mortgages issued in 2000.<sup>126</sup> INFONAVIT had become the major player in the market. It was still something of a beast. Zanetta attacked INFONAVIT for the attributes we had seen pre-1994: massive amounts of government resources disproportionately went to middle-class homebuyers. (INFONAVIT and FOVISSSTE's subsidies were 2.5 times

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<sup>124</sup> Monkkenon, "The Housing Transition," 14.

<sup>125</sup> Ibid., 16-17.

<sup>126</sup> Lopez, Marco and Paulina Campos. "Scale without Growth: INFONAVIT's expansion in the Mexican Mortgage Market." Kennedy School of Government Case Program CR16-07-1863.0. 2007, 5.

the size of the government's main anti-poverty program).<sup>127</sup> These individuals ostensibly could have accessed a private loan once the market was stabilized. INFONAVIT policy was crowding out potential private investment and imposing implicit costs on low-income, ineligible workers. Its internal workings were considered highly inefficient. It was not uncommon for there to have been credits extended to developers and homes left unbuilt.<sup>128</sup> The World Bank, finding it impossible to push reform in INFONAVIT or FOVISSSTE, focused instead on reforming FOVI to provide more low and middle-income housing through internal restructuring.<sup>129</sup> INFONAVIT was now crucial to the market, but its inefficiencies meant the market would be bloated without serious reform.

But soon, political change emerged as a path to reform of INFONAVIT and a reshaping of the urban housing market around the capital. The 1997 election, which was the first local election in the DF, brought Cuauhtémoc Cárdenas to the mayoralty and the left-leaning PRD to power. Under Cárdenas and Lopez Obrador, the DF has pushed a series of social programs to augment the federal welfare programs. Specific programs range from financial support for education and food purchases to funds for housing improvement, under the umbrella of the Integrated Territorial Social Program. A broad approach to establish a welfare system based on “social rights” to the city and its resources was enacted.<sup>130</sup> Such a system is based in part on the work of David Harvey, who outlined the “right to the city” as both the right to access its existing resources and the power to reshape its social structures such that individual rights of dignity, welfare, and human rights predominated over the interests of private capital.<sup>131</sup>

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<sup>127</sup> Zanetta, *World Bank*, 148.

<sup>128</sup> Interview with Víctor Manuel Borrás Setien, March 11, 2014.

<sup>129</sup> *Ibid.*, 143-145.

<sup>130</sup> Mahon, Rianne and Laura Macdonald. “Anti-poverty politics in Toronto and Mexico City.” *Geoforum* 41.2 (2010): 215.

<sup>131</sup> Harvey, David. “The Right to the City.” *International Journal of Urban and Regional Research* 27.4 (2003): 939-941.

Despite the rhetoric, the “right to the city” approach in Mexico City again demonstrates the DF’s continued desire to at once deepen the offerings to residents while refusing to broaden the recipients of its largesse. For example, the DF supports aid to peasant farmers within the DF to keep agricultural land from being redeveloped, a strategy which also happens to limit affordable housing development.<sup>132</sup> Meanwhile, The Charter of Mexico City for Rights to the City calls for abandoned land and buildings to be repurposed as social housing, but the Mexico City government has not empowered itself to take such land.<sup>133</sup> There is evidence also that the steps towards increased welfare are offset by efforts to benefit private capital. As Polanco and Manuel describe, “The local Executive and Legislature...practice a combination of urban policies that favor private business in the city.”<sup>134</sup> In particular, land use policy has been placed under total control of the DF government, with limited public participation. The rhetoric of the Charter that real estate speculation would be reduced or that the benefits of urban development would be redistributed to the public have not been realized in policy changes.<sup>135</sup> In fact, the city has supported an urban development regime that promotes projects like the Western Super Highway (Súper Vía del Poniente), a privatized road to service the Santa Fe finance district. Both residents along the route and environmental activists opposed the road because of property expropriation, ecological impacts, and the fact that the toll road to a financial district would largely benefit wealthy *chilangos*.<sup>136</sup> Instead of building a more just city, Mexico City continues to operate as a limited city, limiting the growth of social welfare.

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<sup>132</sup> Mahon and Macdonald, “Anti-poverty politics,” 215.

<sup>133</sup> Polanco, Delgadillo and Víctor Manuel. “El derecho a la ciudad en la Ciudad de México. ¿Una retórica progresista para una gestión urbana neoliberal?” *Andamios. Revista de Investigación Social* 9.18 (2012): 132.

<sup>134</sup> *Ibid.*, 133.

<sup>135</sup> *Ibid.*, 132-133.

<sup>136</sup> *Ibid.*, 136.

Other political reform has been more transformative. In 2000, with the election of a PAN candidate, Vicente Fox, INFONAVIT received new leadership, in the form of banker Víctor Manuel Borrás Setien, and a new reform and production objective. Within the *sexenio* of President Fox, Borrás resolved that INFONAVIT would produce 2 million units nationwide—as much as it had produced in the 28 years prior. It achieved not only that, but added another 3 million in the following six years of President Calderon’s administration. INFONAVIT’s lending policies had become one of the main social and economic development programs of the PAN administrations.<sup>137</sup> Much of the improvement in performance was due to long-overdue restructuring of the organization. Computer use, for example, was minimal in 2000, but widespread by 2006.<sup>138</sup>

While the increase in scale of INFONAVIT’s lending activities has invariably shaped the market just by the quantity of housing produced, the shifts in how credits were spent had begun to correct many of the errors of the past. While the low-income market had long seen stickiness and INFONAVIT had contributed to this by only allocating credits in a short, four-month window, the new administration instituted a rolling credit application and allocation process. INFONAVIT also took steps to ensure that more of its credits went to low-income individuals. In 2001, 74 percent of INFONAVIT members earned less than four times the minimum wage. They only received 50 percent of credits. And the 45 percent earning less than two times the minimum wage? Only 21 percent. To undo the market distortion its lending policies had caused, INFONAVIT began to finance, and offer developers incentives to construct, homes for less than 150,000 pesos, or \$15,000. By 2005, 32 percent of loans were in this affordable range.<sup>139</sup> INFONAVIT buttressed its new approach to affordability by offering cofinancing schemes with

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<sup>137</sup> Interview with Víctor Manuel Borrás Setien, March 11, 2014.

<sup>138</sup> Lopez and Campos, “Scale without Growth,” 12.

<sup>139</sup> Ibid.

private banks to handle individuals with higher incomes, helping to reduce further previous crowding out effects.<sup>140</sup> Clearly affordability had its limits, though. INFONAVIT still did not loan to the informal sector, 30 percent of the Mexican economy, nor did it loan to the 60 percent of Mexican households who were non- members.<sup>141</sup>

The changes have not been without their costs. The new policies drove an unprecedented new wave of urban sprawl. Eibenschutz and Goya calculated that the average distance between peripheral housing developments and the city center in large Mexican cities had jumped from 20 km to 43 km between 2001 and 2006.<sup>142</sup> Planning was relatively non-existent. During his presidency, President Calderón's administration failed to produce a six-year urban development plan, the first such failure since the law mandating such a plan was passed in 1976. INFONAVIT Director Víctor Borrás identified the lack of local-level planning, as well. In 2010, the State of Mexico identified Zumpango as a Bicentennial City to be developed with a mix of housing, employment, and rapid transit. Only a series of unconnected housing developments have been built.<sup>143</sup> Housing was the singular goal. As Salvador Medina Ramirez, of transit policy firm ITDP put it in his op-ed "Catastrophic Cities," "To achieve [the government's housing production goals] companies were permitted to resort to cheap land and construct and market [homes] with public financing and the support of the national financial system, without a single location criterion."<sup>144</sup> In other words, INFONAVIT unleashed the market for very affordable housing. The market responded as we would expect, generating new low-income housing on the land cheap enough to maximize producer revenues.

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<sup>140</sup> Interview with Víctor Manuel Borrás Setien, March 11, 2014.

<sup>141</sup> Lopez and Campos, "Scale without Growth," 19.

<sup>142</sup> Eibenschutz Hartman, Roberto and Carlos Goya Escobedo. *Estudio de la integración urbana y social en la expansión reciente de las ciudades en México, 1996-2006*. Mexico, D.F.: Miguel Angel Porrua, 2009, 17. Please see Appendix C for a visualization of travel distances prepared by ITDP.

<sup>143</sup> Interview with Victor Borrás Setien.

<sup>144</sup> Medina Ramirez, Salvador. "Catastrophic Cities." *Nexos* October 1, 2013. My translation.

In the past few years, the system suffered a significant collapse driven by abandonment and over-leveraged homebuilders. With daily commutes in Mexico City now averaging 2.5 hours, the inability to access employment has driven the abandonment of peripheral homes.<sup>145</sup> Nationwide, 5 million social housing units are now abandoned. There is also evidence of a significant housing bubble in the country generated by the massive amount of available financing, with a 48% growth in home prices between 2005 and 2012 and a tripling of default rates between 2010 and 2012.<sup>146</sup> The already tenuous situation of the market plummeted when the federal government introduced its new National Housing Policy, described in Section VI.<sup>147</sup> This plan sought to densify housing and limit continued sprawling developments. The economics of housing had become such that attempts to institute rational planning sent the system into a spiral.

All the while, the jurisdiction that was the beneficiary of this sprawl and housing finance growth has shown little in the way of reform. In the 1990s and 2000s, the State of Mexico continued to struggle with comparative weak fiscal capacity to provide service to the growing housing stock. It also systematized corruption as part of its housing and general public policy under the governorship of Enrique Peña Nieto. Iracheta argues that through the 90s and 2000s, the State of Mexico continued to suffer from being the D.F.'s less-important brother to the north, despite the massive local growth. The State of Mexico is dryly criticized in the DF with the phrase: "Outside of the DF, everything is Cuautitlán."<sup>148</sup> Essentially, it's a wasteland out there. And the state has not received its fair share of resources. It receives significantly less in education funding from the federal government, on a pure pupil basis, than the national average.

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<sup>145</sup> Eulich, "In Mexico, low-income homeowners watch their dreams crumble."

<sup>146</sup> Medina Ramirez, Salvador and Jimena Veloz Rosas. *Transit Oriented Development: Regenerate Mexican Cities to Improve Mobility*. Mexico, D.F.: Institute for Transportation and Development Policy Mexico, 2014.

<sup>147</sup> "Real Estate Outlook – First Half 2014." BBVA Bancomer December 20, 2013.

<sup>148</sup> Iracheta, "Estado de Mexico," 600.



In 1995, it received 1,500 pesos/student, while the national average was 2,000 and Mexico City's was 4,000. Meanwhile, the State of Mexico had significantly fewer tax pesos per capita than the DF (652 vs. 4,126).<sup>149</sup> As seen earlier, the State of Mexico continued to be financially strapped for cash. That would likely mean limited resources for planning, housing improvement, or services that could at least improve the quality of life of far-flung communities.

But there is a more insidious explanation of state behavior: the corruption of the land use process. Take the examples of the two developments of Las Américas and Lomos de San Francisco Tepojaco. In 2002, the state government identified the future site of Las Américas as one of the most contaminated sites in the entire state, with heavy metals found in the topsoil and ground water. In 2003, the government gave clearance to build 13,000 homes.<sup>150</sup> In Lomos, not only have social services promised not been delivered, but homes have begun to fall apart after ten years. The inadequacy of the construction strongly suggests that the housing quality oversight that state officials are supposed to engage in has simply not taken place. Issues of environmental justice have been raised there, too, as the site is built next to an active landfill.<sup>151</sup> Both Centro Prodh and Víctor Borrás, in interviews, identified corrupt practices of local officials as the source of many of the planning irregularities, harkening back to the days when they were paid directly by developers. The governor at the time, now-president Enrique Peña Nieto, appears to have been a part of the action. The newspaper *La Jornada* reported that Peña Nieto's administration engaged in a series of fraudulently land schemes during his time in office.<sup>152</sup> The corruption of land use can be tied to broader issues of corruption in the state. The human rights group Centro

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<sup>149</sup> Ibid., 560. Iracheta argues that the origin of this imbalance is the centralized government structure under the rule of the PRI. The DF received a "disproportionate percentage" of resources in order to maintain social peace in the capital, with the rest of the government "picking up the check." Pg. 551.

<sup>150</sup> Centro Prodh. "Las Americas."

<sup>151</sup> Centro Prodh, *La violación*, 77.

<sup>152</sup> Méndez, Alfonso. "La PGR sabía del fraude en la venta de terrenos en el Edomex." *La Jornada* November 5, 2013.

Prodh has documented that the state, which has some of the highest rates of crime and murder of women in the country, has long-standing traditions of corrupt judicial practices and police abuse.<sup>153</sup> The State of Mexico is a poor, corrupt state. In this period, its inaction contributed to the most out-of-control elements of growth.

## **V. Theory and History: Where We Stand**

What does this history lesson tell us about the micro and macroeconomic processes that I outlined in Section II? Generally speaking, the problems of the housing market in the past few years have their roots in historical trends that have gone on for some time. The long legacy of large-scale informality tells us that, for many years, the maximum credit-less bids of most workers were below the lowest level of market supply. Once the market was largely informal, planning, when it was enforced, emerged as a tool to limit the poor's access to the city or to impose costs on them. More often than not, it was not enforced, allowing for more uncoordinated sprawl. The introduction of large-scale housing credit targeted towards the poor, under the recent INFONAVIT regime, unleashed the supply at the bottom of the market, lowering the floor of the market price. While it was clear that credit greatly enhanced the demand side of the market, for the supply to increase, builders would need to be able to achieve greater revenue than cost. For that to happen, they had to tremendously reduce cost compared to what they could spend on more middle-class homes. That meant lowering quality and building on lower cost land, which inevitably would have fewer desirable features. So, the issue in the last decade or so has not been that the market has not been functioning for a large swath of the population—that was the problem of the pre-1994 housing market. The problem is that the market is working as we would expect. In seeking to accommodate people in homes that are more affordable than some cars, Mexico has built a functioning market with undesirable externalities. Even further, we have

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<sup>153</sup> Centro Prodh, *La violación*.

reached a moment where new attempts at planning, like the National Housing Policy, cause the system to collapse.

Over seven decades of history tell us also that broader governance issues place the limitations on affordable housing that the political model in Section II predicts. A government entity with large resources and commitments on those resources, the DF, has restricted access to the city and pushed development to the periphery. And there in the State of Mexico, the local government has proven to pursue the incentives of a poorer, corrupt government entity. It accepts development, often through corrupt deals, and limits its cost burden by offering few services. Again, we see the ways that traditional conceptions of planning in Mexico have failed for many decades. Fixing planning in the State of Mexico will be about more than generating a new plan.

Given that Mexico City fits a working generalized economic and political model, this history tells us a lot about the steps forward for reform. We have no evidence that planning in Mexico City has primarily served to benefit low-income residents. And furthermore, the actual legal framework of Mexico is well-developed and implementation is the problem.<sup>154</sup> History suggests instead that the capital's housing market is more effectively, and even equitably, transformed by adjusting the flows of capital in the marketplace. Just as INFONAVIT lowered the floor, reform must change what that floor looks like.

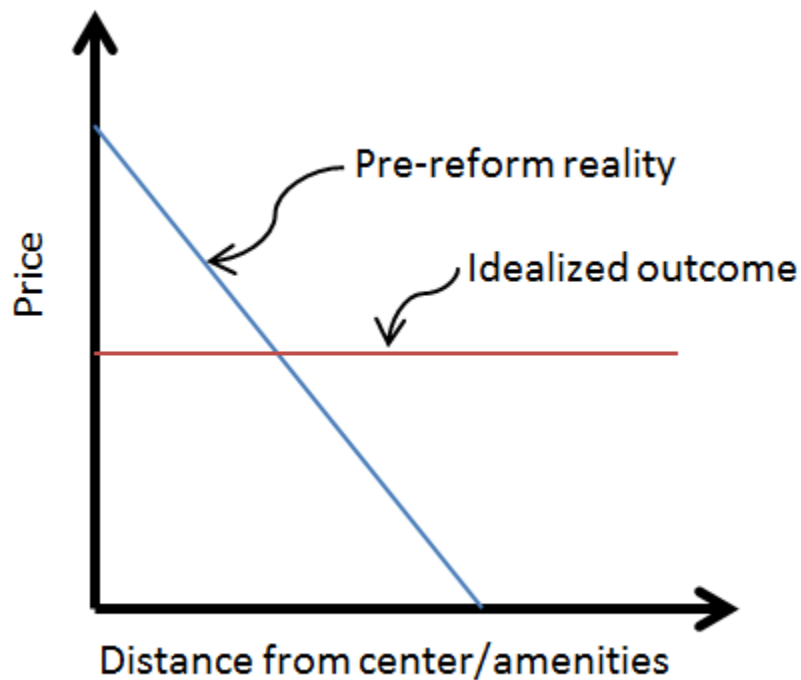
#### *Shifting from Economic Reality to Economic Possibility*

The economic realities of the present must be bent to accommodate better location, better quality, and greater equity in the Mexican housing environment. We can describe analytically the desired changes in the location and quality submarkets, using the initial economic framework and the evidence from the past. The charts in this section are meant to be explanatory, and while supported by the evidence of earlier sections, not particularly quantitative.

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<sup>154</sup> Interview with Araceli Olivos Portugal, March 12, 2014.

**Figure 4: Location Market for Working-Class Housing**



The pre-reform reality in the location market described above has followed the traditional rules of land markets. As you move away from the center of DF or amenities in the region, housing prices fall and the poor find themselves huddled together on the fringes. The price in the center (where distance equals 0) is high because of its centrality, the high degree of services offered in the DF, and restrictions in accessing those services imposed by the DF. What is most stunning is the degree to which a metropolitan area of 20 million people has retained very small, short buildings. Most houses in the metropolitan area have 3 to 5 rooms.<sup>155</sup> Even in the immediate State of Mexico conurbations, like Nezahualcóyotl, 75 percent of housing is single family.<sup>156</sup> Thus, there is little housing supply in the center, increasing central prices and forcing people to

<sup>155</sup> Santos Cortés, Claudia. "Affordable Housing: A Case for Mexico City." 2010, 27.

<sup>156</sup> Bredenoord, Jan and Otto Verkoren. "Between self-help – and institutional housing: A bird's eye view of Mexico's housing production for low and (lower) middle-income groups." *Habitat International* 34.3 (2010): 361.

look further afield towards housing.<sup>157</sup> At the same time, the long-distance side of the market has been made artificially low through the actions of INFONAVIT and bad planning.

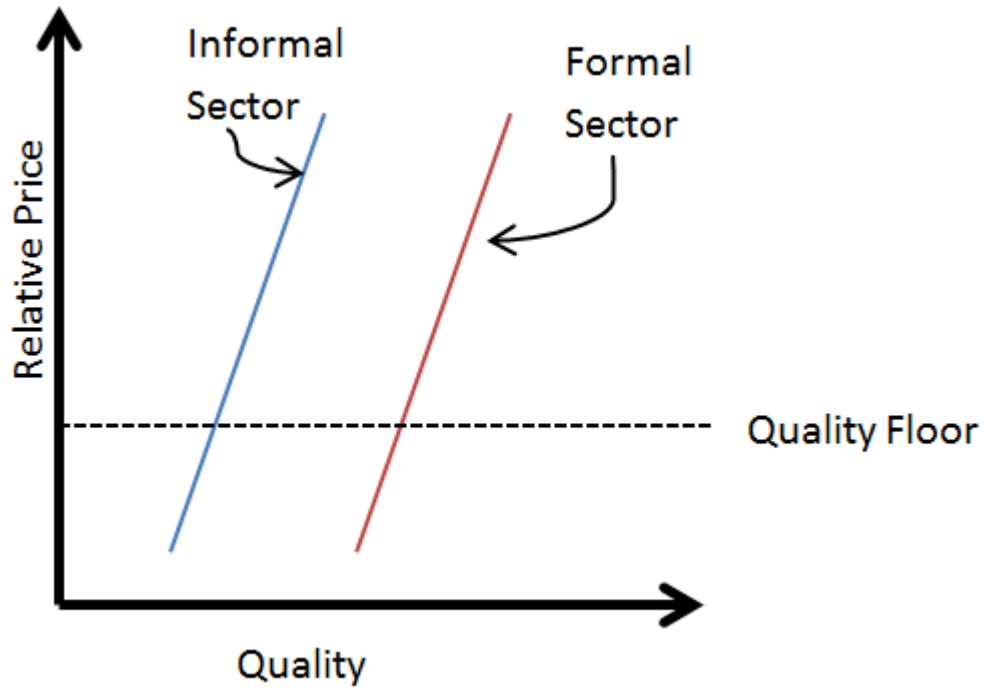
In reform, we want to bend the cost curve towards the horizontal line in Figure 4. If we consider these prices as relative to the buying power of working-class Mexicans, then we want to lower prices at the center and raise them at the periphery such that the worker faces similar prices in his location options. That can be done through a variety of financial and policy mechanisms that subsidize central housing stock and provide greater value and services to housing stock at the periphery.<sup>158</sup> Such services could include not only better schools and more local commercial offerings, but also the movement of more jobs co-located with the periphery. While such reform invariably may pose some added cost the poorest workers, there are a number of benefits. First, the worker has a greater opportunity to access close-in housing, reducing transportation costs and congestion. Second, the outlying areas are improved, creating better quality of life for those living there and as the value of their homes improve, giving them greater equity and *patrimonio*.

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<sup>157</sup> I should note that there are poorer neighborhoods within Mexico City, too, but they don't see the same growth.

<sup>158</sup> Trying to make the center, which is at present highly-valued, cheaper than the periphery would require massive amount of subsidy and could lead to a ghettoization of the inner-city.

**Figure 5: Quality Market for Working-Class Housing**



In this case, I have provided information about the informal sector. Because of the limited access to credit for individuals in the informal sector, they can only access the same quality of housing as formal sector workers by making more than the formal employees would. They are heavily budget constrained and can usually only improve the house when they save up sufficient money to invest in the next home improvement. For the formal sector, not surprisingly the price of a home increases as its quality increases. Working-class workers in the formal sector can purchase more and better house at cheaper prices than their informal sector equivalents, but quality is quite low, for reasons discussed earlier in Section V.

The correction, unlike in the case of location, is not to try to bend the price curve in a particular direction. As a commodity, housing's price is going to increase with quality. Such an outcome is inevitable. Nevertheless, policy should work to adjust the floor of the quality market in positive ways. Within the formal sector, reform should establish a minimum *de facto* and *de*

*jure* quality that has strong enforcement mechanisms behind it. For informal housing, the objective should be to create stronger mechanisms for housing improvement to achieve a baseline quality of informal and to allow for greater access of such individuals to formal social housing.

## **VI. A New Policy**

On February 11, 2013, the government of President Enrique Peña Nieto announced the new National Housing Policy.<sup>159</sup> Speaking with Jorge Carlos Ramirez Marín, the Director of the Secretariat of Urban, Territorial and Agrarian Development (SEDATU), Nieto declared, “We can make the right to decent, decorous housing, as stipulated in the Constitution, a reality for each and every Mexican.”<sup>160</sup> Driving the push towards this new reality were a realignment of government agencies and four key “strategies” to change the direction of housing in the nation of Mexico. Going forward, SEDATU would serve as the principal housing policy agency of the federal government, with National Housing Commission (CONAVI), the Commission for the Regularization of Land Tenure (CORETT), and the National Fund for Popular Housing (FONHAPO) reporting directly to the Secretariat. INFONAVIT, meanwhile, would remain independent but enter into agreements with the more robust housing policy apparatus. This realignment serves to further the first of the four new national housing strategies announced this past February: inter-agency coordination.

The second new strategy has been the subject of the most attention since its announcement. By focusing government housing resources on more dense, central development, the Peña Nieto government hopes to bring Mexico to “a model of sustainable, intelligent urban development.”<sup>161</sup>

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<sup>159</sup> “Moving Mexico Towards the Future Will Give Families the Opportunity to Own their Own Homes.” February 13, 2013.

<sup>160</sup> Ibid.

<sup>161</sup> Ibid.

As the *Economist* put it in June of last year, “[The Peña Nieto government] wants to focus instead on ‘vertical’ (high-rise) dwellings closer to city centres, which may not be every aspiring middle-class Mexican’s shot of tequila, but at least mean a shorter commute and better access to transport, water and electricity.”<sup>162</sup> This strategy, thus, hopes to ensure that future development around the capital (and other cities in Mexico) avoids the abandonment of the recent past and brings with it fewer harmful environmental consequences.

The third strategy of the new policy is a reprise of the long-term policy of the Mexican government to battle the long-standing shortage of formal housing for Mexicans. The government estimated the gap at the announcement of the new policy as 9 million units. The Inter-American Development Bank, meanwhile, estimates that Mexico must produce 8.5 million units nationwide in just 12 years to keep up with the demand.<sup>163</sup> Closely linked to this new production of housing will be an expanded focus on loans to assist in the improvement of housing. Since 2011, workers have been able to use INFONAVIT credits for home improvement, with 152,000 credits used for that purpose in 2012.<sup>164</sup> President Nieto announced his government’s attention to expand that number to over 400,000 housing improvement loans in rural and suburban housing alone.

From its inception, then, the new housing policy has had as its central goals to continue to build new housing, to improve the overall quality of housing in Mexico, and to try to create a housing policy that ensures that new developments contribute less to sprawl and have more local services. With SEDATU given the administrative oversight to implement this new policy, it has identified its own, more defined set of institutional goals for a new age of Mexican housing. In a presentation in October 2013, the agency laid out the specific focuses and approaches that would

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<sup>162</sup> “Dropping a brick.” *The Economist* June 1, 2013.

<sup>163</sup> Eulich, “low-income homeowners.”

<sup>164</sup> Guthrie, Amy. “Mexican Mortgage Institute Infonavit Issued 578,396 Loans in 2012.”



bring more sustainable housing. The goals are outlined in six “ejes,” or axes. The first is to create denser cities whose outward expansion is limited by urban growth boundaries. The second is to create new financing strategies and apply low-cost technological solutions to allow lower-income families to achieve the previously stated goal of improving their housing conditions. The third axis is about the integration of housing and transportation. Not only should housing be built in transportation in mind, but SEDATU calls for planning approaches that will promote non-motorized transportation (like bicycles) and greater investment in transportation generally. Fourth, SEDATU hopes to promote more improvement of underutilized land more centrally and to limit speculation in the outer ring. Fifth, SEDATU intends to institute a national plan for regional development to direct the growth of the country’s urban regions. The sixth, and final, axis of the plan is to build greater resilience for cities by preventing new development in areas prone to ecological disaster.<sup>165</sup>

The reins having been given to the planners, they have expanded and deepened the goals of housing reform. With this robust housing and planning agenda, Mexico hopes to achieve many things at once. Within the confines of this paper, it would prove difficult to evaluate all the strategies and axes of the national housing reform. In my opinion, the greatest concerns of the recent housing crisis have been the creation of affordable housing that is stuck in remote, unfinished communities and the poor quality of the homes. These concerns have also proven to be some of the most intractable over 70 years of modern Mexico City development. Thus, I will evaluate whether these new policies will be successful, given the political economy of housing in Mexico City, in providing homebuyers with more services, transit, and accessibility, while retaining affordability and whether these reforms provide adequate incentives to improve

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<sup>165</sup> SEDATU. “Política Nacional Urbana y de Vivienda.” October 2013.

housing quality. Where applicable, I will offer suggestions for changes that would lead to better outcomes in these two crucial areas.

This, of course, is not the first attempt of a Mexican government to instill a planning regime in its housing market, nor is it the only contemporary proposal for reform. In 1982, the State of Mexico did institute growth boundaries on all municipalities. That policy led to widespread evictions where it was enforced or, in the vast regions of the state where enforcement was minimal, ended up having little effect on the continued sprawl of the state.<sup>166</sup> As noted before, planning has often served to harm, not help, the sort of working-class Mexican that is supposedly the target of housing improvement. In the 1980s, the DF engaged in a series of similar unsuccessful planning efforts, most notably to reduce growth in the south of the district and to align the land use of border areas with the State of Mexico, highlighting again the issues of governance in the capital region.<sup>167</sup> In this period, Peter M. Ward argues that efforts to impose strong planning standards were hurt by the federal government's decision to divide some level of planning, with no fewer than eleven agencies responsible for how cities grew.<sup>168</sup> The central role of SEDATU could help to minimize future bureaucratic overlap.

It is useful to also consider other contemporary plans for the Mexican market that could feasibly be incorporated to the administration's plan. As the PAN government was leaving office, INFONAVIT was completing a six-year visioning process. In an interview with the author, Victor Borrás labeled SEDATU a “dinosaur”—SEDATU is the reincarnation of the Agrarian Reform Secretariat (SRA)—that would add more bureaucracy to the housing market. Instead, his team proposed four initiatives for INFONAVIT going forward:<sup>169</sup>

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<sup>166</sup> Gilbert, *In Search of a Home*, 36.

<sup>167</sup> Ward, *Mexico City*, 127.

<sup>168</sup> Ward, *Welfare Politics*, 48.

<sup>169</sup> Valdés, Ana Lydia. “Victor Manuel Borrás deja un Infonavit rentable.” *Metros Cúbicos* November 29, 2012.

1. A continued focus on the quality of life for residents of new units, as opposed to just doggedly pursuing an increased number of units. Since 2006, INFONAVIT has sought to impose more standards in terms of amenities for subdivisions.<sup>170</sup>
2. Invest in rental programs, rent-to-own programs, and reverse mortgages.
3. Develop programs to reach populations who are not INFONAVIT members.
4. Achieve an internationalization of INFONAVIT's finances by luring foreign investment into Mexican housing.

These reforms undoubtedly continue many of the prime characteristics of the INFONAVIT of the two PAN *sexenios*, in its efforts to continue the financialization of the housing sector.

However, they also seek to deal with issues of quality, broaden the housing finance base, and invest in rental housing that might be better suited to a dense context. And, most importantly, these reforms, unlike the much touted SEDATU-driven initiatives, push hard on the great supply-inducing INFONAVIT to re-shape the market.

Harvard's Joint Center for Housing Studies, which recently signed an agreement to advise INFONAVIT,<sup>171</sup> has conducted a series of studies on the Mexican housing market.

Writing in late 2012, the researchers outlined their own series of recommended reforms:

1. Expand credit to low-income workers who are not members of INFONAVIT or another mortgage fund.<sup>172</sup>
2. Improve urban planning and coordinated infrastructure investments.<sup>173</sup>
3. Greatly increase supply of land for self-help housing.<sup>174</sup>
4. Increase the available information on housing quality and on successful lending policies.<sup>175</sup>

These recommendations appear to combine both the internal INFONAVIT lending reforms and SEDATU efforts at planning-led reform. So, we are offered three connected but distinct plans for reform. After taking a short detour to document the progress of reform in the past 14 months, we

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<sup>170</sup> Interview with Víctor Borrás Setién, March 11, 2014.

<sup>171</sup> "Universidad de Harvard asesorará al Infonavit." *Forbes* April 13, 2013.

<sup>172</sup> 31

<sup>173</sup> Ibid., 32.

<sup>174</sup> Ibid., 33.

<sup>175</sup> Ibid., 34.

can consider which plans show promise in affecting the underlying political and economic realities and what other proposals need to be added to the mix.

## **VII. Implementing the New Policy, 2013-Present**

We are at an important juncture for evaluating the new National Housing Policy, as it turned one year old just two months ago. And, while the Mexican government has established rules and procedures for implementing the four strategies, they are new enough to perhaps be easily amended. From what we have seen so far, they should, indeed, be tweaked. The policies to improve the location of social housing have promise and should be refined further. The policies to combat poor quality may allow homeowners to build better homes, but fail to attack the underlying incentive structures that lead to bad housing. While significant state funding has gone to housing improvements in the last year, there is little evidence that the fundamental economics and politics that create poor quality housing have been corrected. Through the DUIS (Desarrollo Urbano Integral Sostenible) program, however, the Mexican government has tried to heavily favor developments with more internal services and greater attention to sustainability. While these developments have largely occurred outside of the studied area, importing them to Mexico City would depend upon reducing the sprawl that DUIS projects have contributed to elsewhere. In terms of location, funding subsidies directed by CONAVI do seek to improve project siting and take the correct path in using fiscal incentives to achieve reform. However, a closer examination of the projects submitted to CONAVI shows that new housing, particularly housing at the lowest cost level, remains at the periphery.

All of this analysis should be tempered by a quick examination of how the market has recovered, or not, since the introduction of the new housing policy. The year 2013 was certainly a tremendously painful one for the housing market. And this pain continued well past the

February announcement. In March, Urbi defaulted on a \$3 million loan payment to Barclays in March. By December, the big three developers (Urbi, Geo, and Homex) had lost \$1.69 billion in value and the homebuilders index on the Mexican stock exchange dropped 78 percent.<sup>176</sup> And although market analysts have found that capital has remained more constrained than before, both these analysts and leadership at SEDATU have argued that the enhanced coordination in the market should promote new investment and more stability going forward.<sup>177</sup> In fact, according to recently released data, the number of credits produced by INFONAVIT grew by 7.3% in the first quarter of 2014, driven by the continued high demand for housing in Mexico.<sup>178</sup> The market is beginning a recovery. Will this period of reform drive more sustainable continued growth?

Over the last year, federal funds have gone to promote the improvement of existing housing stock, a needed continuation of a trend away from solely supporting new housing. In April 2013, INFONAVIT increased the maximum housing renovation credit from 47,000 pesos to 100,000 pesos. Given that the cheapest house for which INFONAVIT provides loans is around 150,000 pesos, such an increase gives a Mexican homeowner a compelling case to stay and improve, rather than move and buy new.<sup>179</sup> Similarly, in March 2014, SEDATU announced 14 billion pesos in funding for new housing “actions”—investments that would both allow for improved quality of existing homes and for greater subsidy and lower interest rates for poor residents who have typically been excluded from many INFONAVIT loans.<sup>180</sup> While it is too early to predict the impact of these fiscal policies, their underlying economics point to quality improvements. As elucidated in Sections II and V, many of the quality issues stem

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<sup>176</sup> Levin, Jonathan and Ben Bain. “Mexico Housing Hits U.S. Investors as Plan Collapses.” *Bloomberg* December 6, 2013.

<sup>177</sup> Alcántara, Claudia. “Un año tras la nueva política de vivienda.” *El Financiero* February 2, 2014.

<sup>178</sup> “Créditos a vivienda crecen 7.3%.” *El Financiero* April 2, 2014.

<sup>179</sup> “Más crédito Infonavit para remodelar.” *Metros Cubicos* April 18, 2013.

<sup>180</sup> “Se realizarán 140,000 acciones de vivienda en 2014: Sedatu.” *Obras Web* March 20, 2014.

fundamentally from the fact that most Mexicans are quite poor and housing demand is quite high. Homebuilders can (only) make money and serve the masses by keeping quality quite low. But with more subsidy and credit provided to poorer Mexicans, the Mexican government is giving the poor more buying power and, hopefully, the ability to choose for quality.

Despite these improvements, many of the underlying incentive issues confronting the State of Mexico have not been resolved. While fiscal instruments are likely to be most successful in changing the market direction, a major cause of the poor physical quality of developments like Lomos or Las Américas was regulatory failure. While the second strategy (improving location, to be described more in a moment) tries to use federal power to coerce improved local land regulation, the government has been silent on ensuring that new developments are made of materials that will not fall apart. It has not addressed the issue of corruption in housing regulation. Similarly, a perverse incentive for states in the area of taxation has not been resolved. States rely heavily on payroll taxes, not property taxes. Imposing a stronger state reliance on property taxes might cajole the State of Mexico to pursue quality, not just people. But this past year, the state's tax reform policy established a number of deductions on property tax rates (bringing them down to the single digits in many cases). It also created a vacant land tax of 15 percent. Vacant land taxes are often touted as good ways to keep people from holding onto vacant, but developable property. Given the history in the State of Mexico, however, it is worrisome that they are further incentivizing new land (and maybe bad land) development.<sup>181</sup>

While it began before the 2013 reform, the DUIS program ought to be considered as another contemporary attempt to drive higher quality housing, in this case through sustainable principles. Beginning in 2008, CONVAI has required that housing developments meet a basic set of sustainable measures—water and waste management, energy use, insulation, etc.—in order to

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<sup>181</sup> Chevez, Ruiz, Zamarripa. "Flash Informativo: Reformas fiscales Estado de México 2014." 2013-2014.

qualify for a 20% homebuyer subsidy.<sup>182</sup> DUIS takes the commitment one step forward, providing favorable financing to homebuilders that meet a series of characteristics in their development. These include alternative energy use and passive technologies to improve home efficiency, more green spaces in the developments, more access to transit, bike paths, and pedestrian walkways, and more planned commercial space within the housing developments.<sup>183</sup> These developments have the promise of creating more access, higher quality environments, and more local job opportunities, all of which should reduce local abandonment, in addition to tackling the fundamental issue of housing quality.

However, the DUIS concept has not yet been extended to the DF or State of Mexico. And while the commitment to green might bring better housing, there are questions of whether green will last and whether DUIS projects are just another example of “sprawling green” first seen in the rise of “new towns.” Homeowners in these properties do not always embrace green practices as quickly as developers. According to Pablo Rene Ramírez at Monterrey Tech: “What occurs is that people then sell their heaters for quick cash, and then do not benefit from the long-term utility savings and thus are unable to pay the mortgages or make ends meet” as “green homes” are more expensive than traditional ones.<sup>184</sup> The logic of green housing does not seem to coincide with the immediate income needs of a majority-poor homeowner population. Even worse, DUIS projects continue to expand the borders of the cities where they are located. Take, for example, the Puerta de Anza development in Nogales, near the U.S. border:

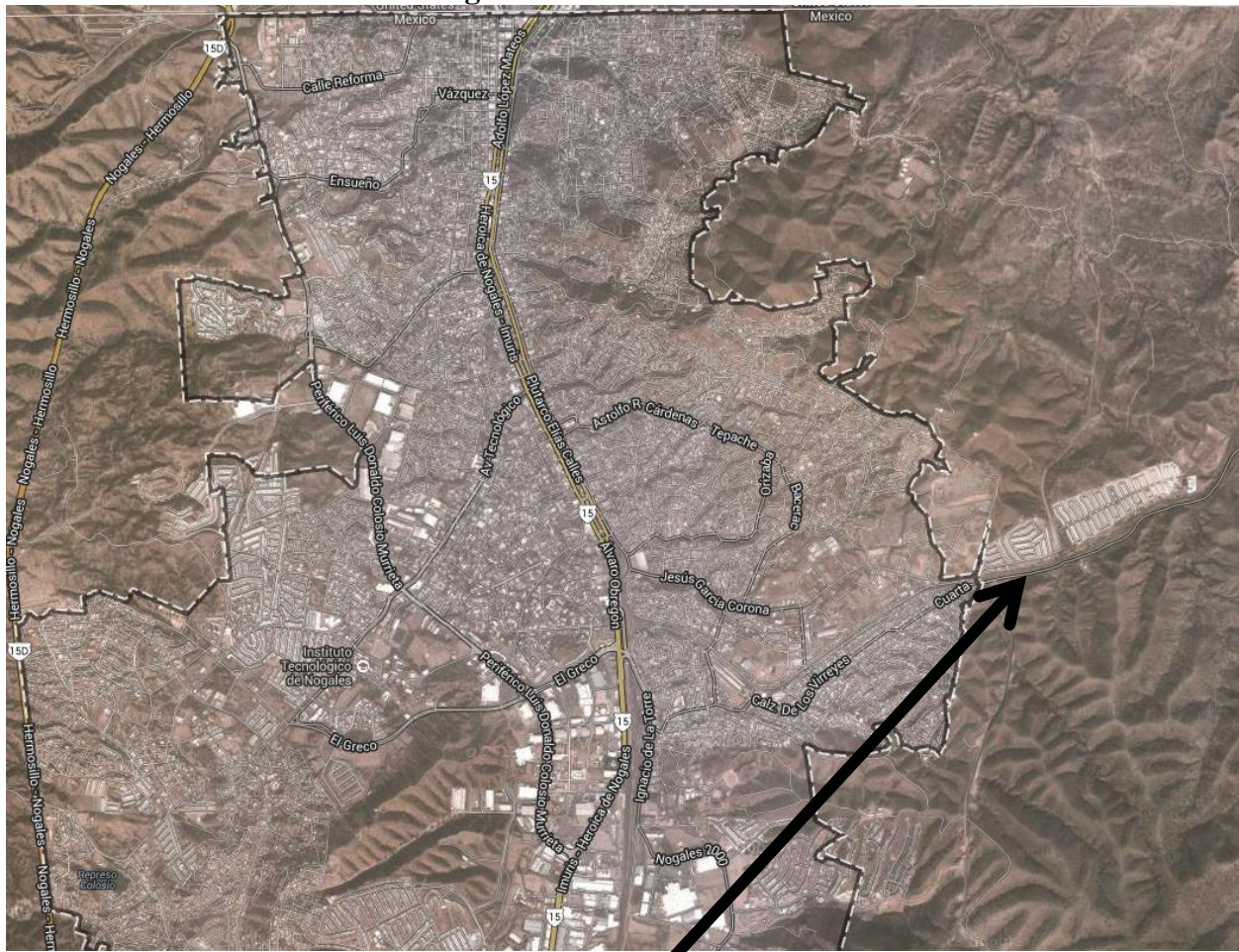
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<sup>182</sup> Maes, Filip, Andres Modak, Mona Safabakhsh, and Hannah Tucker. “Sustainable Housing: A Solution for Mexico.” January 26, 2011.

<sup>183</sup> “Desarrollos Urbanos Integrales Sustentables (DUIS).” Sociedad Hipotecaria Federal. 2011.

<sup>184</sup> Maes, et al., “Sustainable Housing.”

Figure 6: Puerta de Anza<sup>185</sup>



*Puerta de Anza, on outskirts of town*

Despite its subsidy and its improved quality, DUIS does not seem to enforce a return to more central development.

To try to promote the construction of housing in locations that better facilitate social mobility and limit abandonment, the federal government has created a system of subsidizing, through CONAVI, housing that meets certain locational characteristics. The central government evaluates projects on their location, density, amenities, and sustainability. Developers have been asked to submit their land reserves to the National Registry of Territorial Reserves (RENARET), which evaluates the land's suitability for development based on its location and the level of

<sup>185</sup> Map created by author using Google Maps.



existing development (where in-fill projects are favored over greenfields). Only proposed developments on land that meets quality and location standards and reaches at least 350 points on a rubric based on the four above characteristics will be eligible for added homebuyer subsidies.<sup>186</sup> In other words, the government is using supply-side subsidy to ideally drive aspiring Mexican homeowners to pick the now more affordable, central development. Government officials have, perhaps not surprisingly, labeled these efforts a resounding success. Jorge Carlos Ramírez Marín, director of SEDATU, marveled in March 2014 that thanks to this new subsidy system, the future will not see homes built far from schools, transit, or employment.<sup>187</sup>

These new rules are good first steps, but details in the program show that shifts to better sited housing are not as profound as the government has trumpeted. Specifically, the grading rubric shows that the majority of supported developments are on the urban periphery, the subsidy scheme directs lower-income individuals to the lowest-scoring projects, i.e., the worst-sited, and the much-lauded densification is minimal. Let's first investigate the rubric in detail. Land reserves are evaluated on their location and the level of existing development:

**Figure 7: Location and Development Scoring Definitions**

<b>Location Score Name</b>	<b>Definition</b>	<b>Development Score Name</b>	<b>Definition</b>
<b>U1</b>	Central urban plot with employment access	<b>R1</b>	Land acquired
<b>U2</b>	In consolidated urban area	<b>R2</b>	Zoned as residential land
<b>U3</b>	On perimeter of urban growth	<b>R3</b>	Infrastructure investments made
<b>“Fuera de contorno”</b>	Outside of the urban boundary, ineligible for subsidy	<b>R4</b>	Some housing already constructed

<sup>186</sup> “Política Nacional Urbana y de Vivienda: Reglas de Operación 2014.” SEDATU and CONAVI. 2014.

<sup>187</sup> Torres, Yuridia. “Nueva política de vivienda impulsó a constructoras.” *El Economista* March 25, 2014.

From our perspective, land that meets U1 R1 (undeveloped in center of city) is the most desirable for new housing construction. Thereafter, it is hoped that other U1 land would gain preference over further-out land. Unfortunately, U1 land is a small portion of that available nationally:

**Figure 8: Distribution of Registered Land Based on Location Grade**

Location Score	U1	U2	U3	DUIS	FCA <sup>188</sup>	FCB
Number of Hectares	7,538	18,125	28,873	10,308	9,388	36,263
Percentage of Registered Land	7%	16%	26%	9%	8%	33%

Still, as figure 8 shows, the new grading system has done an impressive job of removing 41 percent of reserve land from development consideration and subsidy eligibility (FCA and FCB). Despite that progress, a lot of eligible land is fairly peripheral and fairly undeveloped:

**Figure 9: Distribution of Subsidy-Eligible Land Based on Location and Development Grades<sup>189</sup>**

Status	U1	U2	U3
R1	547 (0.50%)	2,034 (2.09%)	3,137 (2.84%)
R2	1,949 (1.76%)	3,813 (3.45%)	11,427 (10.34%)
R3	847 (0.77%)	2,945 (2.67%)	4,453 (4.03%)
R4	3,396 (3.07%)	8,406 (7.61%)	9,069 (8.21%)

A telling takeaway from this chart is that there are many fewer highly desirable development sites (U1, R1) than least desirable, U3, R1 (where the site is peripheral and existing development is minimal).<sup>190</sup> U1, R1 land appears to most appropriately achieve the government's stated objectives of central housing density, while U3, R1 land threatens to place more housing on the

<sup>188</sup> “fuera de contorno A.” From the policy, FCA means land that is outside the urban perimeter but with an “acceptable” level of jobs and housing, whereas FCB has only acceptable employment or housing levels, or perhaps neither.

<sup>189</sup> Percentages are based on total available land.

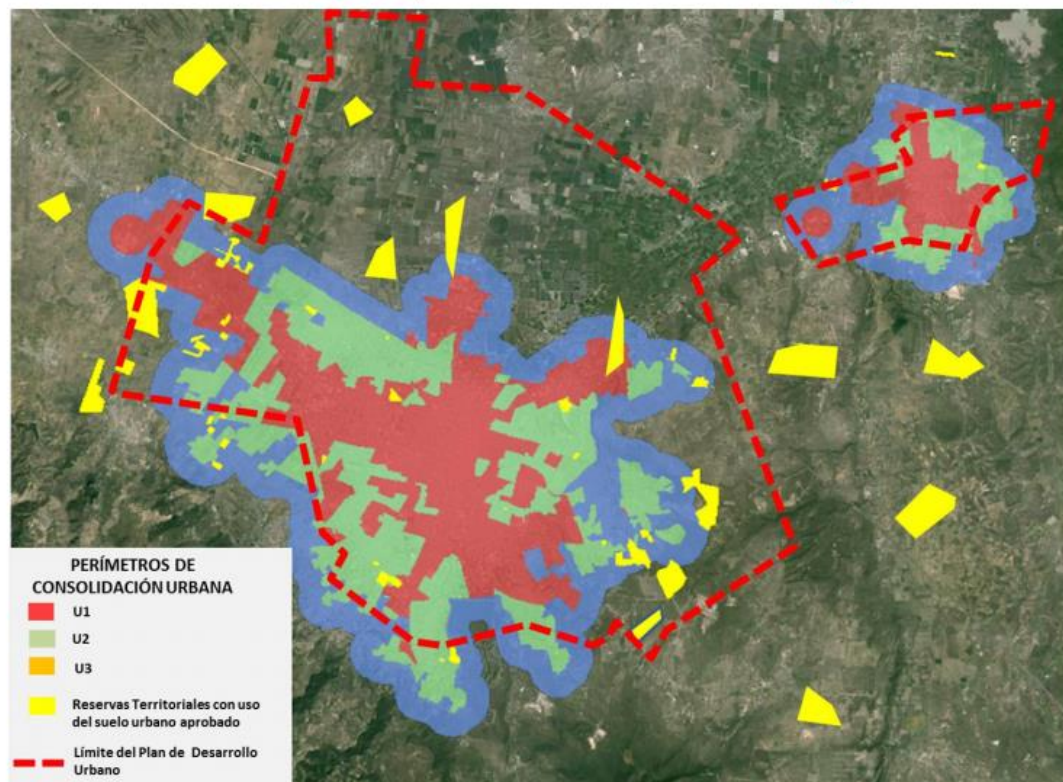
<sup>190</sup> “Política Nacional Urbana y de Vivienda: Reglas de Operación 2014.”

urban perimeter in otherwise undeveloped tracts. And yet, both are eligible for subsidy.

SEDATU's own materials reveal the fringe nature of U3 land (Figure 10). This new subsidy scheme has created some reasonable limits to the sprawling Mexican metropolis, but it still facilitates a significant amount of peripheral development.

**Figure 10: U1, U2, and U3 Zones<sup>191</sup>**

### **Reservas territoriales, contornos urbanos y límite PDU**



The way that the subsidies affect the poorest homeowners is also troubling. CONAVI has created two subsidy classes for individuals. Low-income buyers receive a subsidy of between 62,998 and 72,871 pesos (32 to 37 SMGVM).<sup>192</sup> For all other buyers, the subsidy falls between 57,092 and 66,965 pesos (29 to 34 SMGVM). Housing has been divided into four categories based on its price:

<sup>191</sup> SEDATU. "Política Nacional Urbana y de Vivienda." October 2013.

<sup>192</sup> Salario Mínimo General Vigente Mensual—the minimum wage

**Figure 11: Housing Categories**

Category	Price (pesos)	Price (SMGVM)
I	313,023-393,740	159-200
II	253,963-311,055	129-158
III	118,122-253,963	60-128
IV*	118,122-253,963	60-128

\*limited to individuals making 2,953 pesos/month or less

While the added subsidy seems like an attractive boost to the poor, how subsidies are allocated steers them towards lower-quality properties. The allocation process is below:

**Figure 12: Development Scoring Chart and Related Subsidy Based on Points and Category<sup>193</sup>**

Category	Value of House (SMGVM)	Point Range												
		0-349	350-400	401-450	451-500	501-550	551-600	601-650	651-700	701-750	751-800	801-850	851-900	901-1000
		Maximum Amount of Subsidy												
I	159-200	0	0	0	0	0	0	0	30	31	32	32	33	33
II	129-158	0	0	0	29	30	30	31	31	32	32	33	33	34
III	60-128	0	29	30	30	30	31	31	32	32	33	33	34	34
IV	60-128	0	32	33	33	33	34	34	35	35	36	36	37	37

This chart shows that the category of house designed for low-income residents with monthly income equal to, or less than, 2,593 pesos, category IV, and the category of house with the same price level but without the income restriction, category III, qualify for subsidies at the lowest acceptable point values.<sup>194</sup> These low-scoring houses are, by definition, the ones with lowest quality and worst location. While the poor do get added subsidies for very high-scoring homes, we should expect that, without significant arm-twisting of developers beyond the 9,000 extra pesos of extra subsidy (less than \$900), there are not going to be large amounts of high-scoring houses available for low-income workers. The costs of providing such housing will simply not be justified given the low expected return from the workers' payments. Therefore, the poor will largely be confined to lower-quality housing. Thus, the new subsidy regime is sensible in its

<sup>193</sup> "Política Nacional Urbana y de Vivienda: Reglas de Operación 2014."

<sup>194</sup> Ibid.

intent, trying to centralize where developers build and increase low-income workers' access to more centralized, higher quality properties. Neither goal is fully realized, however, as the rules still direct the poor to the lowest-quality housing, despite the added incentives to purchase better housing.

Even more disconcertingly, the State of Mexico, ground zero for sprawl in the country, has gotten off the hook. In February 2014, Antonio González Dueñas, a representative for the Mexican Employers' Association (COPARMEX), announced that because of the development time of housing in the State of Mexico, new housing coming online there in 2014 would still follow the old rules. Attempts to force more urban development would not be realized until 2015. These developments have been concentrated in some of the newer, exurban, and less successful State of Mexico cities, like Huehuetoca. There, 23,612 houses are uninhabited, 45 percent of all housing in the city.<sup>195</sup> In other words, while efforts at reform, as mixed as they may have been, tried to bring order to the chaotic Mexican housing market, the State of Mexico has continued its unchecked sprawl.

A final exercise—the attempt to increase the verticality of the housing stock—has embraced good economic fundamentals. Vertical housing invariably costs more to construct than the type of single-story, single-family traditionally seen in Mexican suburban developments. Because Mexican homebuyers are so price sensitive, vertical housing needs to be heavily subsidized to succeed. According to the new rules, the percentage of subsidies available for “vertical housing” will increase from 20 percent to 36 percent. CONAVI will bankroll 500 million pesos in subsidies, with INFONAVIT contributing 3 billion pesos worth of credits. The

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<sup>195</sup> Torres, Yuridia. “Efectos de la nueva política nacional de vivienda, hasta el 2015.” *El Economista* February 19, 2014.

expected production is 12,000 units.<sup>196</sup> In 2012, INFONAVIT credits averaged 275,000 pesos per house.<sup>197</sup> With the combined CONAVI subsidy and INFONAVIT credits, new vertical production will average over 290,000 pesos. While not drastically more, this additional credit is needed to assure access of the poorer workers to the new vertical housing. In this way, it seems like a sensible realignment of public subsidy.

However, questions of total production, definitions of “verticality” and “density,” and maintenance remain. While 12,000 additional units of housing nationally will certainly contribute to reducing the housing shortage, it is less than 2 percent of the total units funded by INFONAVIT in 2012. And there is no guarantee it will be concentrated in the Mexico City region where verticality is most needed. More will need to be done in the world of incentives to promote vertical housing closer to the central city. Meanwhile, the definitions that CONAVI and INFONAVIT have set for “verticality” and “density” do not totally assure that success under their standards means broader success for the type of dense, centrally located development desired. In the 2014 rules, developments receive points for being relatively denser than typical developments under the zoning policies of the local communities.<sup>198</sup> Therefore, moderate density developments in otherwise low-density communities receive as many points as highly dense developments in otherwise medium-density communities.<sup>199</sup> While increased density appears to be on the horizon, it may be pushed to more sprawling, peripheral areas. Similarly, certain government documents mention two-story or three-story homes as examples of verticality that

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<sup>196</sup> Álvarez, José Eleazar Piña. “Informe Comisión CONAVI.” CANADEVI. July 3, 2013.

<sup>197</sup> Guthrie, “Mexican Mortgage Institute Infonavit.”

<sup>198</sup> “Política Nacional Urbana y de Vivienda: Reglas de Operación 2014.”

<sup>199</sup> The new national policy’s operation rules divides Mexican cities into three categories, based on their existing zoned density: 40-59 houses/hectare, 60-89 houses/hectare, and 90-120 houses/hectare. Within each category, reaching a category-specific level of density earns a project the maximum in density points. Those levels are around 65, 95, and 125, respectively. Ibid.

score more points under the 2014 general rules.<sup>200</sup> The specific rules for vertical housing have not yet been published, but much more density than that will be needed to promote more central, accessible developments. Additionally, the new program has yet to address the maintenance and management issues that affected rental and ownership vertical housing in the past. As we saw at the end of Section III, rental housing buildings have largely been left in tatters since the movement towards homeownership took hold in the capital. Previous INFONAVIT investments in multi-story housing have similarly resulted in rundown buildings, because of the proclivity of Mexicans for single-family housing and because of issues of the maintenance of common areas.<sup>201</sup> Incentives and legal structures to address those historical concerns will need to be addressed, or else the very cost-conscious Mexican buyers may scrimp on communal maintenance.

#### *Impacts of Current and Proposed Reforms*

Having looked initially at its progress, we can ask how the new National Housing Policy has started to shift the economic fundamentals of housing in the capital area. We can also ask how some of its contemporary existing alternatives (Harvard and Víctor Borrás) will affect the economic realities. Notwithstanding the serious implications of the delays in implementing the new location policies in the State of Mexico, progress has been made in bending the location curve already. The greater subsidy for high-scoring sites should flatten the top of the curve, somewhat, as central housing is getting relatively cheaper because of added subsidy, but the potential new stock is not that large. Additionally, if vertical housing is supported in very central areas, then we should expect more flattening, too. Meanwhile, the exclusion of some land from subsidy creates profound costs for very peripheral land. In essence, we might argue that the

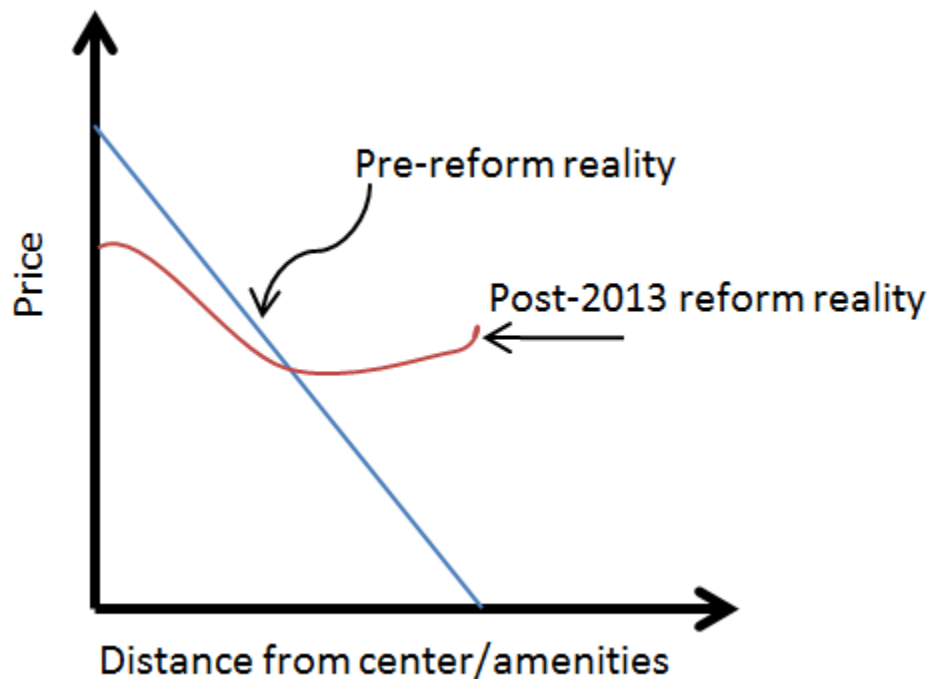
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<sup>200</sup> Ibid.

<sup>201</sup> Lopez and Campos, “Scale without Growth,” 3.

reforms so far have created a U-shape to the location market, where the center is getting slightly more affordable and the periphery significantly costlier. There is still work to be done in between.

**Figure 13: Post-Reform Location Market**



The quality market is showing some movement towards establishing a floor through the additional home improvement credits that reform has created. Though they will impose a cost on the owner, the credits are significantly large to suggest that owners can demonstrably upgrade their housing quality without switching housing. That effect means that the housing stock at-large will see higher quality. But, until there is greater attention paid to ensuring regulatory commitment at the local level and more attention paid to residents of informal housing, the improvements to housing quality will be elective, whoever applies for these new credits. Such a system is unlikely to cause a dramatic sea change in the market.



The proposed reforms are obviously less refined than their implemented counterparts, but the eight proposals between Borrás and Harvard have within them significant potential for building on the progress made most recently. Three in particular seem to hold the most promise for location and quality reform. Both call for expanding housing credit beyond the traditional INFONAVIT members. Whether it is through credits for informal home improvement or the offering of home-buying credits to informal workers, such expansion ought to provide an opportunity for increased quality and relatively lower prices, creating more of a floor price for the informal side. Additionally, Borrás argues that INFONAVIT should make investments in rental programs. Rental housing is well-suited to central areas where land is more expensive. It is also well-suited to the desired new verticality in housing and limits the maintenance concerns of condominium ownership. Increasing the supply of rental housing, if it is placed in the center, could reduce housing prices while increasing the average centrality of housing. Given the decrepit condition of existing rental housing, new rental housing ought to increase at least the overall quality of rental housing in the capital area. The Harvard plan also calls for increased, and better-sited, land for self-help housing. As they write, informal housing continues to be substantially cheaper than formal housing.

An analysis of the costs and benefits of informal housing in eight Mexican cities commissioned by SEDESOL has documented the advantages of informal housing in providing larger lots at lower costs and often in more accessible locations than many lower-income households could obtain in the formal sector. Indeed, this study found that the upfront costs of informal housing acquisition were on the order of five to eight times lower than for formal housing. In part this difference reflects the more modest nature of the informal home, where residents tend to make investments over time to improve and expand their houses rather than buy a completely finished home. But to some extent it also reflects the contribution of the costs of officially registering and transferring property to a new homeowner as well as the costs of urban services.<sup>202</sup>

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<sup>202</sup> Herbert, et al., “The State of Mexico’s Housing,” 18.

Therefore, informal housing will continue to be attractive to poor Mexicans, barring substantial changes in their economic conditions. To make such housing better in terms of location, the researchers propose expanding currently piloted “land banks” where the government holds the land for the creation of self-help housing after the land is purchased at a low-rate by an individual, as well as increased technical support and microfinancing to self-help builders via government and NGO intervention.<sup>203</sup> Such a plan would seem to make higher quality informal housing a more affordable and realistic opportunity for Mexicans.

While there is promise in some of these proposals, a continued interest in traditional planning solutions rings hollow and, in what seems like a tired refrain by now, local perverse incentives for development continue to go unaddressed. The Harvard group called for better urban planning and more coordinated infrastructure investments. From history, we have seen the anti-poor proclivities of planning. Their own study finds that, across the country, only 15 percent of the 402 largest municipalities in the country were identified as having adequate planning capacity.<sup>204</sup> With low capacity and the already-identified high likelihood of corruption, what faith should we put in planning? While transportation and other infrastructure improvements are vital, the proposed reforms do not address the incentives for the State of Mexico, in particular, to make such infrastructural investments. With property taxes forming a small part of the local budget situation, State of Mexico-driven investments in infrastructure do not necessarily equate to more revenue for a “limited” jurisdiction.

In all, the new rulemaking and credit allocations created in the wake of the New National Housing Policy show some promise for realigning subsidy and incentive so that it promotes better quality, dense, and central housing. The devil is in the details, though. Many of the

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<sup>203</sup> Ibid., 19-20.

<sup>204</sup> Ibid., 23.

incentives and regulatory standards leave much of the existing unsustainable system in place. Other proposals seem similar well-intentioned, though they rely heavily on problematic planning. In the next section, I will explain how more reform can drive the housing market further in the right direction.

### **VIII. Shaping the Political Economy to Correct the Problems of the Past**

In light of the history, difficulties, and nascent attempts at reform in the housing market in Mexico City, how can political and economic realities be shaped to better address both the quality and location of housing for Mexican workers? To answer the definitive question of this paper, I will create a framework for future reform that outlines the strategies, tools for implementing these strategies, and jurisdictional level of potential interventions. Six strategies will form the basis of my proposed reform agenda:

- 1. Improving the location of housing by creating incentives for development within the DF and in central areas of the State of Mexico.**
- 2. Improving the location of housing by creating special initiatives to promote Transit-Oriented Development.**
- 3. Improving the quality of housing by combating corruption in the State of Mexico.**
- 4. Improving the quality of housing through property tax reform in the State of Mexico.**
- 5. Improving the quality of housing for informal sector Mexicans by increasing their access to credit.**
- 6. Creating more robust rental housing finance instruments.**

Pursuing these interventions would achieve an unprecedented, but sorely necessary, revolution in Mexican policy: that planning, markets, and governance serve the working-class housing market primarily, equitably, and efficiently. That revolution is not guaranteed, however. I will conclude this section by considering the drawbacks and unanswered questions surrounding these proposals.

## *Framework for Next Reforms*

There has been significant, but uneven, progress in driving the housing market in the right direction under the new National Housing Policy. Other proposals from reliable sources offer some added opportunities for a market that equitably distributes both location and quality benefits. In a moment, I will elucidate on six additional strategies, with associated tools, to move Mexico City even closer to a more desirable arrangement. But first, I would like to address five underlying considerations that are perhaps missing in Mexican policymakers' current frameworks and will be used to drive further progress. These factors, which speak to both positives and negatives in the present housing market, could incentivize leaders to embrace the strategies for reform that I propose. Fundamentally, my framework is about taking advantage of economic and political opportunities and incentives that exist today and derives from the framework created in Section II.

- 1. The continued high demand for housing**—In 2011, Mexico's housing shortage stood at 8.9 million units, increasing at a rate of 200,000 new demanded homes every year.<sup>205</sup> In 2009, the IADB reported that 26 percent of homes were deficient in their materials, construction, infrastructure, or land tenure.<sup>206</sup> While today remains a difficult moment for the Mexican housing market, there is still plenty of demand pressure on the market and INFONAVIT has shown its ability, since the crisis and before, to increasingly meet that demand. That reality should give policymakers the incentive to design a system that works, not just one that generates as many units as possible.
- 2. The robust policymaking capabilities of the DF and the Federal Government**—Both the government of the Distrito Federal and the Federal Government, through

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<sup>205</sup> Maes, et al., "Sustainable Housing."

<sup>206</sup> Bouillon, César Patricio. *Un espacio para el desarrollo: Los mercados de vivienda en América Latina y el Caribe*. Washington, D.C.: Inter-American Development Bank, 2012, 30.

INFONAVIT, CONAVI, and SEDATU, have established a legacy of complex social and housing policy.<sup>207</sup> The DF's locally-constructed welfare state is unparalleled within Mexico. INFONAVIT's 2000s transformation has been heralded internationally as a successful, if perhaps overly-expansive, financialization of the housing market.<sup>208</sup> Continuing to drive the housing market so that it better serves the interests of poorer Mexicans will likely require complicated and new policy measures. While there are certainly still governance concerns at these two levels,<sup>209</sup> we should have faith that these governments are capable of continued reform and a focus on improved housing.

3. **The decline in population growth within the DF**—Because the DF, like other Mexican states, depends upon payroll tax for its local contribution to its finances, the population of the DF matters greatly to its future fiscal health. Between 1980 and 2000, the DF lost over 200,000 residents. It has since regained that population.<sup>210</sup> This new growth is due, in part, to Mayor Lopez Obrador's Bando Dos program, which streamlined the development process in the core.<sup>211</sup> The period of decline was an extremely difficult period for governance in Mexico City.<sup>212</sup> If policymakers are sensible, they will seek to avoid a repeat of earlier troubles and continue to boost their population.
4. **The “poor brother” status of the State of Mexico**—Authors cited previously in this work have identified various ways that the State of Mexico is the “poor brother” to the DF. It has a worse social service system, it receives less support from the federal government, and it is demonstrably poorer than the DF, as measured by its contribution to

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<sup>207</sup> Not to mention the various other government agencies working on housing, like FONHAPO, FOVISSSTE, SEDESOL, etc.

<sup>208</sup> Ibid., 19.

<sup>209</sup> Ibid., 29.

<sup>210</sup> “Volumen y crecimiento: Población total por entidad federativa, 1895 a 2010.” INEGI. 2012

<sup>211</sup> Gilbert, *In Search of a Home*, 19.

<sup>212</sup> *Mexico City: Growth at the Limit?* 2006. London School of Economics, 8.

the national economy. The federal government of Mexico, given that the State is its largest jurisdiction, has a strong incentive to improve its conditions, but policy measures should be designed to exploit the incentive of the State of Mexico to escape the shadow of the DF and its relative poverty.

5. **The Federal Government's central fiscal role**—The federal government accounts for 90 percent of the total tax revenue in the country.<sup>213</sup> Through the *proporciones* and *aportaciones* systems, as well as other grant programs, the federal government really holds the purse strings for state governments. That should incentivize two potentially-beneficial types of actions. First, mandates on housing policy could be implemented in federal grants and have a substantial impact. Second, more local revenue generation incentives could be designed to ensure that new value in the form of better location and quality meant more fiscal health for the State.

Figure 14 below identifies the strategies for accomplishing reform, the specific tools to achieve that strategy, and the level of government that needs to act to make reform happen. Each strategy and each tool speaks to different considerations listed above. For example, Tool 1.1, which calls for using density bonuses to fund more central housing is mindful of three identified considerations. For density bonuses to be most effective, there must be a strong desire to build housing. The national housing shortage (consideration 1) and the government support for housing have created such demand. Density bonuses are an advanced zoning and financing strategy. Both the DF and federal government's established policy competence (consideration 2) suggest that such a program can be effectively designed and implemented. Thirdly, the tenuous state of the DF's population amidst suburban growth (consideration 3) gives its government the

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<sup>213</sup> "Strengthening Subnational Public Finance."

incentive to restart central construction. Density bonuses should do just that. In speaking to the historical, political and economic realities and the considerations standing before officials, I believe that these strategies offer encouraging steps forward.

**Figure 14: New Paths to Reform**

<b>Market</b>	<b>Strategies</b>	<b>Tools</b>	<b>Level of Government</b>
<b>Location</b>	Centralized development incentives	-Density Bonuses -Realigning location subsidies -Increasing central land supply	Federal government, DF, State of Mexico
	TOD incentives	-Rezoning station areas -TOD funds -Future mandates	Federal Government
<b>Quality</b>	Combating corruption	-Curtailing relationship between government and developer -Rights and recourse for homeowners -Broader reform	Federal Government, State of Mexico
	Property Tax Reform	-Local tax generation -Effective taxation	Federal Government, DF, State of Mexico
<b>Location &amp; Quality</b>	Increased credit access for informal sector	-Credits for informal workers -Informal land banks	Federal Government
	Rental market development	-Apply other reforms -Replicate LIHTC -Increase landlord capacity	Federal Government, DF, State of Mexico

#### Strategy 1: Improving Location through Central Development Incentives

The objective of Strategy 1 is to further the progress of the new National Housing Plan in making central housing a larger part of new home construction by bringing the cost curve closer

to the idealized state proposed in Figure 5. To do that, Mexico should employ a series of innovative zoning and financing techniques successfully used across the globe to promote density and affordable housing, while minimizing concentrating poverty.

*Tools:*

### **1.1. Density Bonuses for Affordable Housing Construction in Central Areas**

Typically, density bonuses are used in areas where demand for housing, both affordable and otherwise, is high and zoning actively restricts the density or height of buildings. Bonuses are given to developers to expand the size (and profitability) of their development in exchange for offering additional affordable units. Programs in Maryland and New Jersey, for example, have proven that density bonuses can generate thousands of affordable units in the United States. Rubin and Seneca found that density bonuses in New Jersey produced over 60 percent of the state's affordable housing in a 15-year period.<sup>214</sup> And in Maryland, Montgomery County generated 10,000 affordable units of 25 years.<sup>215</sup> In Mexico City, the concern is less that development is hitting up against density limits, and more that the current incentives for buyer and builder keep housing short because it is cheaper. Therefore, to build on the increasing subsidies created under the new reform in Section VII, Mexican density bonuses should give added CONAVI subsidy to developments that build above three stories in U1 and U2 areas. Such subsidy would complement the current verticality initiative, significantly increase supply, and continue a sensible market-shaping, as opposed to planning-based, approach. The existing maturity of financial incentives in the housing market suggests that adding an additional subsidy would also be an achievable goal.

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<sup>214</sup> Rubin, Jeffrey I. and Joseph J. Seneca. "Density bonuses, exactions, and the supply of affordable housing." *Journal of Urban Economics* 30.2 (1991): 210.

<sup>215</sup> Kautz, Barbara Ehrlich. "In Defense of Inclusionary Zoning: Successfully Creating Affordable Housing." *University of San Francisco Law Review* 26 (2001-2002): 979.



## **1.2. Further Realignment of Location-Based Subsidies**

While the reforms explained in Section VII do push housing development away from pure exurban sprawl, the subsidy scheme is still not ideal. The subsidies need to be further aligned to make it affordable for lower-income workers to access high-quality, centralized housing. In particular, the subsidies available to low-income housing scoring above 700 should be boosted even further. Currently, subsidies for low-income workers max out at 72,871 pesos (37 SMGVM) and do not increase significantly as quality improves. Therefore, we should expect most low-income housing to remain low-quality and peripheral. Having such housing be what is principally offered to the poor is not a great tragedy. It should not be the only type of housing available to the poor. The subsidy for Category III and Category IV housing should increase to 40 SMGVM or even 45 SMGVM (78,779 or 88,626 pesos) for the highest scoring categories. That would give developers more incentive to build better housing for the poor. While this strategy could perhaps do the most to achieve the idealized market condition, there is undoubtedly a limit to how much subsidy Mexico can afford to give out. Still, getting more working-class Mexicans into high-quality, central housing would not only counter the mistakes of the past, but would promote important goals of socioeconomic inclusion.

## **1.3. Eminent Domain, Taxing, and Land Banking to Increase Central Land Supply**

This tool for improving location highlights a fact brought to light by SEDATU's initial planning document for the new housing policy: a lot of urban land is abandoned or misused. According to SEDATU, 120 thousand hectares of urban land in the country of Mexico are undeveloped.<sup>216</sup> That land could be effectively exploited for new housing affordable housing development through tax-based eminent domain and land banking. A vacant land tax on land inside urban boundaries could effectively force landowners to upgrade the land to housing or

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<sup>216</sup> SEDATU, "Política Nacional Urbana y de Vivienda."

other uses, as such a tax lowers the present value of the land and increases its appreciation rate.<sup>217</sup> Owners will be motivated to improve the land. Imposing a blight or vacancy tax on empty or severely rundown properties could help the properties develop, or, if owed taxes are not paid, the federal government could seize the property. Taking this seized property and perhaps other government-owned property, SEDESOL could expand its nascent land banking program. Land banking is where governments gather land together for resale for community development initiatives, often affordable housing.<sup>218</sup> Since 2008, SEDESOL has banked land for the purposes of affordable housing development. In Nogales, for example, SEDESOL has already banked 500 hectares.<sup>219</sup> Taking an aggressive stance on the many remaining hectares of vacant land would allow for a significant increase in the supply of well-sited affordable housing. Such an expansion would require strong legal structures and tax enforcement, but the policy of landbanking has already made an auspicious start in the country.

#### Strategy 2: Improving Location through TOD Incentives

Strategy 2 takes the thesis of strategy 1—that fiscal incentives can drive relocation of new housing stock—and applies it to the vastly underutilized transit assets that Mexico City and even the State of Mexico have. Because of its notorious traffic and pollution problems, many different authors and advocates have proposed improvements to Mexico City’s public transit. Today, the region features a subway system, two light rail lines, a BRT network, and a nascent suburban train line. While the light rail, metro, and suburban train all extend into the State of Mexico to varying degrees, these developments have not been leveraged for centralized housing

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<sup>217</sup> Shoup, Donald C. “The Optimal Timing of Urban Land Development.” *Papers in Regional Science* 25.1 (1970): 39.

<sup>218</sup> Alexander, Frank S. “Land Bank Strategies for Renewing Urban Land.” *14 Journal of Affordable Housing and Community Development* 140 (2004-2005): 140.

<sup>219</sup> *Estado Actual de la Vivienda en México*. Mexico, DF: Fundación CIDOC and Sociedad Hipotecaria Federal, 2010, 96.

stock or transit-oriented development. In the State of Mexico, in particular, the suburban train has consistently failed to meet ridership projections since its opening.<sup>220</sup> As Figure 15 shows below, station area development has not helped. At the station in the south of Cuautitlán, Tultitlán, open fields stand where new apartments or commercial centers should. How can we get such development on the right track?

**Figure 15: Poor Station Area Planning<sup>221</sup>**



*Tools:*

## **2.1. Rezoning of Current Station Areas**

<sup>220</sup> Cruz Serrano, Noé. "Suburbano enfrenta colapso financiero." *El Universal* December 19, 2012.

<sup>221</sup> Author's creation using Google Maps.

In its comprehensive study of the lack of transit-oriented development in the Mexico City region, the Institute for Transportation and Development Policy argued that failures of development around transit could be ameliorated by changing zoning to better promote high-density construction near stations.<sup>222</sup> Provided the demand is there, such development need not necessarily incentivize housing exclusively. The placement of more employment around high-quality transit, including in the State of Mexico, would still tackle the location problem somewhat by creating a polycentric model of development. In a somewhat controversial paper about the United States, Gordon and Richardson argue that sprawl of jobs can lead to desirable social and environmental outcomes because people in sprawled housing can then more easily access jobs formerly in the center.<sup>223</sup>

## **2.2. Creation of TOD Funds within CONAVI and INFONAVIT**

Working within the subsidy structure explained in Section VII and improved through Tool 1.2, CONAVI and INFONAVIT should develop a specific subsidy fund to promote transit-oriented development (TOD) of affordable housing. Housing near transit is already likely to score well on the reformed quality metrics, but additional loans and subsidies should be provided to developers so that they are encouraged not only to develop land they own near transit, but also to buy up the currently poorly used land and convert it to residential use. In the United States, Enterprise's TOD Fund, which offers loans for the acquisition of TOD land for affordable housing construction, could serve as a model.<sup>224</sup>

## **2.3. Mandates for Future Rail Extensions**

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<sup>222</sup> Medina Ramirez and Veloz Rosas, *Transit Oriented Development*, 55.

<sup>223</sup> Gordon, Peter and Harry W. Richardson. "Are Compact Cities a Desirable Planning Goal?" *Journal of the American Planning Association* 63.1 (1997): 98.

<sup>224</sup> "Denver Transit-Oriented Development (TOD) Fund." Enterprise Community Partners.

There is some evidence that the Line B of the Metro, which extends into the northeast of the State of Mexico has led to densification and increased transit use.<sup>225</sup> Development occurring around transit is not seen as a foreign concept. In an interview, a representative from the developer Ara in Melchor Ocampo, he advised us to invest in land in northern Mexico State. Though it has a tortured history, many believe that the suburban train will be extended through that part of the state to the city of Pachuca in the state of Hidalgo.<sup>226</sup> With nascent exurban communities in between Cuautitlán and Pachuca, such a development could bring more unwieldy sprawl. Instead, the federal government should place stipulations on its investments in the new line, and other potential transit extensions, that call for the creation of planned, affordable housing developments near the transit. Even better, the federal government should engage in the purchase of adjacent land, and contract with developers for transit-joint developments that meet the need for quality, well-located social housing.

### *Strategy 3: Improving Quality by Combating Corruption*

While Strategies 1 and 2 are fundamentally about location, there may be some spillovers into improving overall qualities of housing for residents of the capital city area. Strategy 3's objective, meanwhile, is to directly address a deficiency in the whole housing market that has yet to be addressed by current or proposed policy remedies. The corruption that allows for collusive relationships with developers and poor oversight of building condition issues must end to improve Mexicans' lives, the quality of housing, and the stability of the broader housing market. Resolving it, however, is no easy challenge. By all accounts, corruption is highly embedded within the functions of the Mexican state. It is ranked 100<sup>th</sup> (out of 183) by Transparency

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<sup>225</sup> Guerra, Erick. "Mexico City's suburban land use and transit connection: The effects of the Line B Metro expansion." *Transport Policy* 32 (2014): 105-114.

<sup>226</sup> Martínez Martínez, Daniel. "Insistirán en creación de Tren Suburbano." *Ultra Noticias* December 8, 2013.

International in their Corruption Perceptions Index, the worst of any OECD nation. Every year, 32 billion pesos are spent on *mordidas*, bribes paid out to public officials.<sup>227</sup>

*Tools:*

### **3.1. Diminishing the Relationship between Developer and Government**

This tool has within both a federal and a municipal-level approach. At the federal level, INFONAVIT should cease the oft-criticized preferential treatment of certain developers. The support created a highly concentrated market, with 9 firms controlling 25 percent of all construction.<sup>228</sup> These big firms have made creating peripheral tract housing their bread-and-butter. Some of those firms include Geo, Homex, and Urbi, all now facing major financial problems. This policy has led to low levels of financial oversight. Further, the cozy relationship between INFONAVIT and developers does not show much evidence of having moved construction jobs from the informal to the formal sector.<sup>229</sup> The government thus continues to subsidize illegal employment. Most importantly, it is employment that will not lead to social housing.

At the municipal level, a potentially successful approach may be to allow mayors run for re-election. Currently, they serve for single three-year terms. Multiple commentators have identified this policy as a structural issue that keeps social problems from being resolved.<sup>230</sup> Non-re-elected officials, instead of trying to curry favor among the populace to get re-elected, ostensibly are interested in supporting projects that might offer them personal benefit. Multiple

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<sup>227</sup> Stocker, Frederick T. "Surveying Mexico's Anti-Corruption Landscape." Manufacturers Alliance for Productivity and Innovation. August 2012, 5.

<sup>228</sup> Monkkonen, "Housing Transition," 17.

<sup>229</sup> Ibid., 76.

<sup>230</sup> Sánchez-Rodríguez, Roberto. "Urban and Social Vulnerability to Climate Variability in Tijuana, Mexico." *Integrating Science and Policy: Vulnerability and Resilience in Global Environmental Change*. New York: Earthscan, 2011, 195; Herrera, Veronica. "Does Commercialization Undermine the Benefits of Decentralization for Local Services Provision? Evidence from Mexico's Urban Water and Sanitation Sector." *World Development* 56 (2014): 19.

terms might keep them more accountable to the population and more able to implement long-term policy. The likelihood of implementing these reforms with the desired effect certainly needs to be questioned. The big construction firms largely find their holdings concentrated in the State of Mexico.<sup>231</sup> Given the growth there, INFONAVIT, state, and municipal officials all have incentives to keep the current questionable arrangements in place, regardless of whether they will face another election or not. Still, many on the ground support this reform as a potential stepping stone to broader political change, and I have no doubt that politicians will support their own re-elections. In fact, the federal government just approved a change that would allow the National Congress to be re-elected and would give the states the ability to approve the same for municipal officials.<sup>232</sup> The State of Mexico should do so and the voters should use that re-election opportunity as a check on corruption.

### **3.2. Strengthening the Rights and Legal Recourses of Homeowners**

As mentioned in Section IV, troubled homeowners in the State of Mexico have had little ability to successfully challenge the injustices of their housing condition without obfuscation and intimidation from public officials. There needs to be legal recourse for homeowners who face housing difficulties, as a check on homebuilders and local officials. INFONAVIT could significantly improve the legal situation of homeowners by giving them a formal grievance process where serious initial deficiencies in the house or its location could allow them the repayment of the credits that they have withdrawn. Such a system would need good regulatory oversight to ensure that INFONAVIT complied and that complaints were legitimate. Nevertheless, having some financial skin in the game could make INFONAVIT more attentive to corrupt systems that permit poor developments to come about.

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<sup>231</sup>“Análisis de la Industria.” Ernst & Young. 2011, 5.

<sup>232</sup> Agren, David. “Mexico ends decades-long ban on re-election.” *USA Today* January 31, 2014.

### **3.3. Leading with Housing towards Broader Policy Reform**

The massive scale of corruption in Mexico is not confined to the housing sector. PEMEX, the massive national oil company, was repeatedly accused of serving as a slush fund for PRI candidates.<sup>233</sup> The return of the PRI to power under Peña Nieto sparked fears that anti-corruption efforts would be stamped out.<sup>234</sup> Because corruption is so endemic to Mexican society—where a “poor politician is a poor politician”—anti-corruption efforts within the housing industry need to sync with other proposed reforms to public governance, like the new anti-bribery law.<sup>235</sup> And at the same time, progress in reducing corruption in housing would mean the elimination of inefficiencies in an increasingly large portion of the local economy and public sector.

#### **Strategy 4: Improving Quality through Property Tax Reform**

Our knowledge of limited cities leads us to believe that they will pursue their economic self-interest. At present, a very tenuous, poorly-developed, and relatively fiscally unimportant property tax system exists. Researchers of the United States have rightly pointed to the negative consequences of an overreliance on property tax in an age of diminished federal support. However, in Mexico, I believe that an “underreliance” on property tax has meant that municipal leaders value the quantity of housing over its quality.

*Tools:*

#### **4.1.Mandate more local generation of tax revenue from the states**

As mentioned in Section II, tax revenue comes largely from the federal government. The small percentage of revenue that states generate largely comes from payroll tax. Property taxes

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<sup>233</sup> Stocker, “Surveying Mexico’s Anti-Corruption Landscape,” 9.

<sup>234</sup> Ibid., 8.

<sup>235</sup> Maleske, Melissa. “Mexico’s anti-corruption law targets bribery in government contracting.” *Inside Counsel* November 28, 2012.



represent only 0.3 percent of GDP.<sup>236</sup> For that reason, commentators have called for an increase in locally-generated tax via increased property taxes to help create more overall fiscal capacity for the country, and to create a better system of valuing new property within jurisdictions, so that having higher quality uses of land leads to more local income.<sup>237</sup>

#### **4.2.Implement effective forms of property taxation**

Not all property taxes are created equal, however, and local governments have not always effectively employed property taxes to fund government and drive smart development. A few communities in Mexico use a land value tax (LVT), which is theoretically believed to promote more intensive land use and ostensibly less sprawl.<sup>238</sup> Within an LVT system, only land is taxed, not structures. Previous studies have suggested that removing taxes on structures would create more densification as there would be no added tax liability from additional construction.<sup>239</sup> However, LVT as implemented in Mexico, has largely failed to produce sufficient revenue (because of low rates)<sup>240</sup> and does not provide a check on low-quality (since structures are exempted). A better taxation system would raise overall rates (beyond the sub-1 percent rates common now), allow for lower property tax rates for social housing, and create a fraction of the overall tax assessment that is based on housing quality. Such a system was in place in Mexicali, before being thrown out by the Mexican Supreme Court. In fact, Mexicali's system seemed to represent the ideal. As Monkkonen writes, "Rather than use a recorded value, a system of appraisal was developed based on an assessment of the quality of the structure and its condition by local public officials. A value per square meter [in pesos] was determined using the table

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<sup>236</sup> Dalsgaard, Thomas. "The Tax System in Mexico: A Need for Strengthening the Revenue-Raising Capacity." *OECD Economics Department Working Papers* 233 (2000), 33.

<sup>237</sup> Ibid.

<sup>238</sup> Monkkonen, Paavo. "Impact of Land Value Taxation, The Impact of Land Value Taxation on Urban Development: The Experience of Mexicali and Baja California Norte." Forthcoming, 1.

<sup>239</sup> Ibid., 2-3.

<sup>240</sup> Ibid., 7.

presented...but the tax rate is applied to only 20 percent of this value.”<sup>241</sup> Municipalities should work with the national legislative and judicial authorities to allow for a type of property tax that incentivizing densification, but also promotes local incentive for quality improvement by better correlating quality with government revenue.

**Figure 16: Quality Scoring for Taxation in Mexicali**<sup>242</sup>

Categories of Housing	Categories of Condition				
	Excellent	Good	Regular	Bad	Terrible
<b>Superior</b>	7,622	6,586	5,417	2,677	1,013
<b>Middle-class</b>	5,569	4,812	3,957	1,956	740
<b>Economic</b>	3,670	3,171	2,608	1,289	488
<b>Low</b>	2,777	2,400	1,973	975	369
<b>Precarious</b>	1,403	1,212	997	493	186

#### Strategy 5: Expanding Access of Informal Sector to Improve its Quality and Location

Strategies 1-4 offer significant solutions to the issues of location and concern. However, their applications remain within the domain of the focus of the existing housing market landscape: for-purchase, formal housing. To drive greater benefit for more Mexicans, reform must tackle the informal side, as well, by promoting new credit and land opportunities.

*Tools:*

#### **5.1.Open up Credit to Informal Workers**

Informal workers face three problems in accessing housing credit. They are often poor. Nationally, the 16 percent of Mexicans who live in substandard housing, most earn less than four times the minimum wage and 80 percent are in the informal sector.<sup>243</sup> They are in the informal economy, and thus lack a formal paycheck to use to build credits through payroll taxes. Most of

<sup>241</sup> Ibid., 8.

<sup>242</sup> Source: Periódico Oficial del Estado de Baja California, 2012. Reproduced from Monkkonen, “Impact of Land Value Taxation,” 28.

<sup>243</sup> “Technical Note on Housing Finance.” International Monetary Fund. November 2006, 7.

them also lack a savings account, as the national rate is only 15 percent.<sup>244</sup> In order to provide formal housing access to informal workers while advancing an important goal of creating banked savings for low-income individuals, INFONAVIT and SHF should work to create Housing Savings Accounts for informal workers that allow them to build towards credits as would a formal sector worker through their payroll tax.

## **5.2.Land Bank for Informal Housing**

At the same time, the housing deficit is too gigantic to suppose that informal housing is going to disappear sometime soon. In fact, as the historical section taught us, informal housing has long provided a very affordable option for the poor.<sup>245</sup> In order to promote affordable, informal housing within the city limits, the federal government should land bank misused land (as in 1.3) for some future use by informal dwellers. It should then coordinate this banking with SHF's Assisted Self-Production Housing Program, which "which aims to promote sanctioned self-built housing with official land title by channeling microfinancing as well as technical assistance through registered affordable home builders and non-governmental organizations to low-income households. SHF is also providing substantial support for microfinance lenders as a means of increasing the availability of credit for low-income households seeking support for home improvement projects."<sup>246</sup>

### Strategy 6: Developing Rental Market Instruments to Improve its Quality and Location

While INFONAVIT has led a charge in creating a modern homeownership-focused market, the rental market has seen nearly seven decades of decline. And as the IMF found, "there are no programs to support development of rental housing."<sup>247</sup> That trend is unfortunate because,

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<sup>244</sup> Ibid.

<sup>245</sup> Herbert, et al., "The State of Mexico's Housing," 18.

<sup>246</sup> Herbert, et al., "The State of Mexico's Housing," 19.

<sup>247</sup> "Technical Note on Housing Finance," 8.

for many reasons, rental housing may better serve the fiscal and social needs of working-class individuals. To that end, the rental market needs to mature through new financial instruments.

*Tools:*

### **6.1. Apply Other Proposed Reforms to Rental Market**

Support for transit-oriented development, land banking, and affordable housing subsidies ought to be applied to both the owner and rental markets. Given how sensible rental housing can be for the poor, making sure that land is available, affordable, and well-sited for rental housing would substantially help to provide more affordable options for Mexico's poorer citizens.

### **6.2. Replicate a Low-Income Housing Tax Credit**

In the United States, the Low-Income Housing Tax Credit (LIHTC) has served as a successful market-based approach to generate new affordable housing. The LIHTC program works by awarding housing credits to individual projects through the states. The developers sell the credits to investors for equity, which gives the investors a long-term tax credit and reduces the debt load of the housing development.<sup>248</sup> Since the LIHTC's adoption as part of the Tax Reform Act of 1986, the LIHTC has financed over 2.4 million new units, "account[ing] for most of the country's new rental housing affordable to low-income people."<sup>249</sup> Mexico could further engage its commercial banks in developing a rental sector by giving them the type of proven investment that LIHTC represents.

### **6.3. Develop Landlord Capacity**

Rental housing conditions in Mexico are presently quite poor and previous vertical housing developments have led to poor maintenance of communal spaces. In order to ensure that rental housing retains some level of decent quality, landlords and property managers will need to

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<sup>248</sup> "How Do Housing Tax Credits Work?" U.S. Department of Housing and Urban Development.

<sup>249</sup> National Council of State Housing Agencies. "Housing Credit Fact Sheet." February 24, 2011, 1.

receive technical assistance and access to scaled, professional maintenance services. These steps will provide a greater chance that rental housing for the poor will provide housing that is high-quality and financially sustainable.

### *Taking a Step Back*

While these reforms may pose exciting visions of the future, it is important to understand first that not all are immediately and simultaneously implementable. Realignment of subsidies (1.2), land banking (1.3), and even establishing a TOD fund (2.2) are relatively intuitive extensions of existing policy. The most transformative, though, are likely the tools to combat corruption and open the informal sector (3 and 5). In considering their options, Mexican policymakers will need to weigh the desire for immediate reform and long-term, more profound change. It is also important to address the presence of questions and uncertainties around many of these policies. These ideas may sound attractive on paper, but the issue of how to pay for the new subsidies and programs is not resolved. The different proposals create contradictions and trade-offs. Even with subsidy increases, improving the location and quality of working-class housing may make it less affordable. Such a result would be obviously undesirable. And though these proposals are designed with economics and political considerations in mind, some of them, like 2.1, do rely on planning. I have lambasted planning in the past, and these proposals may not fully counteract its history as an anti-poor process. The final concern is one of power. The proposals for taxation and eminent domain may run counter to existing constitutional mandates on state and federal powers. In seeking to both centralize urban development planning and give more fiscal independence to local governments, these proposals may muddy who has the ultimate power over the location and quality of affordable housing in Mexico.

## **IX. Conclusion**

We started our story with Jorge Arzave, a homeowner whose experiences represent the worst of the excesses of the pre-reform housing market near Mexico City. The conditions that he and others faced, of cheap, dense housing that was poorly built and terribly sited, was not a one-off tragedy. It was a predictable outcome of seven decades of housing policy and economic forces that have driven affordable housing to the periphery. From the early *jacales* of rural migrants to Mexico City during agricultural reform, to the INFONAVIT-financed tract housing of today, Mexico City has continued to sprawl further and further out in order to accommodate new generations of residents. Throughout that time, three different governments have played different roles in the growth of sprawl. The Distrito Federal has been a benevolent “limited city,” offering unprecedented services to locals and trying to keep out the poor. The State of Mexico has embraced new development with open arms and often open wallets. The federal government, through INFONAVIT, has increasingly matured housing finance to facilitate a mass homeownership society.

Having etched out an important, and as-of-yet not fully told, story of housing, I focused on efforts to improve the issues of location and quality in social housing. Recent reform has made significant progress in better aligning incentives to force more housing at least within the urban fringe. And it has done that mostly through subsidies, effective in the past, not unwise attempts to plan away economic realities. While more support is going to higher-quality housing through DUIS and home improvement loans, reform has not addressed underlying incentive issues, like taxes and corruption, that keep quality poor. In light of these actions, I proposed a series of reforms to further improve quality and location.

This paper contributes to the existing literature in several ways. While Monkkonen (2011) first described the “housing transition” in Mexico, this work explains that transition’s

implementation and impact on the Mexico City region. It is the first academic work to consider the recent housing crash and the resulting proposed new policies to reform the market, adding to several decades of housing research. This paper also brings to the fore the issues in the State of Mexico, which has largely been dismissed in the literature, apart from Iracheta (2004). Its policy proposals interject the role of political reform in guaranteeing the success of economic policies, whereas other contemporary reform proposals have sought to avoid the delicate subject of corruption (e.g., Herbert et al. (2012), SEDATU (2013)). The historical lessons of this paper also offer a unique perspective of the long-standing attempts to resolve housing problems through planning processes that either lack enforcement or hurt the poor. However, this paper admittedly can be criticized for not questioning the underlying belief within the Mexican political world that homeownership should be the central objective of housing, and even development, policy, though it does offer some steps for rental reform. Shiller says of overly-pro ownership housing policy in the United States,

There is, however, likely to be a limit on how far public policy should attempt to encourage homeownership. There are many sensible reasons for people to rent rather than own: people who cannot currently bear the responsibilities of household management, who are likely to move soon or have other plans for their time, should rent rather than own. Renting rather than owning encourages a better diversification of investments; many homeowners have very undiversified investment portfolios, and these investments are often highly leveraged. Moreover, creating too much attention to housing as investments may encourage speculative thinking, and therefore, excessive volatility in the market for homes. Encouraging people into risky investments in housing may have had bad outcomes. It is possible that some countries have overreached themselves in encouraging homeownership.<sup>250</sup>

Without a doubt, there are sound economic arguments to be made for not leading overwhelmingly with homeownership, and Shiller's comments are particularly apt for the case of Mexico. The social and policy developments in Mexico, however, are too far along for there to

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<sup>250</sup> Shiller, "Understanding Recent Trends," 19.

be a massive reversal back to a rental society. The job now is to make a poor, homeownership society one that offers affordable equity in homes that are good enough and accessible enough that they can serve as true *patrimonies para la familia*.

Other limitations to this paper are the result of holes in the collective knowledge about housing in this region. Fifty years since Frieden (1965) wrote his seminal work about the state of housing in Mexico City, there is still a lot to be learned. Though it is the place of the greatest growth and plays more of a role here than elsewhere, the State of Mexico is far too understudied. This paper also places much of its focus on INFONAVIT, as opposed to other agencies that form the alphabet soup of housing policy in Mexico. A focus on that agency is not unwarranted, given its centrality in the market and interesting story of reform. It is also the most written-about of the different agencies, and more in-depth analyses of the performance of other players would make valuable contributions to our understanding. More academic and advocate research into the operations of the big homebuilders and the relationships between them and the government would additionally contribute to our understanding, and give light to the crucial issue of corruption that today is largely whispered about.

While the historical lessons remind us of the seeming intractability of housing issues and there are limits to this analysis, the reforms that it proposes are achievable and vital. They are achievable because they build upon existing institutions, and vital because they go to the heart of the current problematic market conditions. They also try to balance the need to increase quality and siting, while trying to correspondingly increase subsidy. They bring attention to two areas that have been frequently discussed, but rarely improved: the informal sector's relationship to housing and the rental market. The reforms recognize that informality is not going to disappear sometime soon, and that Mexico should continue to approach the sector as a space for economic



growth, not regulatory restrictions, while rental units may better shield low-income, high-risk individuals from the vagaries of the market and is well-suited to dense development. Viewed critically, however, these reforms carry with them uncertain price tags, may still lead to increases in housing prices, and sometimes toe the line between helpful financial interventions and unhelpful, and likely unsuccessful, attempts to have planning try to solve all problems again.

Meanwhile, others have proposed, and will continue to propose, additional solutions for better quality and location, as well as more affordability. There are certainly more possible answers to the questions of housing in Mexico City. In considering those other possibilities, policymakers should ensure that the proposals align all stakeholder incentives towards better location and more quality, rely on market incentives instead of problematic planning principles, and build up institutions to promote cleaner, fairer, and more efficient governance. Reforms that can tackle all three areas seem most likely to enact dramatic change.

An effective housing policy has ramifications beyond individual homes or the housing sector at- large. Sprawling housing places tremendous pressure on other policy objectives. As the *2010 Current State of Housing in Mexico* report identifies in explaining the Redensification Guide that the government has produced, “the extensive model of growth of Mexican cities, characterized by horizontal buildings at low densities...generates negative impacts to natural resources and growing costs for the provision of land, infrastructure, housing, equipment, goods, and utilities.”<sup>251</sup> A housing system that emphasizes better quality and better location holds the promise of a more efficient government and country. Further, because housing has been placed at the center of the nation’s economic empowerment agenda and the Mexico City region is vital to the national economy, success in housing the region can have tremendous national economic implications. One of the early propositions of this paper was that Mexico has found itself trapped

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<sup>251</sup> *Estado Actual de Vivienda en Mexico*, xv.

in the middle-income range, with low growth predicted moving forward.<sup>252</sup> Others have found that inequality, and institutions that reinforce it, have furthered slowed movement towards the developed world.<sup>253</sup> Sustainable mass housing can create wealth for a much broader set of the Mexican population.

Jorge Carlos Ramírez Marín, the secretary of SEDATU, has said, “The 20<sup>th</sup> Century in Mexico was considered the century of the Agrarian Reform and the 21<sup>st</sup> Century should be century of the Urban Reform.”<sup>254</sup> Such reform should begin in the Mexico City region, particularly the State of Mexico. There, in the outskirts of this massive urban region, a 16-million-person state is the frontline for urban growth. However, its economic and social growth has been hampered by a laissez-faire approach to cheap development. If Mexico is to thrive in the century of Urban Reform, it needs to unleash the economic potential of the State of Mexico, combating corruption, sprawl, and unlivable conditions along the way.

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<sup>252</sup> Felipe, et al., “Tracking the Middle-Income Trap,” 31.

<sup>253</sup> Guerrero, Isabel, Luis Felipe López-Calva, and Michael Walton. “The Inequality Trap and its Links to Low Growth in Mexico.” November 7, 2006, 43.

<sup>254</sup> Lara, Carlos. “Sedatu prevé concretar un millón 100 mil acciones de vivienda en 2014.” *La Prensa* March 6, 2014.

## APPENDIX A: MICROECONOMIC HOUSING MODEL

This appendix provides the mathematical underpinning of the housing model described in Section II.

The model begins with a simple hedonic index with a series of characteristics  $h_i$ , that can be believed to effect the price of housing. Segmentation in the market can thus be explained through a difference in one such characteristic.<sup>255</sup>

$$(1) \quad p(H) = p(h_1, \dots, h_n)$$

Subject to certain market constraints, buyers and sellers engage in competitive market behavior that results in the production and consumption of housing units with the desired characteristics.<sup>256</sup> The first constraint is on household consumption. A household's utility function will be represented as:

$$(2) \quad U = U(Z, H) \equiv U(Z, h_1, \dots, h_n)$$

Where U is utility and Z is all other goods. That utility function will be subject to a budget constraint:

$$(3) \quad Y = Z + p(H)$$

Taking housing conditions (H), utility (U), and income (Y) into consideration, individuals will settle on some bid, B, for housing. This market for bids, then, yields important information about the housing market, as individuals segment by quality, subject to their constraints.<sup>257</sup> Looking back at the original hedonic model, each  $h_i$  describes the various commodities embodied within a housing unit that the consumer must decide between, be it bedrooms or the local school. Each  $h_i$

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<sup>255</sup> Rothenberg, et al., *The Maze of Urban Housing Markets*, 51.

<sup>256</sup> Ibid., 54.

<sup>257</sup> Ibid., 57.

has its own supply and demand functions, and the relative weight of one characteristic over the other to an individual may shift an individual's choices within other commodity "submarkets."<sup>258</sup>

Housing can be both bought and rented and that switching from one's current housing to another has substantial costs. For us to understand the impact of these effects on the market, let us first consider housing's value as a consumption good. A housing unit can be described as:

$$(4) \quad L = (H, [R], AG, D)$$

Where

*L = housing unit*

*H = quality level*

*[R] = a matrix relating various housing attributes*

*AG = age of structure*

*D(0, 1) = tenure status where 0 is rental and 1 is ownership*<sup>259</sup>

We expect individuals then to purchase new housing when there occur changes in the condition of their home, their wealth, and the larger market structure. We can represent this as:

$$(5) \quad \Delta U_{0i} = D[\Delta Y^i(T_0^i), \Delta(p_0/\hat{p}_i)(T_0^i), \Delta L(T_0^i)]$$

Where

*\Delta U\_{0i} = the expected change in housing utility for household i between its level at the outset of the present occupancy and that at the present time t<sub>0</sub>*

*T<sub>0</sub><sup>i</sup> = the duration of household i's present occupancy at time t<sub>0</sub>*

*\Delta Y<sup>i</sup>(T<sub>0</sub><sup>i</sup>) = the accumulated change in household i income as a function of present occupancy duration T<sub>0</sub><sup>i</sup>*

*\Delta(p<sub>0</sub>/\hat{p}\_i)(T<sub>0</sub><sup>i</sup>) = the accumulated change in the ratio of prices of household i's present unit p<sub>0</sub> and its currently perceived optimal unit, \hat{p}\_i*

*\Delta L(T<sub>0</sub><sup>i</sup>) = the accumulated change in the character of the structure during the present occupancy (both in terms of renovation/expansion and condition changes).<sup>260</sup>*

We must also account for the cost of switching.

$$(6) \quad pr_0^i(D) = g^i(\Delta U^i(T_0^i), SC_0^i)$$

Where

*pr<sub>0</sub><sup>i</sup> = the probability that household i will become an active market participant in t<sub>0</sub>*

*SC<sub>0</sub><sup>i</sup> = i's perceived expected cost of successful search and other occupancy change cost at t<sub>0</sub>*

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<sup>258</sup> Ibid., 63.

<sup>259</sup> Ibid., 70.

<sup>260</sup> Ibid., 82.

So, a household's decision to demand new housing will depend not only on its personal change in fortunes and expected increased utility from the new housing unit, but also on how hard and costly it is to switch. When it decides between renting and owning, it decides between the welfare associated purely with consuming the good over several periods:

$$(7) \quad W = W[U(H_1, Z_1), U(H_2, Z_2), \dots]$$

Where

*W = welfare function over x periods*

*U = welfare function of a household over one period, as a function of housing consumption (H) and all other consumption (Z)<sup>261</sup>*

And the welfare associated with the investment in housing:

$$(8) \quad I = FP_H H$$

$$(9) \quad F = 1/(G^*(1-c))$$

Where

*I = investment value*

*F = capitalization factor*

*P<sub>h</sub>H = the price per unit of housing services multiplied by the housing services provided*

*G = r +  $\overline{b}$*

*$\overline{b}$  = expected increase in the value of the asset over time*

*C = capital transactions costs<sup>262</sup>*

The decision on whether to rent or own will be determined by comparing how much the individual values ownership and the resulting investment value of homeownership versus the transactional costs of actually owning a home.<sup>263</sup>

On the demand side, we can examine the market incentives for the unit owner and the builder to place a unit on the market, build new units, or convert their units to another submarket. Important to the supply-side is the role of timing. While a builder takes a long time horizon in their decisions, a landlord can be said to have a *market period* during which the unit is for-sale

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<sup>261</sup> Ibid., 94.

<sup>262</sup> Ibid., 100.

<sup>263</sup> Ibid., 101.

and not easily changed. In that period, the owner will set a reservation price, the minimum acceptable price of sale:

$$(10) \quad P_0 = \max [P_T(1 + r)^{-T} - \sum^H C_t(1 + r)^{-t}]$$

Where

$P_T$  = the expected selling price of the unit when sold during time  $T$

$^H C_t$  = the marginal cost of holding unit vacant

$r$  = the owner's discount rate, ostensibly the market interest rate.<sup>264</sup>

This model tells us that the owner responds not only to the value of the home embodied in its expected price, but also to the strength of the market. If he expects the unit to sit and incur costs because of a weak market, the reservation price drops. An owner-occupier faces similar constraints, but is able to add the options to continue to occupy or to rent out. For them, they must decide between  $U_{\text{stay}}$ ,  $U_{\text{rent}}$ , and  $U_{\text{vacate}}$ . The builder, meanwhile, faces his own incentives as to whether to increase the supply of housing:

$$(11) \quad \begin{aligned} \max \gamma &= [n (MV(H) - {}_N C(H) + \gamma' (T - n {}_N C(H)))]/T \\ \text{Subject to } T &\geq n {}_N C(H) \end{aligned}$$

Where

$\gamma$  = builder's rate of return

$n$  = number of housing units of optimal investment

$MV$  = per-unit value of dwellings

${}_N C$  = cost per unit of dwellings

$\gamma'$  = builder's rate of return on nonhousing assets

$T$  = builder's net assets<sup>265</sup>

Faced with a liquidity constraint, the builder chooses to maximize his rate of return for the housing that he builds. Changes in dwelling value or cost of building that value will significantly influence whether and what he builds. An additional action that owners can take is to convert their properties from one submarket to another. They can degrade the quality to exact rents from

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<sup>264</sup> Ibid., 132.

<sup>265</sup> Ibid., 135.

the poor, divide rooms to rent to more people in one building, or they can choose to improve the property.<sup>266</sup> They face the following cost function in doing so:

$$(12) \quad {}^{\alpha}C_{ijk} = C_k(H_i, [{}^{\alpha}R]) + C_M^{ij}[M_k([{}^{\alpha}R], {}^{\alpha}AG)] \\ + C_U(H_j, [{}^{\alpha}R], {}^{\alpha}AG) + C_T[M_k(H_i, H_j)]$$

Where

${}^{\alpha}C_{ijk}$  = total cost of converting unit alpha from submarket I to submarket j through method k

$C_k$  = opportunity cost embodied in the unit

$C_M^{ij}[M_k]$  = the cost of modifying unit from I to j via method k

$C_U$  = the discounted present value of cost of maintaining unit at the destination submarket j

$C_T$  = the opportunity cost of the time taken to convert unit from I to j (when unit is out of commission)

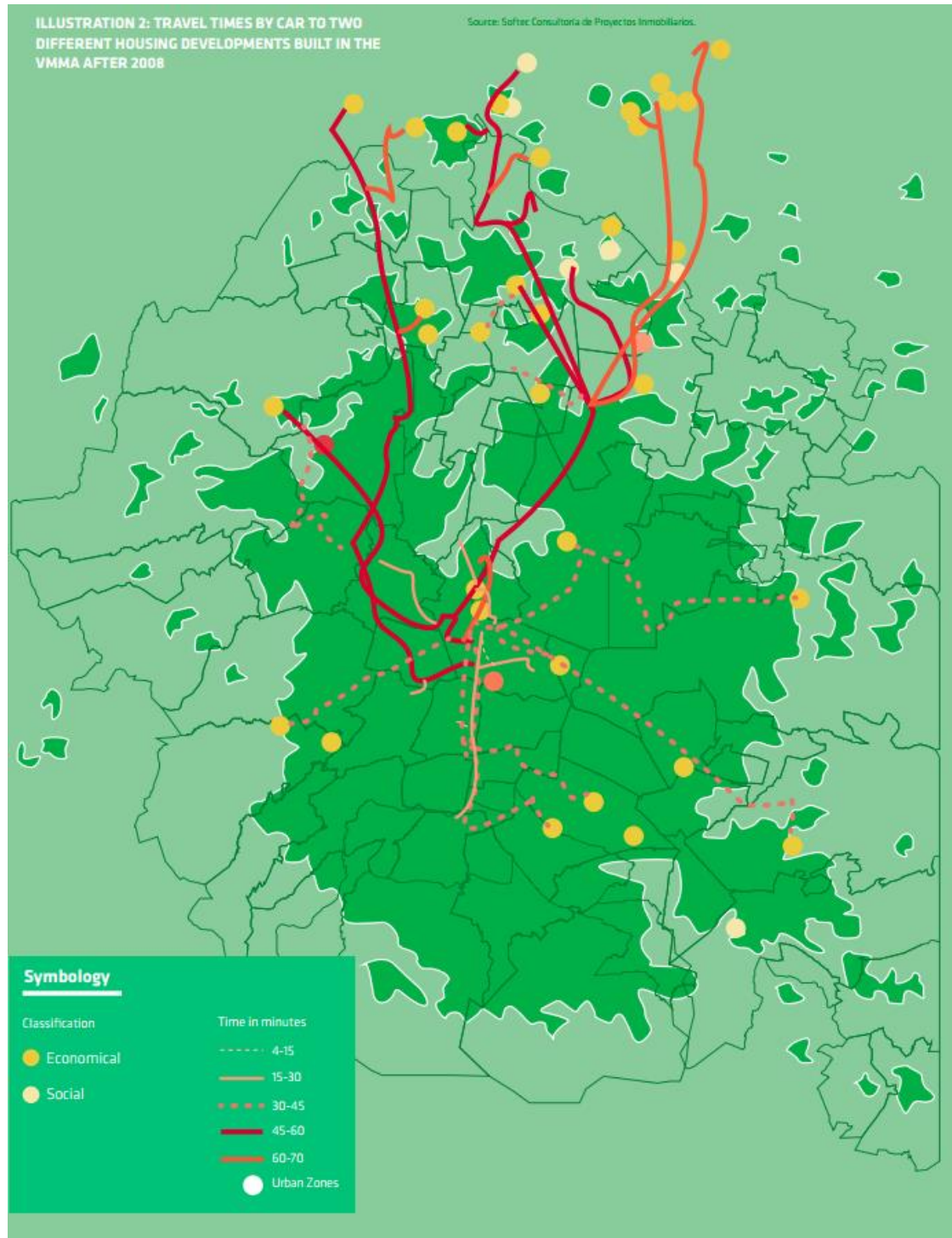
In this way, we have described the preferences and choices of consumers, owners, and builders.

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<sup>266</sup> Ibid., 139-140.

## APPENDIX B: TRAVEL TIMES IN MEXICO CITY

The ITDP report on Transit-Oriented Development in Mexico City produced a compelling image of sprawl, reproduced below.<sup>267</sup>



<sup>267</sup> Medina Ramirez and Veloz Rosas, *Transit Oriented Development*, 36.



## APPENDIX C: WEALTH IN MEXICO

This paper frequently discusses “working-class” or poor Mexicans. Below are two charts, prepared by the Wilson Center, that elucidate income distribution and poverty in Mexico.<sup>268</sup> In the first, each income decile shows the average quarterly income of that segment of the population. On Page 63, the government sets an income restriction for some housing at around 2,900 pesos per month. That would fall within the poorest decile of the population.

**Table 1**  
**Total Household Income by Deciles of the Mexican Population**  
(Pesos; Average Quarterly Income)

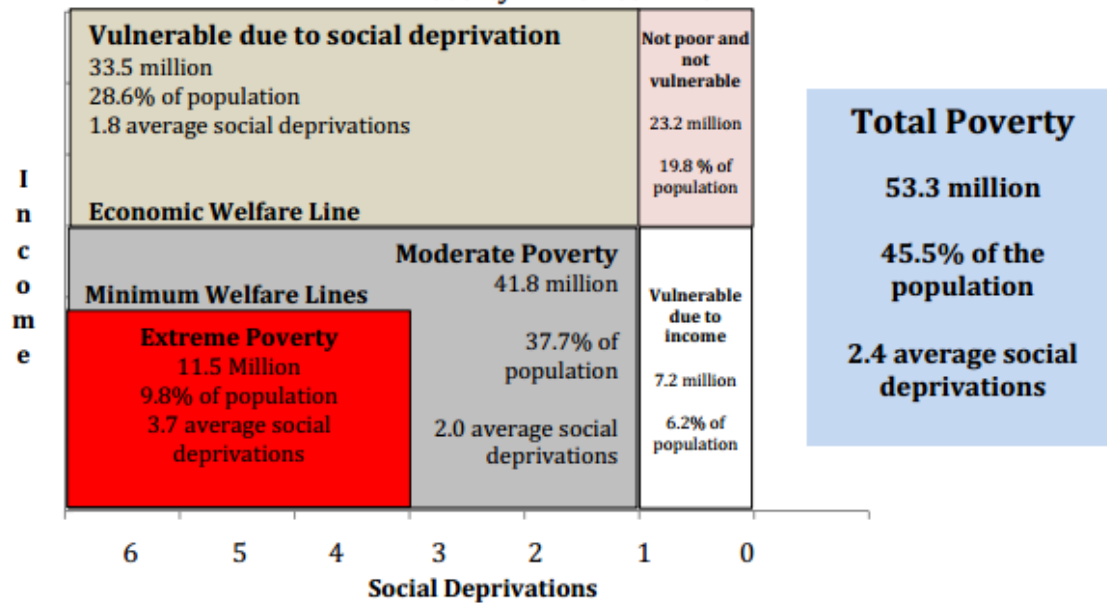
Household Decile	National Total			Change	
	2008	2010	2012	2008-2010	2010-2012
<b>TOTAL</b>	<b>42,865</b>	<b>37,574</b>	<b>38,125</b>	<b>-12.3</b>	<b>1.5</b>
<b>I</b>	7,136	6,633	6,997	-7.0	5.5
<b>II</b>	12,460	11,673	11,794	-6.3	1.0
<b>III</b>	16,792	15,611	15,734	-7.0	0.8
<b>IV</b>	20,986	19,650	19,513	-6.4	-0.7
<b>V</b>	25,628	23,973	23,914	-6.5	-0.2
<b>VI</b>	31,501	29,059	28,862	-7.8	-0.7
<b>VII</b>	39,381	35,605	35,570	-9.6	-0.1
<b>VIII</b>	50,084	45,089	44,849	-10.0	-0.5
<b>IX</b>	69,159	61,133	61,014	-11.6	-0.2
<b>X</b>	155,525	127,313	133,003	-18.1	4.5

Note: Income deciles result from ranking all households in the population in ascending order according to income, and then dividing the population into ten equal groups, each comprising approximately 10% of the total population. The first decile contains the poorest 10%, and the tenth decile contains the richest 10%. Source: INEGI.

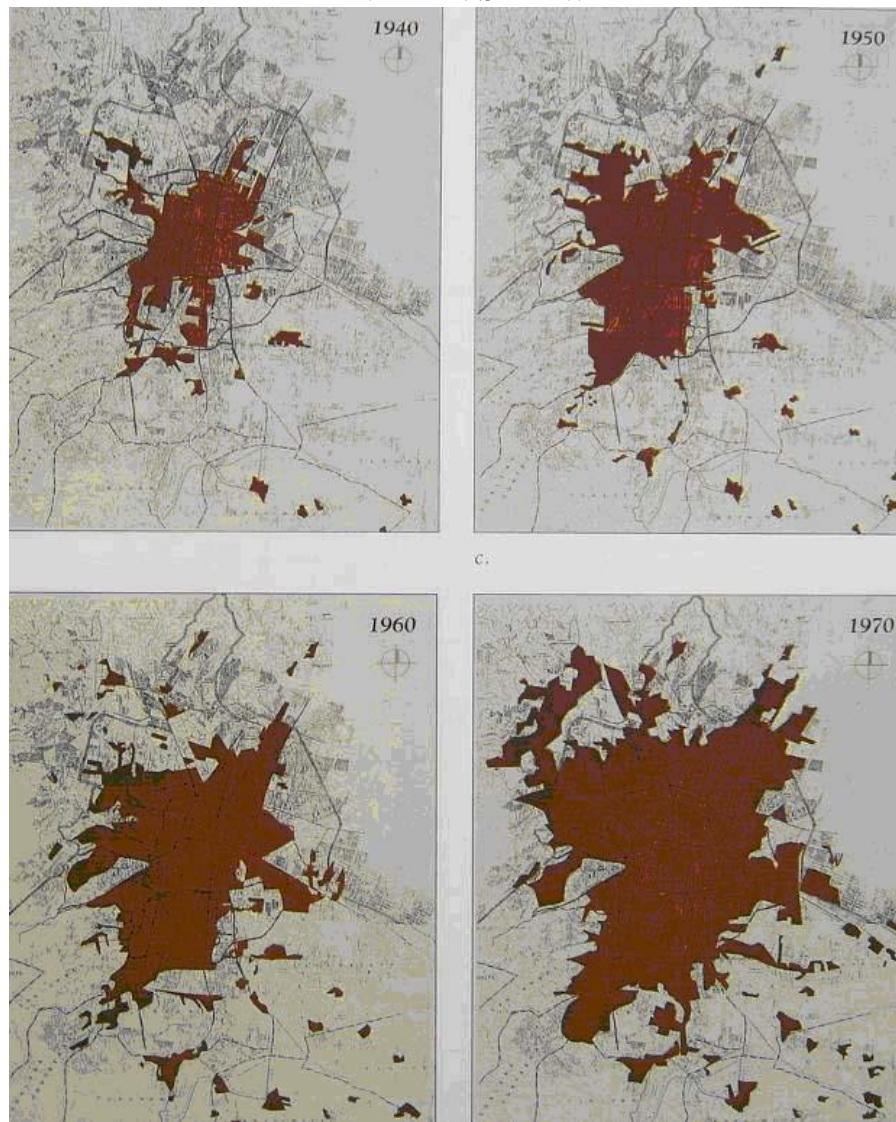
The second chart explains the material poverty and social deprivation in Mexico.

<sup>268</sup> Wilson, Christopher and Gerardo Silva. “Mexico’s Latest Poverty Stats.” Wilson Center. 2013.

**Figure 2**  
**Poverty in Mexico in 2012**



#### APPENDIX D: SPRAWL<sup>269</sup>



#### ACKNOWLEDGEMENTS

I'll keep this part short, at least. Thanks to Cynthia Horan, for her excellent advising and questions. Thanks to Víctor Borrás, Araceli Olivos, Paavo Monkkonen, and others for speaking with me about housing in Mexico. Thanks to my guide, Jonas, for touring me around the State of Mexico. Thanks to my parents for helping to fund the trip. Special thanks to Mitch Berns for accidentally planting the seed for my thesis over Pepe's Apizza.

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<sup>269</sup> Velázquez Mejía, Osvaldo. "La zona metropolitana de la Ciudad de México."

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