1. Introduction

Rising housing costs in various parts of the world are challenging people's well-being—fueling anger and resentment. This is especially true for renters and young families who are new to the housing market and didn't benefit from past increases in property values. The reasons for this global housing affordability crisis are varied, and therefore, solutions will necessarily be heterogeneous. In my view, five main theories account for the reasons behind this phenomenon.

First, growing income inequality in many countries signifies that the wealth of low-income and middle-class populations has stagnated (Alvaredo et al., 2018). This problem is not necessarily attributable to inefficiencies in the housing market (Glaeser and Gyourko, 2017), and may require broader redistributive and educational policies.

Second, automatization, IT, and expanded global supply chains have accelerated the productivity growth of manufactured tradable goods with respect to services and non-tradables. Real estate is the ultimate non-tradable good (Bardhan et al., 2004): construction is typically local and desirable land is unmovable. Therefore, a sort of "cost disease" (Baumol, 1993) may partially be behind the increasing expenditure shares on housing consumption (Albouy et al., 2016). Also, a few prominent cities have experienced inflation of construction costs above their national averages (e.g., Gyourko and Saiz, 2003).

Third, some of the most popular cities—with better amenities, access to education, and high-skill better-paying jobs—have disproportionally attracted residential demand (Glaeser et al., 2001; Glaeser and Saiz, 2004). Several of them are in coastal or mountainous regions, which limits their potential for geographic expansion (Saiz, 2010). The high income-elasticity of demand for amenities, together with the fact that they grow endogenously in attractive areas (Guerrieri et al., 2013), generates a virtuous cycle of ever-increasing concentration of housing demand.

Fourth, not-in-my-backyard (NIMBY) anti-development pressures have grown as societies mature worldwide. Increasingly strict municipal policies and regulations make building new housing at high densities very difficult. In attractive cities, land values have been escalating, and modest-quality homes are almost impossible to build anymore.

Fifth, a global savings glut may have both decreased mortgage rates and increased the appetite of a growing base of global investors to acquire real estate, absent better alternatives (Badarinza and Ramadorai, 2018). There is strong global evidence that housing price growth tends to accelerate with credit expansion (Cerutti et al. 2017).

The solution to housing affordability problems requires a combination of economic growth, local entrepreneurship, and improved family agency. Municipal and national policies are critical to empower families, communities, and ethical real estate developers. Governmental and local institutions that fairly redistribute resources to equilibrate purchasing power are also needed.

In this paper, I focus on governmental action and discuss potential affordable housing policy options. This is not because I believe that the public sector is solely responsible for the solution of the affordability conundrum. On the contrary, organic, bottom-up innovation from firms and communities are bound to be as important. However, governments set up the rules and have been part of the problem in some countries.

A disproportionate share of research in this area in Economics has focused on US programs (e.g., Collinson et al, 2015; Metcalf, 2018). Nonetheless, there is a large extant literature about broader international housing policy and best practices. The general conclusion from practice and research is that there is no single- bullet solution to the affordable housing problem. Many institutions must be properly designed and work in sync for housing systems to produce quality housing in sufficient quantities and at affordable prices. I will not dwell here on fundamental legal, macroeconomic, and national reforms and refer the reader to previous work such as: Angel (2000); Apgar (1990); Buckley and Kalarical (2005, 2006); Falk and Ruslin (2020); Malpezzi and Sa-Aadu (1996); Malpezzi (1999); Malpezzi (2014); Mayo and Angel (1992); Mayo (1999); Phang (2018); or Rojas (2015,2019).

Once the basic institutions, laws, and regulations are in place, complementary policy instruments are necessary. It is better to think of different programs as tools to be deployed as needed in specific circumstances and geographies. Each specific tool is only useful if used in the appropriate context to attack the relevant problems that such tool can address, but not others. The combination of tools—sometimes in alternative roles, sometimes in complementary ones—tends to yield better outcomes. The process is an artisanal one, and often requires experimentation from national, regional, and municipal governments, as well as entrepreneurship and creativity from local actors—consumers, developers, and communities. Alternative packages of policy programs may yield good outcomes under the right circumstances—or poor ones under unsuitable ones.

I do not itemize each useful housing policy tool, but I can describe their basic parameters and foundations. I also provide several case studies that can inform the discussion. This I do as follows: In section two, I develop a characterization of housing programs in terms of four critical dimensions: local versus national implementation; supply versus demand orientation; public versus private ownership; and de jure versus de facto impact. I also discuss the conflicts between the alternative objectives that policymakers and the public seek out to achieve. Section three describes the main typologies of affordable housing interventions. Section four exposits case studies that combine aspects of the main housing policy typologies, and that I would like to highlight. Section five concludes.

2. Affordable Housing Policy: Goals and Dimensions

The starting point will be that housing policy is necessary to combat deficient housing conditions, especially among the poor. Note that one could argue instead for cash transfers large enough to cover housing payments (Rosen, 1985, Aaron and Von Furstenberg, 1971). However, taxpayers may have opinions about what represents successful societal outcomes, including minimum levels of housing consumption and quality (Thurow, 1974). In addition, the housing market is abundant with externalities and local oligopolies—as in NIMBY opposition to land development for new housing (Fischel, 2005; Dehring et al. 2008). Furthermore, policy is sometimes necessary to undo the effects of previous institutional barriers. And—in some cases—recipients of cash transfers may not consider the welfare of everyone in their family (Schady and Rosero, 2008). In other cases, behavioral problems do not allow households to reach optimal residential outcomes even in the presence of sufficient cash transfers (Chetty, 2015).

Affordable housing tools are diverse, involving alternative programs and approaches. However, governments and the public pursue alternative objectives that—even if well-intentioned—may conflict with one another. Hence, prior to choosing specific policy tools, practitioners need to be aware of their ultimate goals and the relative weights of each goal when tradeoffs are necessary. In such cases, it is better for policymakers to deploy at least as many policy tools as there are policy objectives—following the so-called Tinbergen rule (Tinbergen 1952, 1956). The rule is intuitive in the context of a linear programming planning problem, where we have one policy "independent" variable (X) with which to effect two "dependent" policy outcomes (Y, W):

$$Y = aX + c \,;\, W = dX + f$$

Generally, we cannot find a policy solution (X^*) that simultaneously attains a pair of specific objectives (Y^*, W^*). However, if we add an additional policy tool Z:

$$Y = aX + bZ + c \,;\, W = dX + eZ + f$$

At (Y^*, W^*) we obtain a system with two equations and two unknowns that can be solved through the solution (X^*, Z^*). In the worst-case scenario, where one of the solutions is negative, we can always set its value to zero. More policy tools always yield weakly preferred solutions. Broadly speaking, the lower the number of policy options or "levers," the more severe the tradeoffs between alternative objectives with high degrees of conflict—or substitutivity. For instance, if the objective of siting affordable housing in a neighborhood generates negative externalities—e.g., noise—the government may use an additional tool—for instance, sound-cancelling building materials between walls. Otherwise, tradeoffs become stark: the more the number of affordable housing units, the worse the noise, and vice versa.

2.1. Conflicting Goals in Affordable Housing Policy

It is tempting to conceptualize housing policy as a fully rational process: in this view, policymakers pursue a set of goals mandated by the citizens—a social welfare function a la Bergson-Samuelson (Bergson, 1938)—subject to explicit tradeoffs, budgetary constraints, and limitations in terms of project feasibility. A well-prepared technocracy is charged with presenting options to the public, and tasked with executing democratic mandates ethically and professionally. The reality is often different, as policymakers do not always have the necessary information to make informed choices. And forming broad policy consensuses is not easy (Arrow, 1951). In fact, many governments impose their own ideological or personal agendas, disregarding empirical evidence and the diversity of opinions of their citizens. Incompetence, corruption, clientelism, and partocratic interest are not unheard of in policymaking (e.g., Maluleke et al., 2019). Additionally, in developing countries, the tax base for housing policy may not be wide enough due to low incomes and the extent of the informal economy (Arnott, 2008).

In this section, I disregard many of these problems and focus on a common caveat of housing policy: The public and policymakers have goals and expectations about a great many different issues. Desired outcomes are not always explicit, and the trade-offs between them are often poorly understood. What are the objectives of housing policy? Are they contradictory? In the following paragraphs, I discuss some of the conundrums that usually obfuscate discussions about housing policy.

2.1.1. Affordable Housing Versus Income Mixing

Achieving mixed-income residential neighborhoods and maximizing the number of affordable dwellings represent alternative policy goals that may be at odds. Some inclusionary zoning regulations—enforcing the provision of affordable units in market-rate projects—mandate the provision of a few homes for low-income individuals in luxury units at very high cost. However, this may divert funds that could have been directed to building more housing in middle-class neighborhoods. Conversely, the mass production of dwellings at an extremely low cost may entail sacrifices in the quality of the neighborhoods where new housing is sited. This happens in developments built in areas that do not have public services. Middle classes tend to shun such developments. The consequent lack of social mixing implies that families may end up segregated in low-income neighborhoods, a situation that tends to beget poor social outcomes (Wilson, 1984; Chetty, Hendren, and Katz, 2016).

Practitioners have turned to mixed-income developments to address the problems associated with concentrated poverty and neighborhood disinvestments, such as joblessness and drug-related violence. However, there is disagreement about their benefits. On the one hand, proponents see mixed-income development as a steppingstone toward building better neighborhoods that ameliorate poverty. Some observers also claim that mixed-income projects improve the quality of housing, services, and amenities, compared to what is available in homogeneously poor areas.

On the other hand, mixed-income developments have faced significant pushback from some affordable housing advocates. To achieve income mixing, for-profit development is necessary to cross-subsidize below-market-rate units. Large mixed-used developments oftentimes involve public-private projects (PPPs). Critics suggest that these developments may exacerbate gentrification and disproportionately benefit landowners (Reid and Sandeford, 2017). Other critics argue that the outcomes of poor families in mixed-income neighborhoods are not always as positive as they seem (Josephs, 2011). These latter criticisms may become irrelevant as we learn more about which particular attributes of a mixed-income neighborhood help improve social mobility (Chetty and Hendren, 2018).

2.1.2. Affordable Housing Versus Site Quality

Regardless of the degree of income mixing, securing a good site is crucial to guarantee a successful affordable housing development. Projects built in separate complexes or isolated areas– which make it difficult for communities to adjust and integrate—tend to fail (Ackerman et al., 2016). Affordable-housing residents should be able to reach jobs in reasonable commuting times. Moreover, families should have access to schools and vital services, and users should be able to connect with the surrounding communities. Funding initiatives sometimes incentivize projects in distant neighborhoods over developments in centric ones. Finding appropriate and available land on which to build apartments in a location that follows best practice is a challenge. Because the cheapest locations tend to be distant ones, maximizing the number of affordable housing units is usually at odds with ensuring better outcomes for the families moving into new developments. To minimize these tradeoffs, transportation, employment, and local infrastructure policies should be part of the affordable housing policy mix.

2.1.3. Affordable Housing Versus Local Economic Development

In some cities, affordable housing efforts are conflated with local economic development policies—geared toward improving physical and business conditions in particular communities. An alternative approach focuses on families and their outcomes. The former policies tend to emphasize investments in local infrastructure and place-based subsidies or public investments. The latter tend to favor financial and behavioral support for family choice and mobility. There is considerable debate and uncertainty about how neighborhood and household-level dynamics interact; albeit recent thinking has re-focused on helping families move to better communities.

While reasonable observers may disagree on the benefits of each type of housing policy, they should all agree on their costs. Siting affordable subsidized greenfield buildings in high-poverty areas—such as high-rises in the inner city—may be more costly than building more popular products in brownfield middle-income areas that have infrastructures and good accessibility.

Whether building subsidized affordable housing revitalizes a neighborhood is contingent on the project. Ellen (2008) argues that new affordable housing in rental buildings will have a more positive impact on the destination community if: 1) the project replaces an existing dis-amenity; 2) the neighborhood is not already afflicted by extremely concentrated poverty; 3) the project is sizable enough to spur revitalization, but not large enough to allow segregation of low-income neighbors; and iv) the project is sited and developed using municipal—as opposed to federal—assistance.

Attention should be put on the unintended consequences and on the specific design of place-based subsidies (Kline and Moretti, 2014; Alderr et al. 2018). However, I am skeptical about making final judgments about whether placed-based or individual subsidies are preferable. These are two different tools that are best used alternatively or in combination, contingent on the situation. Transfers to families may not help them much if supply is inelastic due to the lack of investments in new local infrastructures. On the other hand, building a new neighborhood does not achieve anything if nobody wants to live there.

The exact combination of family versus place-based investments should depend on the specific cost-benefit of each program. Nonetheless, as a general rule-of-thumb, place-based investments are best left to regional or municipal governments, should seek to complement market incentives, increase the number of choices available to families, and must consider the democratic public interest at large. They certainly should not reflect discretionary choices of the leader or policy cadres.

2.1.4. Affordable Housing for Families versus Ideology

Blind ideology can be an impediment to effective housing policies. Vigorous debate about which policies work more effectively or are better targeted is important. Such debate should be supported by evidence and research. Discussion and alternative views are never problematic. However, strict ideological adherence to principles that are not necessarily agreed upon through the democratic process, intolerance of others' views, disregard for the evidence, lack of regard for the opinions of those affected by the policies themselves, and emphasizing ideological purity over the welfare of people who are served by the programs do not represent good praxis.

For instance, privatization of public housing may or may not work better than the feasible alternatives depending on the circumstances. While competition tends to induce better outcomes, privatization does not always achieve more competitive environments, or may be associated with poor outcomes if incentives are not well-aligned. Conversely, government-driven production does not necessarily lead to better outcomes, as in the example of Angola's Kilamba city—a massive housing development that has often been considered a white elephant (Keeton and Nijhuis, 2019).

While housing policies must be determined through the democratic process, a technocratic cadre of well-trained professionals is required to carry them out effectively. Albeit not sufficient by itself, professionalism is a necessary condition for success in the production of affordable housing. Lack of professionalism and managerial skills—either guided by ideological motivations or misguided by good intentions—inevitably leads to poor outcomes, as pointed out by Fahey (1999) regarding the Irish social housing system. Fahey (1999) also singles out to social order problems as major outstanding roadblocks to the success of social housing in Ireland. Vols (2013) reports increasing such problems in the Netherlands, and evidence of the issue in Australia, Belgium, Canada, China, Finland, Germany, the United Kingdom, and the US.

The problems derived from the antisocial behavior of a very small minority of constituents cannot be ignored when formulating policy and, especially, when managing affordable housing programs. Well-intentioned observers sometimes dismiss these problems as products of structural inequalities and advocate for solving the latter first before "blaming the victims"—as opposed to addressing the issues directly. However, such an ideological view negates the fact that the vast majority of recipients of housing subsidies also condemn antisocial behavior and espouse values that could be qualified as middle-class ones. After all, it is low-income families who are predominantly on the receiving end of such antisocial behaviors. Varady and Schulman (2007) argue that both in the US and Finland only 5 to 15 percent of public housing occupants generate most antisocial behavior. If one is serious about listening to the policies' target populations, antisocial behaviors by small groups bullying local communities should not be allowed.

For instance, after the redevelopment of Orchard Park—a previously failing public housing complex in Boston— Shamsuddin and Vale (2017), interviewed a tenant who argued that "*certain undesirable people were weeded out because of redevelopment, which is good*." This sentiment was echoed by most of their respondents and pointed out by locals as one of the most important factors in the success of the revitalization of this community. Similarly, homeowner residents of the Ciudad Verde development in suburban Bogota—who used to live in informal developments prior to getting access to formal housing—mostly emphasize the need for a quiet life and have adopted middle-class values—such as the need for privacy, the condemnation of antisocial behaviors, the promotion of civic virtue and politeness—which they deem as very important for the success of the housing project (Hurtado, 2020).

2.1.5. Affordable Working-class Housing versus Bottom-of-the-pyramid

Other conflicting goals in affordable housing have to do with targeting. Some people believe that programs should target low-income populations, while others extend their reach to workforce housing in the lower-middle through upper-middle income range. Many governments around the world have emphasized covering the needs of public servants, a critical constituency that is close to the policy circles—as in the case of Ghana (Arku, 2009).

Means-testing represents a practical problem because the high rates of informality in many countries make it difficult to measure income. Policies and laws that means-test based on current reported taxable income may be helping young, upwardly mobile individuals in formal jobs with considerable lifetime wealth. To reach those at the true bottom of the pyramid, we require better measurements of income and needs. Colombia's "Semillero de Propietarios" is an interesting case study because this program prompts families with jobs in the informal sector to make regular payments into savings accounts. Their payment history is recorded by banks, allowing the financial system to underwrite their future credit risk (Malagón and Duque, 2022).

In some developing countries, targeting can pose true ethical dilemmas. Many more middle-low working-class families may be helped with the resources available. This is the case where households are marginal to the housing programs, and modest subsidies—say at 10 percent of the value of the home—are sufficient to move them to decent housing. Very poor households may be inframarginal to such programs—for instance, requiring full subsidization at 100 percent of housing cost. Even then, their housing outcomes may be worse—e.g., the family does not have the funds for maintenance and upkeep of their fully-subsidized homes (Van Zandt and Rohe, 2011). In this example, policymakers would be forced to make a decision between helping ten low-income families versus one extremely poor household.

In this essay, I make the case for targeting from the bottom up, focusing on the very poorest, and moving up the ladder as much as resources allow for. This is a most defensible strategy in developed countries, at incomes per capita above $10,000. In these cases, policymakers need to design programs with an eye on their long-term sustainability. Recipient households need to be able to confront the current *and future* private expenditures associated with the program.

Nevertheless—in less developed countries—one might contemplate focusing on the families living in informal housing that are the cheapest to upgrade into formal dwellings. Then one could move down the ladder until resources are exhausted—to maximize the number of families who are placed in decent homes.

2.1.6. Affordable Housing versus the Social Right to Expensive Cities?

Some cities have become more attractive due to their environmental qualities, good urbanism, job opportunities, stronger educational institutions, walkability, and access to amenities (Glaeser, et al. 2011; Carlino and Saiz, 2019). Other things equal, mobile households should be willing to pay a higher proportion of their incomes to live in areas with better quality of life. Consider, for instance, two hypothetical similar young German couples with the same education and income prospects. One of the couples recently moved to Berlin, where they pay €7,530 per square meter to buy a home in the center; the other went to Dresden, where centric homes sell for €3,900 per square meter. The first couple may pay 40 percent of their income on housing, while the latter pays only around 25 percent of their earnings—even though salaries in Dresden are 20 percent lower.

According to conventional policy metrics, the couple living in the capital is more "house constrained" and perhaps could be deemed as more deserving, using current public assistance benchmarks. However, to what degree should the first couple effectively be entitled to more public help, given that they chose to live in the more expensive city? Should residents in the other cities pay higher taxes to assist those who move to more expensive ones? Is residing in the central areas of Berlin, Barcelona, New York, Sydney, Mexico City, Santiago de Chile, or Shanghai a social right? If so, who qualifies for such a right?

These are hard questions because local populations include a mix of highly-mobile households—able to make conscious choices about where to live and how much to spend on housing—and less-mobile folks, who feel powerless to counter rising housing costs. Less-mobile families may face devastating losses in social networks if forced to move out of their current cities. Inasmuch as housing affordability in the most expensive markets is an important issue, a moderate policy view on this issue might espouse: 1) that policies and laws to ameliorate unaffordability in the most expensive cities should focus on the poor and least mobile; 2) that priority should be given to long-term residents, who have stronger roots and a more established right to the city.

2.2. Housing Policy Dimensions

Once we have clear policy objectives, another set of challenges relates to choosing programmatic tools. There are hundreds of specific housing policies. My objective is not to itemize them all, but to provide critical elements for their analysis. To start with, I focus on four of the main dimensions along which we can define the implementation of alternative policy interventions.

2.2.1. Local versus National

The first dimension is spatial. Housing policies and regulations are implemented at different geographic levels. Public housing is typically provided by local municipalities or regional governments. Other interventions—such as interest rate subsidies—originate from the federal government.

Local programs can burden municipal finances or stretch the management capabilities of cities and towns. This is especially problematic if local housing provision or subsidies arise from unfunded mandates. For example, Mathema et al (2016) describe the provision of social public housing projects—at subsidized rents—in Romania. After the country's transition to a mixed economy, local governments inherited the buildings (or received subsidies for their construction) but remained in charge of land procurement and infrastructure costs, as well as having to subsidize their operations. Because localities did not have enough taxable resources, the quality of these public buildings has been quickly deteriorating. In some areas, the inhabitants of public projects are Roma, and their buildings tend to be in even worse condition. Municipal governments—catering to their median voters—may not devote proper attention to minorities. In this situation, federal or state authorities may have to mandate and enforce equitable standards. Because some richer municipalities may want to opt out of providing housing services to the poor—to avoid their moving in—federal programs that are locally-implemented should be designed in ways that ensure an equitable allocation of efforts across jurisdictions (Quigley et al., 2000).

The role of the federal or state government is critical in ensuring adequate funding for municipalities, covering any mandates or policies that are delegated to them. This can be done by either providing direct subsidies linked to outcomes; by allowing municipal authorities to share in federal revenues; or by establishing local tax bases in ways that do not crowd out existing revenues. The careful design of mechanisms based on sound fiscal-federalism principles is critical (Oates, 1999). Policymakers should take into account the goals and constraints of both the federal and municipal governments, and devise programs that make them compatible. For instance, Quigley et al. (2000) describe the lack of alignment between the federal government and municipalities in the United States from 1937 through 1962. The central government incentivized the construction of public housing by covering all capital costs. Local governments could make all land siting and architectural decisions, as well as contract out construction services. In exchange, cities were in charge of funding the buildings' operations. Municipalities tended to overspend in construction capital, choosing features for the buildings that reduced operating costs, but that subsequently showed themselves to be less desirable—such as hard-cement plazas.

Publicly provided housing usually constitutes a "hot potato" for city mayors. They have to provide high-quality housing day-to-day while ensuring the collection of rents, which is hardly a recipe for popularity. They also have to garner financial sources to subsidize capital and operating costs. All the same, they have to structure public housing authorities to manage the apartments professionally and ensure the physical quality of the dwellings. Being a landlord is not easy. And local governments are not always set up in ways that privilege professional management, or that accumulate experience and know-how. Mismanagement is not uncommon in such circumstances (Andrews et al. 2006).

Oftentimes, city-run housing programs come under "friendly fire" from affordable housing advocates and community organizations of beneficiaries. Koppelman (2021), describes the protest movements of residents into social housing projects in Chile about the quality of the units. This author quotes a resident arguing that the public housing authorities *"always try to cut costs. Cutting costs is what led to this in the first place. What's the motive for cutting costs if the country has so much money?"*

Koppelman (2021) also interviewed workers in the public housing authority, who were frustrated at what they perceived to be an impossible task:

"As residents began to threaten renewed mobilization, officials insisted that (they) would provide funds and invite new contractors to bid on the project. However (...) only one company submitted a bid, with proposed costs exceeding the available budget for repairs. "We hoped it would be easier," Diego lamented, "but it turned out that [contractors] are not willing to do this job." As residents, infuriated, demanded an expedient solution, Diego threw up his hands: "We cannot obligate private companies to do a job that they don't want."

Burnout and high personnel turnover in local affordable housing institutions can be issues (Siakavellas, 2002). In this context, fostering a problem-solving attitude among all constituents represents good practice.

National policies—usually working through the tax system—may be relatively easier to implement. However, national governments do not have as much information about the nature of housing problems in specific cities or neighborhoods. Untargeted affordable-housing national policies are not usually a good idea (Rojas and Greene, 1995). Federal policies should at least be means-tested to access benefits. In cases with strong asymmetric information, federal funding can be provided, but policy implementation may better be delegated to the local level via block grants or similar instruments.

One of the main challenges at the municipal level is lack of expertise. Many developing countries' housing and finance ministries—as well as central banks—now have exceedingly well-prepared technocracies. The Mexican case illustrates this positive trend (Centeno, 2010). International institutions interface at these top levels to provide additional assistance and information. However, municipal policies are critical, especially regarding the supply side. Policy discussion and technical skills at those levels can be lackluster. This suggests that we need to move the focus of housing policy away from the housing ministry and into the city halls.

2.2.2. Demand versus Supply

Another important dimension is whether to focus on the supply or demand side. Demand-side policies have the advantage of empowering families to make informed choices about their own homes. Subsidized households become new consumers for developers or apartment owners. Competition to attract these customers tends to beget higher quality of construction and outcomes. Well-targeted demand-side subsidies that are reasonably well-funded and properly implemented can be successful, as in Colombia, Chile, and Costa Rica (Gilbert, 2004). Nevertheless, their appropriate design is critical to avoid distortions and inefficiencies. For instance, if subsidies limit the value of the unit that can be purchased, households may end up buying smaller units than they would have otherwise.

The main caveat of demand-side policies is their inability to increase the production of affordable housing when the housing supply is inelastic. This is especially true of blanket subsidies. In the case of France—a country with a low elasticity of rental supply—Fack (2006) finds that one additional euro of rental housing benefit leads to an increase of 78 cents in rent paid by new benefit claimants. Hyslop and Rea (2019) find that about one-third of increased housing subsidies to renters in New Zealand were passed to landlords in the form of higher rents.

Because most factors that make housing supply inelastic are local, national demand-side subsidies should optimally be accompanied by aggressive supply-side interventions and accommodating policies by local governments (Hilber and Schöni, 2016). The most important supply-side housing policy is for municipalities to enable easier and cheaper housing development (Saiz, 2010, Caldera and Johansson, 2013, Anagol et al., 2021)

Nonetheless, there might be a role for extremely targeted supply-side subsidies that make it profitable for developers to cater to the needs of very low-income families. In those cases, policymakers need to tailor programs so that subsidies to builders truly generate incremental supply. This is more likely if families would have lived in informal housing absent the subsidies: crowding out insalubrious dwellings is generally a good outcome.

However, if households would have moved to an alternative formal unit regardless, subsidies to developers may just make the latter richer. For instance, Sinai and Waldfogel (2005) argue that subsidies to builders of low-income rental apartments in the US partially crowd out the construction of affordable units that would have been built otherwise. On the supply side, program design is of paramount importance to avoid inefficiencies and distortions—e.g., developers building larger units in order to obtain more money (Lang, 2015).

2.2.3. Public Sector versus Private Sector

Observers or advocates sometimes imagine a strict separation between public and private housing. In practice, however, the construction industry is firmly situated in the private sector all over the world. The only exception is the contentiously named Democratic Republic of Korea, where housing builders are state-owned. Even there, secondary markets display signs of privatization and marketization (Baek et al. 2021). Realistically the issue is not *if* affordable housing authorities should be working with the private sector, but *how*. In my view, public-private collaboration should be done efficiently and transparently.

Of course, the ownership and management of rental housing can sometimes be assumed by the public sector. Public rental housing can work, but it does not in many contexts. Modernist-style large housing states, in peripheral locations with exclusively low-income populations, display extremely poor success records all over the globe (e.g., Dekker and Van Kempen, 2004). Nonetheless, better public housing outcomes are possible—as in Singapore (Pow, 2013).

In the context of a developing country, Mukhtar et al. (2017) propose six factors that predict the success of public housing buildings in Nigeria: ii) institutional clarity and accountability; ii) availability of competent personnel; iii) effective project management; iv) good maintenance management practice; v) appropriate design and good location, vi) effective housing finance system; and vii) adequate political support. Note that these success factors involve professionalism, funding, and clear incentives. They are largely independent of ideological disquisitions about public-versus-private. Even in successful public housing developments, the issue remains whether society could have obtained more affordable housing of higher quality at a lower cost. If the answer is no, then public housing is the right option. If yes, it is not.

Indeed, governments are tools that can be used for prosocial objectives but can also be wrongly deployed to serve personal, biased, clientelist, or corrupt interests (Einstein et al., 2021; Hicken, 2001; Shleifer and Vishny, 1993). The art of policymaking consists in choosing affordable housing strategies that minimize market and governmental failures and maximize prosocial behavior and outcomes. Note that nongovernmental, nonprofit private institutions can also supply affordable housing effectively. Furthermore, some firms involved in low-income housing provision are characterized by a mix of for-profit and philanthropic motivations—as we will see in the case studies below.

2.2.4. De Jure versus de Facto

One common mistake in housing policy is the belief that legal or budgetary changes are sufficient for effective programmatic action. Many developing countries have made strides in improving their laws, codes, formal institutions, and budgetary allocations to increase the access of their populations to decent housing. *De jure* reform is necessary but needs to be accompanied by *de facto* change. Frequently this involves enforcing policy directives and laws. Other times it requires performance accountability and combating corruption (Shah, 2007). Wherever corruption is pervasive, program design must take yet this additional factor into account. Transparency and the direct empowerment of program beneficiaries may help in some circumstances. In others, power-brokering cartels need to be curtailed.

Even if the federal authorities are clean, land use decisions in municipal planning offer plenty of opportunities for corruption (Costas-Perez et al., 2012; Cai et al., 2013). Therefore, housing policies require not only national and state laws but also local enforcement. The problem can also arise at the judicial level. For instance, an investment under a land lease—which involves substantial building disbursements from an outside partner to build on land owned by another party—requires protection from expropriation by the landowner via bribes to a local judge.

3. Affordable Housing Policy Instruments

There are myriads of affordable housing programs throughout the world. These programs intersect at national, regional, and local levels, and with other policies. While I do not intend to fully itemize a recipe list of policies, I can at least aim to define their basic ingredients (Malpezzi, 2023): this is, their basic component economic strategies. Most housing programs deploy at least one of the following strategies, with most of them combining a large number.

1. **Eliminating previous regulatory and policy barriers:** As in medical practice, housing policies should first do no harm. Some current problems of housing affordability stem from a combination of policies and regulations that either: i) make it more expensive to develop new housing; ii) increase construction costs; iii) distort markets to artificially increase housing values; iv) reduce the supply of affordable rentals; v) make credit expensive or unattainable; vi) push households into informality; vii) otherwise exacerbate harmful demand/supply imbalances. Policy reform is necessary to do away with counterproductive laws, policies, and man-made barriers—sometimes associated with excessive zoning requirements (Saiz, 2010; Buechler and Lutz, 2021). Typically, a combination of reforms at the federal, state, and municipal levels is required.
2. **Eliminating lack of competition and market failures:** Current affordability problems can also stem from market failures. Policymakers should aim to break oligopolies and increase market competition in inputs, construction, and sales. They should find sources of taxation and finance to provide the necessary public goods, such as infrastructures. Policies should incentivize activities with positive housing externalities and tax or regulate those with negative ones. Whenever and wherever markets behave irrationally—as in housing bubbles—governments may also carefully act—as in macroprudential policies (Akinci and Olmstead-Rumsey, 2018) or by taxing empty properties in expensive areas of supply-constrained metros (Segú, 2020). For instance, some municipalities in Finland levy a higher tax rate on empty urban land, to encourage housing development: this policy accelerated the rate of single-home construction (Lyytikäinen, 2009). However, policymakers should first attack the roots of apparent market inefficiencies: for instance, if idle properties are not leased due to a lack of enforcement of landlord's rights, laws and regulations should be changed before taxing empty flats.
3. **Facilitating filtering of the existing stock to lower-income households:** Many of the dwellings catering to families with modest means are the outcomes of filtering processes (Sweeny, 1974). In such processes, relatively more expensive new housing is built for middle- and upper-income families. As the stock depreciates, it becomes affordable to the working class and the poor. Notwithstanding the need for targeted pro-poor policies, the more units built at market rate today, the more filtered affordable housing in the future. Similarly, the better the markets can satisfy the demand from middle-income families with new construction, the less these households will need to displace poorer families from gentrifying neighborhoods (Lees, 2014).

4. **Rent or price controls**: Rent controls are typically not recommended by economists as they do not ultimately solve the root of the problem: not enough quality housing. In fact, rent controls tend to: reduce the stock of rentals and their quality; generate negative externalities or frictions between neighbors; reduce mobility; generate black markets; and misallocate resources toward people who are not necessarily needy: Olsen, (1972), Malpezzi et al.(1990, 1998), Glaeser and Luttmer (2003), Sims (2007), Field et al. (2008), Autor et al. (2014), Diamond et al. (2019). Nonetheless, there are many types of rent control programs (Been et al., 2019). Those that smooth rental price variation by phasing out increases over long periods may be more efficient (Mense et al., 2018). Ultimately, the responsibility for providing housing for those in need is on society at large, which suggests solutions that require budget allocations from progressive taxation. In contrast, rent controls exclusively penalize those who provide rental housing, hardly an incentive for that activity.

5. **Reducing the cost of credit**: Several strategies—including interest rate subsidies, deductions, support to securitization, and mortgage market deepening—are geared toward reducing the costs of credit to families. Unfortunately—in most countries—these approaches cannot usually reach the very poorest, who do not have access to the banking system or money for a down-payment (Karlan and Morduch, 2010). Ironically—absent supply interventions—untargeted, blanket mortgage interest tax deductions (MITD) may increase housing prices, a so-called capitalization effect—as shown in Sweden by Berger et al. (2000) and in Croatia by Kunovac et al. (2022). This effect negatively impacts the poorest. A recent repeal of a MITD program in Denmark provides the cleanest evidence of its effects (Gruber et al., 2021). The mortgage deduction was found to have no impact on homeownership for high- and middle-income households but had induced them to buy more expensive houses and increase their indebtedness. The reduction of the tax subsidy lowered equilibrium home values. Because, arguably, these are not negative outcomes, they suggest that affordable housing policies should not rely on indiscriminate MITDs. Targeted subsidies for low-income families, together with policies that help them qualify for credit, seem better options. The gradual repeal of MITDs in countries that have them opens opportunities for better distribution of fiscal resources, including funding targeted housing programs.

Panama stands out as one of the countries that have used interest subsidies more aggressively. Households with good credit can obtain very low rates on loans to purchase their primary homes, with subsidies of up to 200 percentage points. However, Panama’s experience is difficult to replicate: their real estate sector represents an outsized share of the economy, and interest rate subsidies are used as countercyclical fiscal policies. Moreover—due to its dollarization, internationalization, and tax status—Panama is a major entrepot for foreign capital, so that misallocation of scarce investment resources represents less of an issue there.

Saiz (2019) argues that untargeted, economy-wide subsidized credit may also exacerbate real estate bubbles. Therefore, strict targeting seems reasonable for these types of programs. Nonetheless, underwriting credit for the poor while ensuring its financial viability is always a challenge, which typically requires the deployment of complementary strategies —as in points 6, 7, and 8 below. If low-income credit is systematically exposed to large default risks, mortgage programs become financially unsustainable, as with the South African experience (Moss, 2013).

6. **Reducing household mortgage down-payment requirements**: Some programs—as in Colombia’s Semillero de Propietarios—provide down-payment assistance or reduce equity requirements for low-income families (Malagón and Duque, 2022). The latter is a risky strategy, as it increases the probability of default of subprime credit (Gramlich, 2007). The former requires substantial public outlays to build up enough equity, making it a difficult strategy to scale up. Kelly (2008) argues that US households with gifted equity may be more likely to default, but more research is needed in other countries. Nonetheless, the design of these programs should focus on moral hazard and on reinsuring household credit to minimize default risk for the lenders. To avoid excessive risk-taking by households, down-payment assistance—which immediately generates equity—may be preferable to policies that simply allow for higher loan-to-value ratios, thereby shifting families into subprime loans.

In addition, careful thought must be devoted to the counterfactual of the program for qualifying families. For example, Grinstein-Weiss et al. (2013) report on an experimental three-year subsidized down payment program in Tulsa, Oklahoma, US. The program's initial impact increased the homeownership rate among eligible families by about 11% one year after its implementation. However, if one compared the treatment group to a control after four years, the difference had dissipated. Many households would have bought a house regardless of the program. The policy only provided a monetary incentive to anticipate their purchase. In this case, a simple cash transfer may have helped more families—even those not willing to save for a down payment today—without introducing distortions. Alternatively, subsidized savings accounts could be designed to allow families to choose the timing of their purchase.

Inter-temporal substitution is more of a concern in developed countries, where transitions from renting to owning are common and less problematic. In developing countries—with substantial informal housing—quickly moving people away from insalubrious dwellings is a priority. Formal housing subsidies on down payments may be more attractive there.

7. **Facilitating or incentivizing household savings**: Rather than subsidizing down-payments, certain governments subsidize housing savings or make it compulsory for families to enroll in housing provident funds. Provident funds typically mandate employers to set aside a percentage of wages into savings accounts. Families can draw down from those savings when they are ready to take on a mortgage. These programs—such as the one in Singapore—can be effective in promoting savings for housing and improve the credit standing of families. Tang and Coulson (2017) show that provident funds in Jinan (China) were successful in promoting homeownership. However, they also steered households to buy smaller homes due to idiosyncratic program rules. As in other spheres of housing policy, good program design minimizes such unintended outcomes.

Outstanding savings pools in provident funds can either be independently managed by the banking system or ploughed back into revolving mortgage funds. The latter strategy—with Mexico's INFONAVIT as a prime example—requires a large degree of transparency and checks and balances to manage default risks and the flow of funds. Strong collection policies, actuarially fair balances of assets and liabilities, and insulation of the funds from political pressures are all necessary. Any recurring or one-time subsidies to the fund—as well as its capital position—should be transparent and publicly available. The risk of leaving savings accounts unfunded is ever present in countries with weak governance. As in the case of the Brazilian fund in the 1980s, high inflation and faltering credit repayments can quickly eat up existing savings and bankrupt provident funds systems (Valenca, 2013). Macroeconomic stability is a must for these programs to be successful.

8. **Cross-collateralization, reinsurance, and risk reduction:** This set of strategies pool cash flows to reduce the risk of individual investments. Thereby, the cost of capital for affordable housing is cheapened. Securitization is the most prominent such strategy, whereby mortgage liabilities and cash flows are pooled and sold to the market at relatively low spreads. Credit guarantees—effectively an insurance policy on large loan portfolios—work similarly. The United States is a prominent example of a policy-conscious use of securitization to make mortgage credit

more affordable. The GSE system—nationalized fifteen years ago—is the cornerstone of the country's mortgage market. Efficacious securitization requires actuarially fair practices and professional management (Chiquier et al., 2004).

As we will see later, cross-collateralization of risk is also an important tool used by the Dutch social housing sector to obtain cheaper financing. In Spain, private markets have stepped in to provide rental non-payment insurance to landlords (Osma, 2020). The country's legal system makes it difficult for landlords to collect any rent for long periods in case of delinquency, which has historically discouraged rental supply (Mora-Sanguinetti, 2012). Globally, Casas and Saiz (2010) find that judicial systems that impede rental collection tend to beget thin rental markets. On the other hand, avoiding the traumatic displacement of fragile families is critically important, and research shows the negative impacts of such outcomes (Humphries et al., 2019; Schwartz et al., 2022). Rental collection reinsurance can play a role in keeping vulnerable households from eviction during crises, while avoiding systematic losses to landlords, thereby enabling the existence of this market. As in any insurance policy, it is important to design it in ways that mitigate moral hazard and adverse selection (Pauly, 1978).

The real estate development process is also highly risky, requiring large expected returns. Strategies to de-risk development to make housing cheaper include reducing regulatory uncertainty; allowing for phased development; public credit guarantees; private guarantees; land leases with promote clauses—where upward and downward risks are shared in optimal ways; well-structured public-private projects (PPP); enabling developers to use land call options; and the institutionalization of the investor base via development joint ventures (JV).

9. Sites and services: Some programs provide households with plots of serviced land. "Site and services" plots are delivered with access to water, electricity, and sewage. Neighborhoods are planned for multiple uses, and configured with suitable street layouts. Land is subdivided to accommodate very compact—but low-rise—development of relatively modest homes. Homeowners are expected to come up with resources to build on the site—perhaps after receiving parallel subsidies helping them to do so. Improvements on the lot are not expected to be immediate but to occur over a period of years. The efficacy of such approaches was put in question by early studies, which followed the evolution of these sites for a short period (e.g., Keare and Parris, 1982). Nevertheless, recent evidence (Owens et al., 2018; Michales et al., 2021) shows good outcomes of planned "sites and services" developments in India and Tanzania over the long run.

10. Slum improvements: Informal dwellings may display deficiencies, but still be inhabitable with additional improvements. Pragmatic policymakers have tried to improve their quality by providing upgrades to surrounding infrastructures, even if the housing units themselves remain informal. In 1996, the Declaration of the United Nations Conference on Human Settlements argued for "*the upgrading of informal settlements and urban slums as an expedient measure and pragmatic solution to the urban shelter deficit*" (UN,1996). For instance, the Favela-Bairro program in Rio de Janeiro focused on improving access to water, sewage, and street infrastructure—albeit the efficacy of such programs is debated (de Duren, Ruth, Osorio, 2020). It is usually cheaper to provide adequate infrastructure in ex novo developments than it is to retrofit and upgrade existing informal settlements (Fernandes, 2011).

Indonesia provides an interesting case study of the tradeoffs of upgrading. With economic growth, the country's policy has encouraged the shift from self-construction by the poor in slums—Kampungs in vernacular—to widening the access to formal housing. The former Kampung Improvement Program in Jakarta had focused improved the conditions in Kampungs in the 60s and 70s, by paving roads, improving transportation, and facilitating access to water, sewage, and electricity. While the program's outcomes were generally positive, it has also slowed the conversion of slums into redeveloped formal housing (Harari and Wong, 2017).

11. Land regularization and entitlement of informal housing: Other approaches to informality have involved regularization, by providing official titles to occupants. It has been hypothesized that bestowing home titles spurs capital investment (De Soto, 2000). However, detractors have questioned the hypothesis and pointed to its practical limitations (Gilbert, 2002; Payne et al., 2009). In theory, the regularization of informal housing should have a positive impact on housing investments for two reasons: 1. By obtaining legal title to their homes, households can legally procure loans that are collateralized by the property, as well as increase their wealth via capital gains from the appreciation of the land; 2. Title regularization reduces the uncertainty of households about the continued future use of their property and facilitates future sales; this, in turn, increases the incentives to spend money on the asset.

There is now sufficiently strong empirical evidence demonstrating the positive effects of property entitlement on housing investments (Field, 2005; Galiani and Schargrodsky, 2010; Deininger, et al., 2011). Even if no formal title is bestowed, the regularization of informal settlements—via the official acknowledgment of the current occupants and provisions against removal—increases household expenditures on improvements (Nakamura, 2017). There is, however, no strong evidence for the collateral channel (Deininger et al., 2009). This is not surprising, as financial penetration and credit availability for informal workers in the developing world are extremely low, and even so for the middle-class (Buckley and Kalarickal, 2004).

While title regularization can be beneficial if well-executed, it is not the panacea for solving housing deficits. Better approaches to improve housing quality for the poor explicitly combine formalization of housing titles and boundaries, together with localized subsidies for qualitative improvements and/or public investments in infrastructure—as in the case of Medellín (Betancur, 2007) or in several interventions in Perú (Fernández-Maldonado and Bredenoord, 2010).

12. Reduction of construction costs: Generating affordable housing often involves building at a low cost. In Guayaquil, Ecuador—as discussed later—the NGO Hogar de Cristo builds affordable homes in locally grown bamboo, allowing families to later upgrade to versions in wood and cement. Affordable housing agencies should aim to achieve win-win situations, with more housing production and more revenues for workers, by negotiating with unions for more flexible—but safe—labor practices in exchange for more construction jobs, as done in Philadelphia (Saiz and Salazar, 2017). Housing cooperatives can also reduce the cost of occupation by eliminating profit margins on development.

13. Reduction of onerous ancillary construction requirements: local regulations sometimes introduce excessive requirements for homes that are supposed to be affordable, and which do not improve interior quality or family outcomes. For instance, Mathema (2012) reports how regulatory changes in Kigali—introducing excessive setbacks and lot-size requirements—effectively informalized much of the existing high-quality stock.

14. Modular and prefabricated housing: Mobile or prefabricated homes can be part of the affordable home toolkit if existing stigmas are overcome. Two of the leaders in innovation and production are Australia and Sweden (Steinhardt et al., 2020), countries that tend to impose high-quality standards. For example, BoKlok—a subsidiary of IKEA—specializes in modular homes that can be built rapidly from pre-packaged boxes. Their designs emphasize mass production and are geared toward maximizing interior space with the minimum exterior surface area, thereby minimizing costs (Morton, 2016).

15. Assistance to self-construction: Self-construction is one of the major naturally occurring sources of affordable housing worldwide. Incremental high-quality self-construction is sometimes proposed as a policy strategy when funds do not allow for better solutions (Greene and Rojas, 2008). Nonetheless, collections of low-quality self-built dwellings without infrastructure equate a slum. Quinta Monroy—an affordable housing development by acclaimed architectural firm Elemental in Chile—was explicitly designed to allow for high-quality additions to a very modest core. While mostly successful, recent analyses have found an increasing level of informalization in the development's common spaces, with the risk of resembling more slum-like as time progresses (O'Brien and Carrasco, 2021). Requiring some sweat-equity from homeowners in formal developments can have positive aspects, but full self-construction is probably better seen as a transitional stage from which countries graduate as their income per capita grows.

Nevertheless, in poor countries and regions, self-construction will happen, and it is therefore incumbent upon their governments to assist and train households to improve the quality of construction, provide entitled serviced land, and maximize access to infrastructures. Some areas enjoy of vernacular self-construction techniques that are singularly well-adapted to the local conditions. In those areas, experts assisting locals in self-construction should be open-minded: introducing valuable innovations but also respecting native typologies (Turner and Fichter, 1972).

16. Recycling and reusing commercial assets: Existing underused real estate or institutional buildings—e.g., army barracks—can be redeployed into affordable housing when such strategy is cost-effective. Germany adopted such an adaptive reuse strategy to accommodate the large Syrian refugee inflows of 2013-2016. Thirty-seven percent of refugees during that time lived in repurposed buildings, such as former office buildings or schools (Baier and Zieger, 2018). The conversions required across-the-board relaxation of zoning codes.

17. Increasing occupation densities in the current stock: Plenty of space in existing dwellings is underutilized and can be made available to new occupants at affordable rates. For instance, Toronto passed new regulations allowing for small accessory dwelling units in the backyards of single homes—laneway housing. Homeowners can rent these units, thus generating cash to help them defray housing costs and creating new affordable options for renters.

The website service Nesterly tries to facilitate a more intense use of the homes of the elderly. Aging in place may be associated with what has been deemed as *housing over-consumption* (Clark and Deurloo, 2006). In such cases, older couples or single widowers only use one bedroom in units with three or more bedrooms—which could optimally cater to larger families with children (Reardon et al., 2020). Nesterly allows seniors to rent out single empty rooms to graduate students, reducing the pressure on local rental markets. Students can get extra discounts in exchange for helping the elderly person with home chores.

18. Improvements of low-quality stock: Beyond infrastructure investments, governments may facilitate or subsidize interior and façade improvements to families experiencing qualitative deficits. There is scant research focusing on interior reforms. Thomson et al. (2013) summarize existing studies and conclude that improvements in thermal comfort are clearly associated with better medical and social outcomes, with other improvements showing fewer clear impacts on health. Nonetheless, they also report that "*While many of the interventions were targeted at low-income groups, a near absence of reporting differential impacts prevented analysis of the potential for housing improvement to impact on social and economic inequalities.*" A study of renovation subsidies in Scotland also found thermal insulation to be the most effective intervention to improve health and well-being, followed by adding reinforced front doors for security (Curl. et al., 2015).

However, these authors point to gainful employment as being more important for health and mental outcomes than home renovations.

19. Small-sized units: affordable housing provision in developing countries tends to involve the production of smaller units. This reduces the costs of construction and maintenance, as well as electricity and utility outlays. For example, the recipient families of the "Mi Casa Ya" subsidy in Colombia tend to move into units that are about 45 square meters. While most families access housing that they would not have, a few may have been nudged into smaller homes due to the program's home-value thresholds (Uribe, 2022). Good program design minimizes such distortions at the margin. Nonetheless—for many families in the developing world—the choice facilitated by such policies is between small, low-quality, informal homes without services and similarly small, but high-quality, serviced, formal ones. The choice is clear for most.

Concerns about crowding become relevant as countries become more developed. There is a literature finding associations between crowded housing conditions and worse mental health in Thailand (Fuller et al., 1993), India (Evans et al., 1998), the US (Lopoo and London, 2016), the UK (Marsh et al.. 2019), and China (Wang and Liu, 2022). However, families who need to move to smaller homes may be different in unobservable ways, and I am not aware of a randomized-controlled experiment on this issue. More research should be devoted to the impact of architectural interior design on mental outcomes in smaller spaces.

Tiny homes are also becoming part of the toolbox to house homeless individuals quickly and cost-effectively (Evans, 2020). This typology may be attractive for this purpose because larger homes may overwhelm and isolate this population. Nonetheless, further evaluation of its effectiveness is needed.

20. Increasing residential density in affordable housing greenfields: Good neighborhood design in greenfields or large redevelopment sites can increase housing provision at minimum production cost (Bertaud, 1988; Bertaud and Malpezzi, 2004). Compact planning strategies include: reducing street widths, eliminating setbacks, concentrating open spaces to minimize wasted land, or sharing walls between buildings to minimize space loss and construction costs.

21. Mandatory inclusionary zoning: Inclusionary zoning (IZ) is a requirement for new real estate development projects to include affordable housing: units for sale that are below-market prices and that are made available to qualified low-income buyers. Alternatively, developers may be allowed to disburse a payment to the local government in lieu of affordable housing provision; these funds can then be used to invest in social housing. Mandatory IZ policies can be thought of as a tax on development. As such, they will reduce the supply of market-rate housing, exacerbating generic affordability issues—at least to some degree (Schuetz et al., 2011). Their costs will depend on the relative elasticities of housing supply and demand. Of course, these costs must be weighed against the funds obtained for low-income housing. Regarding in-site IZ requirements in very expensive neighborhoods, policymakers should ask if obtaining payments in lieu would be more efficient, thereby providing even more low-income units in middle-class neighborhoods. Regarding revenues, policymakers may want to question if there are alternative taxes that raise more money overall—as well as more efficiently—without discouraging housing construction.

22. Density bonuses for inclusionary building: A very attractive value-capture policy involves offering extra development rights (FAR) to developers who set aside units for the low-income population at below-market rates. If well designed, such incentives can increase the supply of market-rate housing and provide extra affordable units—or funds to develop them in lieu. Bonuses should be high enough to offer enough incentives for developers to provide affordable housing, but not too high to inordinately transfer wealth to this group.

23. Direct demand-side subsidies to home buyers: this is a relatively common policy worldwide. Here, buyers are offered some kind of subsidy or discounted tax rate—e.g., no value-added tax (VAT) in transactions involving first-time homeowners (Whitehead and Scanlon, 2002). As I discussed earlier, the main issues here are identifying and reaching the appropriate target population and ensuring that supply is relatively elastic regarding the impact of the expanded demand from that segment.

24. Direct supply-side subsidies to builders: Here, direct disbursements or reduced taxes accrue to developers who produce affordable housing. Per our comments earlier, subsidies should actually be able to produce additional low-income housing units and incentivize construction without enriching builders. Otherwise, alternative approaches are preferable.

Another potential policy target is the homeownership rate. For example, Switzerland subsidizes the construction of rental properties under the conditions that rents be set up at an affordable level and not grow faster than pre-specified targets (Bourassa and Hoesli, 2010). This policy seems to have increased the share of buildings that are under rental tenure, however, its overall impact on the total quantity of affordable homes is unclear.

25. Targeted revenue-neutral housing tax redistribution: While progressive taxation is common in democracies worldwide (Acemoglu et al., 2015), levies that explicitly redistribute housing wealth and consumption are rare. For instance, São Paulo (Brazil) enacted a progressive property tax scheme in 2002. Biderman and Batista (2018) argue that the tax generated capitalization effects: property prices decreased in the value segments subject to higher taxation. The extent of capitalization effects and the degree to which they will negate progressive tax revenue growth is a subject that requires more research.

Colombia divides all urban areas geographically into six socio-economic strata. Families living in lower strata receive subsidized prices for utilities: water, electricity, sewage, and trash collection. These subsidies are funded through higher charges to occupants in the highest strata. While the policy may reduce residential occupation costs for the poorest, it has also contributed to cement and increase socio-economic segregation (Martinez et al., 2022). In addition, capitalization effects—making housing more expensive in the areas that receive subsidies—may partially negate the redistributive impact of the program (Uribe, 2021). Rather than flowing to specific neighborhoods, cross-subsidies should target poor families. Admittedly, the extent of the informal economy and the opacity of family incomes to the local tax authorities make it very difficult to implement this latter approach.

I am unaware of any redistributive taxes or levies on rental revenues geared toward generating subsidies or reinsuring rental risk for low-income renters. This appears to be an area open for innovative future policies.

Local housing taxation/subsidy strategies must consider inter-jurisdictional competition that may hollow out the tax base (Nechyba, 1997; Blöchliger and Pinero, 2011). Sources of revenue that are extremely mobile are difficult to tax at the municipal level and might require coordinated taxation at the federal or state levels (Wilson, 1999).

26. Demand side subsidies to rental housing: These programs can come as deductions in the federal income tax—as in France, where the poorest renter households can even obtain positive cash flows (Laferrère and Le Blanc, 2006)—or via government expenditures in targeted transfers, such as rental vouchers. The extensive coverage of French families receiving either rental or mortgage deductions arguably makes these subsidies almost identical to a lower tax rate on the working and middle classes. The government could have obtained a similarly progressive outcome directly by altering the tax rate schedule. Thus, such blanket housing deductions are unlikely to increase the supply of affordable housing. Targeted programs where the recipients conform a small group of the total demand for rentals tend to fare better (Sayag and Zussman, 2020).

27. Reducing barriers to rental provision: In some countries, rental laws and regulations have relatively anti-landlord provisions and procedures (Casas-Arce and Saiz, 2010). Making it very difficult to be a landlord cannot but reduce rental supply. The key here is to dismantle barriers that curtail the supply of rental housing, while at the same time protecting targeted fragile tenant families from evictions arising from economic fluctuations or bad luck.

28. Cross-subsidies in master planning: In large development/revitalization projects, land value increments arising from planning and governmental action can be partially captured by the public or non-governmental organizations to provide affordable housing. Cross subsidies inevitably imply that parts of the new developments must be for-profit, with some such gains being redirected to a social agenda.

There are many instruments through which the public can capture some of the land value increments created by large redevelopment projects (Alterman, 2012). A very interesting one consists of the outright sale of air rights or floor-to-area ratios (FAR) by local government in redevelopable areas, as in the case of Brazil (Smolka and Maleronka, 2018). Municipalities can set limits on how many new units can be serviced by the local infrastructure, while allowing developers and households to choose specific sites for housing development. The funds raised from air rights sales can then be used for affordable housing or other public services. These schemes incentivize local governments to maximize the value of land, facilitating the political viability of high-density development.

29. Public and non-governmental land ownership: A more direct example of value capture is in public land ownership. By owning the land, municipal governments can accrue the economic appreciation of properties and reinvest the gains back into their affordable housing mission. Typically, a municipal government or nonprofit will lease the land to a developer at a very low cost but keep the rights on some part of the appreciation—implicitly devoting it to keep rents affordable and retaining ultimate control over the property at the end of the land lease.

30. Non- or mixed-profit entrepreneurship: Affordable housing nonprofits are part of the ecosystem providing social housing around the world. They deploy different strategies to do so, including donations of volunteered time, capital, land, or expertise. A breed of developers employing both for-profit and nonprofit motivations may also arise under favorable circumstances (Saiz and Salazar, 2019). These developers use part of the profits from their market-rate operations to build and cross-subsidize affordable housing units.

4. Affordable Housing Policy: Case studies

It is not possible to study every single housing intervention in the world. Because we described 30 non-exclusive tools, and each housing program can potentially include any of them, the total number of differentiated interventions is therefore at about one billion (2^{30}).

In this section, I limit attention to nine case studies that illustrate important aspects of social housing delivery and lessons learned. Note that I do not believe that all these cases are positive in their entirety. Instead, some of their weaker aspects help us reflect about designing affordable housing policies in more strategic ways to achieve maximum efficiency and successful outcomes. As such, the type of analysis herein may inspire future critical examination of other global affordable housing policies. Nevertheless, the selection of case studies is not random. The examples cover local and national policies, include public and private organizations, supply and demand approaches, and formal and informal dwellings. Table 1 maps these programs to the economic strategies that—I characterize—they deploy.

I also take advantage of these few case studies to elaborate on some themes that I reckon to be of critical importance for the provision of affordable homes worldwide: self-construction; reduction of construction costs; land value capture; relaxation of zoning; subsidies; promotion of rental markets; participation of the civil society. Since the original Million Home Program in Sweden (Hall and Vidén, 2005), many other countries have launched *million dwellings* construction initiatives. Examples include Sri Lanka (Joshi and Khan, 2010), Angola (Croese, 2012), Indonesia (Rassanjani, 2018), and Venezuela (Wilson, 2020). These programs' objectives are rarely met—for instance the Venezuelan government overreports the number of homes built by at least a factor of four (Soonets, 2019). Because of the salience and risks of mass-scale housing construction programs, I use the case of Songdo city—which is not directly an affordable housing development—to illustrate the risks and rewards of such endeavors.

4.1. Subsidies + Self-Assistance: Habitat International; Hogar de Cristo

Social housing need not be provided by the government or by for-profit actors. In fact, many examples of successful affordable dwellings are from the NGO sector. The two organizations discussed below have their roots in practically-oriented Christian movements. While I do not endorse any religious organization, their housing models have proven successful enough to merit replication in other contexts.

4.1.1. Habitat for Humanity

Habitat for Humanity is a global non-profit organization providing affordable. Since 1976, they have built or renovated more than 1.6 million homes in over 70 countries (Bagget, 2001). The NGO was founded in Georgia (USA) under the inspiration of the US Civil Rights movement and the idea of "partnership housing." Arguably, the organization is rooted in the evangelical Christian duality of personal self-reliance plus love-thy-neighbor. Their mission is to provide "*a hand up, not a handout.*" Their loan, training, and grant programs empower low-income households to build, renovate, or repair their homes. The NGO works with families to identify their needs and to develop financial management plans for maintenance. To participate, families must meet certain income and credit criteria. Critically, families must also be willing to invest sweat equity by participating in the construction process or other volunteer activities. This requirement is intended for families to develop a sense of ownership and responsibility for their homes, and to encourage them to become active members of their communities.

Families are also required to slowly pay back a fraction of the NGO's upfront investments. For example, in Ghana, the homeowner family's share of the cost of each house is expressed in bags of cement—say, 150 bags (Obeng-Odoom, 2009). After construction, the family should repay one bag of cement every month for 150 months. The resources thus generated plow back into Habitat's social mission.

The organization works with local builders and suppliers—who may provide discounts or volunteered time—to construct homes that are affordable, energy-efficient, and contextual to the local realities. Local volunteers form a critical part of their model, spending countless hours learning the trades and building homes at no financial charge (Hays, 2002).

The main challenges for Habitat are the lack of funding and the scarcity of affordable land or old properties. The rising costs of construction materials and labor in the past three years have forced the organization to reduce costs—for instance, by using alternative building materials or by strengthening partnerships with local businesses and organizations. One criticism is that the organization fails to create economic opportunities in the community apart from housing (Obeng-Odoom, 2009). However, in my view, they could not possibly be expected to transform societies and economies at large. As we discussed earlier, multiple policy objectives require multiple policy levers. Habitat should focus their expertise on housing; other policies and programs can complement their mission in other areas.

Despite the challenges, the organization has helped to provide safe, decent, and affordable housing to millions of families. PlaHovinsak (2022) reports that "*in comparison to denied applicants, Habitat homeowners report more positive changes in their overall life, economic situation, and their level of community involvement.*"

4.1.2. Hogar de Cristo

Hogar de Cristo is a Catholic social organization operating in several South American countries but centered Guayaquil, Ecuador. It provides financial assistance to low-income families to purchase or improve their homes. In return, the families must contribute to the construction and maintenance of their own homes, as well as the homes of other families in the program. This approach—as in Habitat for Humanity—is based on the belief that people are prouder and more likely to take care and invest in something that they have helped to build or improve themselves.

Eligible families often lived in informal settlements or substandard conditions. Therefore, they do not have the necessary documents or credit history to qualify for traditional forms of assistance. Once accepted into the program, families receive funds to purchase or improve their homes, as well as training in construction and home maintenance. They are also required to participate in community development activities, such as neighborhood clean-up campaigns and community meetings.

Hogar focuses on lowering construction costs—especially for entry-level homes. For simpler homes, they use locally grown bamboo. Their dwellings come only in a few pre-designed models, allowing standardization and economies of scale. Families can choose the home model that they like most from these designs. Homeowners are then given the option to progressively upgrade to versions in wood or bricks.

4.1.3. Assessment and Lessons

Both organizations represent useful tools to combat housing deficits. However, by themselves, they cannot attain the necessary scale to reach all. Well-designed government programs are necessary to fully breach the gap in most countries where it is feasible to do so. Nevertheless, there are lessons to be learned from their models.

1. **Focus on reducing construction costs**: Construction costs represent the most substantial fraction of dwelling expenses for households living in poor neighborhoods (Glaeser and Gyourko, 2018). Their determinants are well understood in the US context (Gyourko and Saiz, 2006), but less so globally. Hogar de Cristo's use of local materials and their standardization of building plans are worthy of note. The use of volunteer labor, sweat equity, and discounted inputs further reduces building costs. In some cities, this strategy may need to involve negotiating with unions—for instance, to allow for the use of local volunteer and apprentice labor—in neighborhoods where building at current costs is not economically viable. Institutional constraints in the production of affordable housing can make it more expensive to build (Ward, 2022).
2. **Subsidies together with training**: Beyond direct monetary assistance, the programs provide training to families in both self-construction skills and financial management—mortgages,

savings, and budgeting. I am not aware of any evaluation of the former aspect, but—on average—financial education interventions have been found by researchers to have positive effects (Kaiser et al., 2022).

3. **Provide dwelling choice and variety:** The Hogar de Cristo program is especially notable in providing standardized affordable products with rich design variety and choice, to avoid their homes feeling "cheap."

4. **Self-reliance and self-management**: These are skills that the programs try to instill. However, these aspects are controversial. On the one hand, Davidson et al. (2007) argue that sweat equity **alone** does not improve the quality of the dwellings. Participation in design and planning, they claim, is also needed. On the other hand, additional personal outcomes may improve due to the sense of achievement that sweat equity induces. A well-established and replicated literature in psychology shows that people can occasionally be trapped in processes of learned helplessness (Maier and Seligman, 2016). Nudging families into self-reliance and away from the passivity and heightened anxiety brought by learned helplessness—together with financial assistance—might work well under the appropriate circumstances. This is an area where more research is needed.

Importantly, another outcome deserving of further study is the support by donors and volunteers for the program. There is strong evidence that human altruism is boosted by feelings of reciprocity (Cortes and Dweck, 2014; Cosmides and Tooby, 2015). A testable hypothesis is whether sweat equity is perceived as reciprocal, and therefore, as more deserving of support by donors. Perceived reciprocity from beneficiaries might be an important factor in garnering taxpayer support for redistributive housing programs.

4.2. Bottom-up Planning and Value Capture: Chinese Villages

4.2.1. Farming Residential Rental Income

In recent years, villages in China have played a significant role as real estate developers, taking advantage of the country's rapid urbanization and the rising demand for affordable housing. Villages are small local authorities that escape the jurisdiction of larger cities. Land ownership in villages became fully cooperative after the communist revolution, but subsequent land reforms allowed for the parcellation by individual families for agricultural use. Since 2003, real estate development has been facilitated by regulatory changes allowing rural collectives—including villages—to enter into contracts with developers for the leasing of land. Profits revert to the collectives' farmers. Villagers are now not only growing produce but also farming bricks and mortar that yields rental income.

Agricultural land cannot generally be urbanized in China. However, farmers' homes used to be on non-arable land that can now be redeveloped at high densities. Village sites that are close to rapidly-growing urban areas have produced large amounts of housing. They specialize in the low-income segment of the market—usually catering to migrants from rural areas. They do that by fitting more units per acre. Village collectives are much looser on planning requirements than conventional city governments. Shenzhen's well-known handshake apartments sit a very short distance from one another, along very narrow streets without significant setbacks. Apartments are small, situated in buildings with 5 to 7 floors, without elevators. Although rents per square meter for these apartments can be about half of those in conventional units, the villagers obtain higher revenues overall, due to their more intensive use of land (Bertaud, 2014).

One of the main challenges of village development has been its lack of transparency and accountability. Some village chiefs have engaged in corrupt practices, embezzled funds, or used their position to secure favorable terms for themselves. In some cases, villages have faced conflicts with city governments over the use of land or other resources, which has led to delays or even the abandonment of projects. There have also been concerns about the environmental impact of projects built on land that is prone to natural disasters or in ecologically sensitive areas.

Nevertheless, village-led real estate development in China has spurred the creation of jobs and economic opportunities in rural areas, and resulted in the construction of new homes, schools, hospitals, and other facilities.

4.2.2. Lessons

Some perceive the Chinese village model as chaotic, making it hard to recommend its wholesale adoption. However, there are some lessons and positive aspects that are important to remark on.

1. **Relaxation of planning rules for very cheap housing:** What makes village housing so much cheaper is the ability of the collective owners to maximize the value of the land by building at the highest practical densities. For instance, the Bertaud model analyzes different ways to fit the maximum amount of housing in a plot of land (Bertaud, 1988). The typologies that are produced are simple. Nonetheless, the outcome can be considered a transitional stage to house people in decent conditions until economic growth allows for better dwellings.
2. **Bottom-up planning and sharing development gains with locals**: By generating considerable revenues for the local population, the village development model garners strong grassroots support for housing construction. The farmers leasing out land used to be very poor. Not only they are now generating affordable housing for others, but they are also enjoying upward mobility themselves.
3. **Activating land in popular collective ownership schemes:** In many parts of the world, a substantial amount of land is owned by collectives: the scarcity of entitled land is part of the affordability problem there (Grove, 2004). Rather than privatizing or expropriating their land, the village model allows locals to enjoy the development benefits while maintaining long-term control over the property. In most countries, this may require changing the laws to allow land lease agreements with such collectives.

Clearer national laws are necessary but not sufficient to activate communal land for affordable housing. For instance, Mexico reformed its land law in 1992 to allow for communal agricultural communities—ejidos—to urbanize. The law established three ways to activate ejido land for urban use: i) a supermajority vote by the collective to disincorporate and sell the whole ejido—the so-called "dominio pleno"; ii) the individual sale and subsequent disincorporation of smaller plots controlled by individual ejidatarios; iii) joint ventures with outside sources of capital. The latter path has not been very popular because of the following factors: lack of legal clarity (Barnes, 2009); lack of investor protection in such local joint ventures; the established fraudulent practice of individual ejidatarios selling land illegally for self-construction, without requiring costly consensus or coordination; the lack of development expertise by ejidos; and a lack of definition of planning and funding for infrastructure. As usual, implementation details need to be worked out for this paradigm to bear fruit.

4.3. Subsidies on Supply: US Low Income Housing Tax Credit

4.3.1. Past Prevalence of Homeownership Subsidies

Rental markets are foundational for housing affordability. Some families cannot save for a down payment or qualify for a mortgage. Working-class households—like many others—may need to remain mobile and able to seek better employment opportunities.

Historically, housing policies in the US emphasized facilitating access of the middle class to homeownership. The Government Sponsored Enterprises (GSEs)—established in the 1940s and now fully nationalized—have provided implicit government guarantees to mortgage lenders and are the keystones upon which the American housing market rests. Likewise, the US MITD provides a major incentive for homeownership for those who qualify for credit. The MITD has been criticized for its regressivity (Poterba and Sinai, 2008) and for not yielding discernable positive social externalities (Glaeser and Shapiro, 2003).

The realization that conventional housing policies—based on homeownership and credit—were not assisting low-income families prompted new rental market programs. Section 8 rental vouchers represent the main demand-side program, which I discuss later. On the supply side, the mainstay program is the Low-Income Housing Tax credit (LIHTC).

4.3.2. Enter Supply-Side Rental Subsidies

The LIHTC was created in 1986 as part of the Tax Reform Act and is administered by the Internal Revenue Service (IRS). It provides tax credits to developers to partially offset the cost of building rental housing. Because tax credits are transferable, the policy is equivalent to a monetary subsidy. Keightley and Stupak (2014) provide an example of its functioning: *"Consider a new apartment complex with a qualified basis of $1 million (…), assuming that the credit rate is exactly 9%, it will generate a stream of tax credits equal to $90,000 (9% × $1 million) per year for 10 years. Under the appropriate interest rate, the present value of the $900,000 stream of tax credits should be equal to $700,000, resulting in a 70% subsidy."*

To qualify, developers must agree to rent at least 20% of their units to households with incomes at or below 50% of the area median income (AMI), and at least 40% of the units to households with incomes at or below 60% of the AMI. These units must be affordable for at least 15 years. Usually, eligible families must register with a local Public Housing Authority (PHA) for benefits and can gain access to these low-rent units through a lottery. The amount of tax credits is allocated to states on a per capita basis. In turn, states allocate credits prioritizing projects geared to the poorest and which remain rent-limited for the longest.

Since the program was created, it has provided credits to develop more than 3 million affordable units, serving about 7.5 million people, leveraging more than $100 billion in private investment. The program effectively targets the right populations: according to O'Reagan and Horn (2013), the LIHTC as implemented served a combination of low-income, very low-income, and extremely low-income households.

While many see the LIHTC as a mere subsidy, a perhaps unexpected benefit of the program has been the generation of national and local communities of developers specializing in affordable housing (Ludwig, 2013). These developers know the product and their customers, and have created a network of highly skilled, experienced, and connected professionals working on the segment.

4.3.3. Criticism and Lessons

The LIHTC program has faced several challenges and criticisms (Olsen, 2003). As with most other housing programs, one criticism centers on its meager funding; only 36 affordable rentals are available for every 100 extremely low-income renter households in the US (NLIHC, 2022). A general question on supply-side subsidies is whether they create new supply or simply disburse more money to developers for housing that would have been built anyway. Several research papers (Malpezzi and Vandell, 2002; Eriksen and Rosenthal, 2010) find evidence of crowd-out—homes that would have been built anyway are now being relabeled as LITHC. Crowding out may be less severe in declining or stable neighborhoods (Baum-Snow and Marion, 2009). However, these may represent the least desirable areas in terms of social promotion.

Note that some degree of crowd out could be socially acceptable: for instance, if low-income households gained access by displacing high-income ones. Yet policies that increase supply as much as possible are clearly preferable. After all, high- and middle-income households displaced by LIHTC construction may end up, in turn, displacing other non-subsidized low-income tenants from existing dwellings by outbidding them.

Large controversies relate to the siting of the buildings. Note that developers make independent project siting decisions based on the local supply and demand for the product—although local municipalities have the ultimate power to approve or deny projects in their voters' backyards. The LIHTC may not have been fully successful in promoting construction in high-opportunity neighborhoods. According to Dawkings (2013), LIHTC properties tend to be more clustered than one would expect at random. These clusters are in denser central-city locations with higher poverty rates and minority concentrations. However, neighborhood opposition and high land values make it difficult to build affordable housing in high-income neighborhoods. In addition, research tends to show positive externalities of new LIHTC buildings in low-income areas but perceived negative externalities in high-income ones—as captured by housing prices in adjacent properties (Baum-Snow and Marion, 2009; Woo et al., 2016). This suggests siting the buildings in working- to middle-class neighborhoods—but not in very poor or very rich ones. As exposited earlier, it may be too much to ask for one single policy to address multiple problems. Supply-side national subsidies ought to be accompanied by municipal action that helps integrate new developments into the local urban fabric (Ellen et al., 2016).

Overall, there are pros and cons to the use of this instrument—summarized by Desai, Dharmapala, and Singhal (2010). A salient question is whether policymakers could achieve the same impact at a cheaper cost—the reason why most economists tend to favor housing vouchers. On the other hand, developers may not have spontaneously served a market that they had avoided theretofore. In any case, proper policies that enhance the pros and minimize the cons are needed at the regional and local levels to complement supply-side subsidies.

4.4. Rental Vouchers: US Section 8

4.4.1. Subsidizing Choice

The Section 8 voucher is a federal program administered by the U.S. Department of Housing and Urban Development (HUD) providing rental assistance in the form of redeemable coupons, which can be used to pay for a portion of monthly rents. The vouchers are subsequently cashed in by landlords at face value. Voucher amounts are based on the family's income and size, and cover the difference between what a household can afford and the ongoing market rent.

To be eligible, households must have earnings below 50% of the area median income (AMI). Some localities may set higher income limits for specific populations, such as the elderly or disabled. The program is administered by PHAs, which are responsible for issuing vouchers to eligible households. As demand is higher than availability in most areas, PHAs ration them via lotteries and waiting lists. This random allocation arguably breaks horizontal equity (Musgrave, 1990). PHAs are also responsible for determining the reference market rents, and for ensuring quality standards. Note that the need for inspections adds to the cost of such programs.

Section 8 vouchers currently serve more than 2 million households. Research has shown that this subsidy has had a positive impact on educational, health, and economic outcomes of participating households (Carlson et al., 2011). The program allows households flexibility and control, as they can choose their dwelling. This feature should send the right incentive to housing providers: to attract these safe customers, they must supply attractive rental packages in good locations. However, there is evidence that households still choose relatively deprived low-income neighborhoods upon receipt of vouchers (de Souza et al., 2008; McLure and Johnson, 2015; Ellen, 2020; Chyn and Katz, 2021). Similar evidence was found in Chile by Selman (2022). Because of the dual objectives of providing affordable housing and moving beneficiaries to better neighborhoods, Tinbergen's rule suggests the need to supplement vouchers with additional policy instruments. For instance, Bergman et al. (2020) demonstrate that complementing choice vouchers with advisory services that inform and nudge customers toward better neighborhoods was successful in improving the quality of recipients' destinations.

4.4.2. Other Challenges and Lessons Learnt

As usual, a major limitation is lackluster funding. Despite the high demand for the program, Congress has not consistently increased its allocations, which has resulted in a reduction in the number of vouchers available. Another challenge has been a persistent scarcity of landlords willing to accept vouchers, especially outside of low-income neighborhoods. Benjamin et al. (2000) candidly illustrate the tradeoffs as potentially perceived by landlords:

"Subsidized tenants come with lower rental collection risk because part or all of the rent is paid by a public agency and accepting subsidized tenants may widen the potential tenant market. But subsidized tenants tend to reduce overall tenant quality and to impose higher operating costs. By accepting subsidies, landlords may also subject themselves to periodic site inspections that may increase capital costs. Further, subsidized tenants may eventually crowd out unsubsidized tenants, lowering the average quality of the resident mix."

While we may not like the implications, landlord perceptions about tenant "quality" are real. Whether these perceptions translate into real cash flows is debatable and should be further investigated. Beck (1996) illustrates common fears:

"*some landlords maintain that their discrimination against Section 8 recipients is justified, arguing that poor families with subsidies often overcrowd apartments, damage property, and make too much noise. Many landlords also refuse to accept Section 8 tenants because they do not want to deal with the attendant government requirements, which include signing a one-year lease, removing lead-based paint from apartments, and meeting specified housing quality standards."*

Real discrimination against voucher-holders—even if it is statistical in nature (Ewans et al., 2014)—is wrong and should be prosecuted. This implies the need for additional policy and enforcement apparatuses to complement the vouchers themselves. In circumstances where landlords' cash-flows are negatively impacted by renting to low-income households—even if such events are infrequent—additional policy tools may be necessary. For instance, additional insurance against unexpected costs to landlords, and other services and resources for tenants. Affirmative fair housing marketing efforts to convince landlords that voucher recipients are profitable tenants may be needed to combat misperceptions, although their effectiveness remains unclear.

While many aspects of housing voucher provision can be improved or are not well understood (Collinson et al., 2015), it seems to be effective in cost-benefit terms if it is properly targeted to those who would have struggled to access housing absent the program (Olsen, 2003).

4.5. Conservatorio: Social Entrepreneurship and Place-Making

4.5.1. Redevelopment with local buy-in

Conservatorio S.A. is a real estate development and private equity firm based in Panama City. It was founded in 2004 by Ramón Ricardo Arias, Patrizia Pinzón, and KC Hardin and currently controls more than $45M in managed assets. They invest, develop, and manage properties in the historic downtown of Panama City: Casco Viejo. Lately, it has expanded its focus to sites that will be connected to Panama's subway system—currently under construction—and represent opportunities for Transit-Oriented Development (TOD).

Real estate investments in old neighborhoods sometimes transform their original identities, hence eliminating what made them special in the first place. Hardin saw this growing up in Coconut Grove (Florida), where a vibrant community saw displacement and the dilution of the town's identity, becoming an undifferentiated residential area.

Conservatorio works on programs and strategies that allow local communities and businesses to remain in their neighborhoods. "*Long-term financial performance is explicitly tied to the health of the community. Thus, there exists an incentive to invest in maintaining the attractiveness and vibrancy of the neighborhood, as well as the health, wellness, and financial sustainability of its residents*." (Saiz et al., 2012). The company's model leverages the revalorization of their for-profit properties to cross-subsidize their social mission. In turn, social investments make future development in the area safer and more profitable.

The 28-block historic Casco Viejo neighborhood had experienced a prolonged decline as a result of the fast suburbanization of Panama City. In 1990, UNESCO declared it a world heritage site. This reactivated interest in redevelopment. Nonetheless, the declaration prompted the toughening of local building regulations, making it more expensive to rebuild. When Conservatorio initiated operations, Casco Viejo was a run-down, largely illegally-occupied neighborhood, with high crime rates. On the other hand, it had unique architectural and urban beauty, cultural relevance, deep social networks, and a rich history as the city's past economic center. Conservatorio focused on developing profitable projects while maintaining these positive aspects. They began with the transformation of the historical American Trade Hotel, which was then occupied by gangs. Conservatorio negotiated with their leaders and turned them into business partners. The company helped train former gang members as tour guides and involved them in the travel and cultural businesses. Building from that initial success, the firm developed a template of strategies to preserve the neighborhood's identity, and to partially capture the value thus generated.

4.5.2. Subsidies for Local Organizations and Business

Conservatorio offers below-market commercial rates to incubate local startups and small businesses and for community organizations—schools and academies, or daycares. This strategy spearheads the immediate reactivation of empty spaces and encourages activities that improve the local quality of life. They decide how much space to allocate to each organization by weighing its social value against the opportunity cost—foregone rental revenue at market rates. Their 'Space Curation Index' model uses weights derived from personal interviews with the local community.

4.5.3. Local Education and Employment

Conservatorio has created and supported job training and employment programs for locals. Their Esperanza program exchanges intensive skill training for the commitment to abandon any violent activities. The program also provides job placements in local businesses and facilitates funding for community-generated start-ups. This program is directly funded by the company. In addition, the firm devotes 2% of overhead costs annually to Calicanto—a foundation whose mission is to preserve the cultural and architectural heritage of Casco Viejo. They also support CAPTA, a non-profit dedicated to job training and placement of local women, some of whom are ultimately employed in businesses owned by the firm's hotels and restaurants.

4.5.4. Mixed-Income Housing

Conservatorio has inevitably influenced demographic change in Casco Viejo, but they aim to keep the most rooted members of the community in the neighborhood. For every luxury residential unit, they develop another unit priced at 45% of the market rate. They also provide mortgage guarantees on behalf of their social buyers. The firm mitigates credit risk by keeping these programs personal and getting to know the people in the neighborhood. This is akin to the relationship banking model in the financial sector (Agarwal et al., 2018). The firm effectively underwrites and mitigates credit risk via relationships: its social homebuyers know all members of the organization personally and are motivated to do well and repay their mortgages.

4.5.5. The Business Model is a Social Model for Investors

Conservatorio's business model creatines a sustainable and stable investment pool through place-making. Their current investors are focused on the long run, and willing to accept slightly lower yields. The firm develops, brokers, keeps, and manages its assets. They also provide complementary real estate services. They have been one of the most influential developers in the transformation of Casco Viejo and are both profitable and socially successful. Their projects and properties have increased their value exponentially. And key players in the original community have been able to stay in the area and profit from new business opportunities.

The vibrant local community, the original essence of the neighborhood, and the cultural activities have made Casco Viejo a place where people want to live. This virtuous cycle decreased crime, redeveloped, and beautified decrepit historic buildings. The firm helped local businesses and organizations sprout. In turn, these activated the streets and garnered the interest of new investors, tenants, and owners.

Getting enough patient investors willing to replicate Conservatorio's model at the necessary scale to solve the housing deficit in most countries is not viable. Nevertheless, their approach could inspire future practice. Developers can be incentivized to provide public spaces, cultural amenities, and set aside a percentage of affordable housing in market-rate projects in exchange for FAR or tax bonuses (Rubin and Seneca, 1991).

Another lesson from Conservatorio is the importance of promoting a mixed for-profit and social entrepreneurial class. Architecture, Planning, and Business schools should collaborate to train real estate entrepreneurs who can develop financially successful projects that reward investment, but which also have positive social impacts—including the provision of some affordable housing. Planners and policymakers around the globe are not always pro-entrepreneurship, oftentimes hostile to it. And entrepreneurs are not always prone to place-making efforts. Around the world, this gap needs to be bridged. The more intrinsically and extrinsically motivated real estate developers are to provide affordable housing, the less the burden on the taxpayer to eliminate extant housing deficits.

4.6. Songdo – Large Scale Market-Driven Supply

4.6.1. More housing supply is not bad for affordability.

Affordable housing policy also involves a macro dimension. Making housing supply more elastic is always a winning affordable-housing strategy (Saiz and Salazar, 2019). This can be achieved via relaxed planning constraints, transportation investments, and more decentralized development. Nonetheless, an element of mass-scale housing provision may be necessary to get us there in some contexts. By providing as much high-quality housing as possible, prices and rents can be kept in check. In addition, facilitating cheaper access to housing for the poor does not exclusively entail building for this segment. Units that are now built to cater to high- and middle-income families will eventually filter down and become cheaper with age, to increase the supply at lower-income segments of the market (Rosenthal, 2014).

The public and advocates fear the very local gentrifying effects of newly developed high-amenity buildings, causing higher rents in adjacent buildings. Shane et al. (2021) recent survey reports:

"Taking advantage of improved data sources and methods, researchers in the past two years have released six working papers on the impact of new market-rate development on neighborhood rents. Five find that market-rate housing makes nearby housing more affordable across the income distribution of rental units, and one finds mixed results."

Therefore, more market-rate construction seems to have pro-affordability impacts even on adjacent areas, at least in the US. Further research in other countries is needed.

The positive effects of market-rate construction on the social segment **citywide**—as opposed to the local area—are even more immediate. Mast (2021) followed migratory patterns to find that out of each 100 people moving to a new market-rate building, 45 to 70 people will eventually have moved out of below-median income neighborhoods. This process takes the pressure out of the more modest market segments. Bratu et al. (2023) find very strong and similar results in Finland using the full registry of all citizens and housing units in that country.

In other words, people who move to expensive units leave space vacant in their previous homes for others. This process repeats via migration ripple effects, facilitating low-income individuals' access to homes in more economic neighborhoods. More new housing—no matter the market segment—tends to be better for affordability. Of course, this indirect ripple effect does not negate the need for more direct policies. Nevertheless, note that the construction of market-rate housing is not incompatible in most cases with building social housing simultaneously—lest local political pressures introduce constraints to make them so. In general, I argue, more **high-quality** housing is better than less.

Songdo represents a maximalist approach to large-scale supply in a democratic society. I do not necessarily think their model is appropriate for policy or replicable. Nonetheless, it illustrates some of the advantages and pitfalls of large-scale master planning for housing.

4.6.2. Songdo City

Songdo International Business District is a brand-new smart city located one hour away from Seoul and close to Incheon International Airport. It currently hosts about 175,000 people. The project was the result of a public-private consortium between the American development company Gale International, the Korean construction company POSCO E&C, and the Incheon Free Economic Zone Authority (IFEZA). In 2003, 2,250 acres of land were reclaimed from the ocean and construction began in 2005. The first buildings were occupied in 2015, and the initial master plan was completed in 2018. The plan designed a mixed-use development where activity occurs around parks, schools, and urban landmarks. The team of architects created neighborhoods using a grid of blocks surrounded by small-scale businesses, low-rise buildings in the perimeter, and set-backed towers. These blocks are open and seek to incentivize pedestrian movement, which differentiates Songdo from other developments in Korea.

The buildings are designed to conserve water and energy (We Magazine, 2022). Songdo has the highest concentration of LEED buildings in the world. Pneumatic tubes take garbage bags away to energy generation plants. And a digital surveillance system covers all public spaces to reduce crime and traffic incidents. Without major democratic check-and-balances, this latter feature is clearly not desirable in most other contexts.

4.6.3. Public Private Partnership to Attract New Investments

The private investors developed the housing buildings in phases and worked to entice international and domestic companies to the project—including plans for a bio-cluster. POSCO moved its headquarters to Songdo before any residences were built to seed economic activity from inception. Private investors have also provided all necessary public amenities: schools, hospitals, phone services, retail facilities, media, security, and leisure spaces. Songdo is planned to be a Korean hub for education and hosts numerous cultural spaces, convention centers, art and science museums, and theaters. It also includes golf courts, gyms, playgrounds for kids, and other open-space amenities. These represent the largest private development investments in history, at around $40 billion.

The public sector provides public systems of maritime and terrestrial travel and is responsible for public security, transportation, and healthcare services. Tax incentives are offered to attract businesses and institutions. Private and public institutions work together to manage underground facilities, geographic information, environmental pollution, and public facilities. These are all smart services relying on automatized systems and technology.

4.6.4. Short-Term Mixed Results and Lessons

As of 2023, the city is not fully occupied and the expected international investments—in the form of firms and institutions moving to the city—have not yet materialized per the planned timeline. Observers criticize the new city for being too far from downtown Seoul and jobs in the capital. Consequentially, its private returns on investment have been modest or negative.

Gale International has argued their bet on Songdo is long-term. Like Conservatorio, the company is looking to profit from long-term externalities of the project (Poon, L., 2018). Songdo's fast-paced transformation is still going on. In the next few years, the city will probably be unrecognizable from what it is today.

While most potential losses are accruing to private capital, I am not aware of a cost-benefit estimate for the public tax exemptions and other investments. These types of projects need absolute transparency about public investments, tax exemptions, disbursements, and any other implicit or explicit help or subsidies. They need to pass both market and open-society tests.

On the positive side, Songdo exemplifies the potential to incentivize housing and economic development. Korea's principal objective was to create housing for its population in the context of growing unaffordability. Slowly building infill residential structures in extremely dense downtown Seoul was probably not going to be sufficient. While avoiding the lion's share of investment, the government has managed to generate considerable private housing, economic activity, and infrastructure investments.

Planning a development like Songdo in other countries would probably be impossible, and most likely unadvisable. Nevertheless, there are some lessons we can draw from it. In addition to generating new residential units, policymakers need to contemplate how the people in those dwellings will live. They need to consider access to jobs, recreation spaces, and the fulfillment of other needs. Another important lesson is the strategic selection of the location. Songdo's may have been located too far from existing population centers—although the jury is still out in the long run. Sites that are already central and that can serve as transportation hubs can better guarantee the financial activation of major housing projects. This could be incentivized or regulated with zoning laws and permits—as in transit-oriented development (Ibraeva et al., 2020).

4.6.5. Large Master Planning and PPP Can Work, but Only under Certain Circumstances.

While macro plans are unlikely to be a silver-bullet for unaffordability, they can complement other programs—but only if they are well-designed. Government-driven macro housing projects almost invariably end up in failure. They tend to be in peripheral areas, sited and designed at the whim of an unaccountable leader. Large megacities and infrastructure projects may also be deployed as undesirable forms of militaristic social control (Ades and Glaeser, 1995; Saiz, 2004). In addition, large public investments in government-led construction are typically inefficient and tend to be associated with corruption and poor construction quality (Buckley et al., 2016). Clustering the poor or isolating those who are more strongly allegiant to the leader are seldom good ideas.

On the other hand, new supply is sorely needed in many cities and—in a few others—can only be realistically provided at a large scale. The following principles may empower citizens to take advantage of large master-planned communities that expand the housing supply:

1. *Involve massive upzoning:* Large-scale developments will work better in areas where major value is created by upzoning land. Auctions for density—involving municipal governments selling air rights—can be deployed to raise revenues to finance public costs and social housing (Smolka and Maleronka, 2018; Elmendorf and Shanske, 2019). Achieving higher densities via master planning in municipalities that were previously reticent is an important goal of this type of development. This objective can be better achieved by providing more local amenities, thereby dampening opposition to new housing. Regarding this issue, Saiz and Salazar (2017) argue that:

"Reducing NIMBY pressures in the suburbs requires building coalitions and garnering support from local communities. This can be done by offering a positive holistic vision for development. In some cases, this underscores the need for large master-planned neighborhoods that offer plenty of amenities to be enjoyed by all in town. A prototypical NIMBY situation pits developers of a multifamily project against its immediate neighbors. But to be fair, many scattered, isolated multifamily buildings do not add much to their surrounding communities. The execution of suburban development master plans can add value to existing residents' lives by delivering mixed-use, walkable town centers that provide amenities such as parks, promenades, playgrounds, and restaurants. These large-scale, multi-period developments can also anchor civic activities—festivals, farmers' markets—or integrate and centralize public buildings—senior centers, libraries—in a convenient and enjoyable location. Existing residents may be even more likely to support such plans if they bring permanent local jobs, have well-designed positive impacts on local education systems, and replace previously developed sites that were eyesores."

Large-master planning will probably not add much value in low-quality areas where the market is not demanding higher densities—unless new transportation infrastructures are involved.

2. *Large-scale development must be privately financed:* Markets send signals about the desirability of specific locations and about the ensemble value of privately-planned communities. A necessary—but not sufficient—condition to avoid "white elephant" communities is for new large-scale projects to include private participation from developers, households, and other organizations. Public Private Projects (PPP)—where governmental authorities retain some degree of control over outcomes—can deliver affordable housing if well-managed (World Bank, 2020). Modern projects mostly or solely financed by the government have a relatively poor track record, with some notable exceptions—Singapore, Noida, and a few others.

Nevertheless, as failed exurban developments around the world and ghost cities in China show, private or popular participation may not be enough. Problems can arise in situations where customers buy and prepay before development, based on plans. If we suspect that homebuyers do not have enough information about the development and the costs associated with living there, it should be publicly disclosed *prior to the purchases*. If the main motivation of buyers is to park money and leave the units unoccupied—as in many Chinese new macro-developments in tier 3 and 4 cities (Rogoff and Yang, 2022)—markets have a hard time discerning signals about locational desirability. In such cases, it may make sense to require developments to include a fraction of rental housing, especially in the initial phases of a project: undesirable locations will not succeed in the rental market if they do not provide access to jobs and amenities.

3. *Civil Liberties:* Large-scale development should go through the **representative democratic process and include grassroots input**. While the focus should be on increasing supply to allay affordability problems, elected officials and the public should actively participate in designing and dreaming about the types of new communities they want to see sprouting; the focus should not be on the *if*—on which NIMBY is king—but on the *how*. New projects should include the input of local organizations and engage local universities—e.g., by having classes and student projects come up with new ideas about the development.

4. *Economic Viability:* Development plans in new large-scale sites should include studies about **access to jobs** or clearly delineate strategies for employment creation. Generally, each job catering to local needs—e.g., dentists, restaurant workers, municipal employees—needs to be supported by a number of export jobs—producing output or services that are traded with other cities. For instance, Moretti (2010), Moretti and Thulin (2013), and Toews and Vézina (2022) provide estimates about the number of export jobs necessary to sustain a local economy. Externalities of the new project and interactions with other local productive agglomeration economies should also be considered (Duranton and Puga, 2004).

5. *Cross-subsidies:* Affordable housing should be included in these developments. To cross-subsidize the affordable part and generate returns to investors, a sufficiently large market-rate fraction is required. Upzoning can generate enough value to achieve both goals (Kim, 2020), but local officials need to understand the financial tradeoffs. Unfortunately, city planners are not usually trained in real estate finance or—in a few cases—may observe such skills with suspicion. The lack of understanding of project financials among public officials is one of the main challenges for such housing PPP interventions (Friedman, 2016).

6. *Infrastructure and amenities:* As in Songdo, large developments should be designed to provide the necessary infrastructures and amenities in cooperation with local authorities. Funding for the upfront costs should come from real estate sales or private investments. Impact fees are an efficient way to finance these costs (Brueckner, 1997), perhaps with cross-subsidies that mitigate affordability concerns on any social housing (Evans-Cowley and Lawhon, 2003; Been, 2005). By providing compensation for development, impact fees may facilitate the acquiescence of current

neighbors to new development (Yinger, 1998; Burge and Ihlanfeldt, 2006). Of course, municipal authorities should be able to connect the new water, sewage, electricity, cable, and transportation systems to their respective networks. This, in turn, implies that either local tax revenues or a share of national ones generated by the project should be captured by the municipality.

7. *Long-term infrastructure financing:* large master-planned developments not only require upfront funding but also a plan for viable ongoing **local** tax systems to sustain recurrent expenditures on roads and infrastructure maintenance. Gadenne (2017) shows that recurring, locally-raised public funds tend to be better spent than grants from higher-level jurisdictions.

8. *Accommodating policies within well-established boundaries:* large housing developments require flexibility in implementation. Basic principles should be established in the master plan, but development should not require many further approvals—as in form-based zoning codes (Talen, 2009). Much of the planning and negotiations with the public should be implemented upfront, so that successive development waves can quickly respond to market circumstances.

9. *Acceptance of phased development*: Large-scale developments usually go through several economic cycles. Therefore, policymakers must allow for flexibility leading to their optimal phasing (Ott et al., 2012). Required minimum upfront investments should be clearly specified before development takes place.

4.7. Rental Housing Associations in The Netherlands

4.7.1. Concept and Operations

Dutch Housing Associations (HA) are private, nonprofit enterprises that develop and manage affordable housing in the Netherlands. They account for approximately 75% of the three million rental homes and 35% of the entire housing stock, per 2016 estimates. HAs must lease 80% of their vacant units to low-income families and 10% to people with intermediate incomes. Ten percent can be leased to high-income families, which allows the associations to cross-subsidize their social mission. A government-regulated point system determines each unit's rent, always substantially at below-market levels. Twenty-five percent of the total points are based on the tax-assessed market value of the property and 75% on the dwelling characteristics (Schilder and Scherpenisse, 2018). The higher the number of points, the higher the allowed rental price. Points are also awarded based on factors such as size of the housing, facilities, and energy efficiency. The point system provides incentives to partially fund improvements with rental revenue growth. Subsequently, rents can only increase at a prespecified percentage annually (currently 3.3%).

4.7.2. Funding and financing

HAs gained financial independence through policies in the 1980s-1990s that decentralized, deregulated, and denationalized social housing. The most notable was the 1995 Grossing and Balancing Agreement, by which housing associations' outstanding debts were written off against future government subsidies. Combined with strong prices in the housing market, this helped infuse associations with substantial equity. HAs utilized a revolving fund model that—in addition to their equity—is sustained through rental revenue from tenants and sale proceeds from parts of their stock to investors. Excess funds are reinvested into renovating existing buildings, developing new affordable housing units, or developing neighborhood regeneration projects.

For example, it is possible for HAs to nimbly sell properties in the most expensive neighborhoods and exchange them for larger housing portfolios in middle-class areas. However, the tradeoff between affordable housing and social outcomes comes to the forefront in these cases, as tenants randomly assigned to low-income neighborhoods fare worse in the labor market (van Dijk, 2019).

The associations do not require outside investors and can accept a lower or zero return on their equity. These, and their lower credit costs, allow them to charge lower rents (Schilder and Scherpenisse, 2018). Importantly, they do not utilize direct government subsidies. Instead, they benefit from cheap loans obtained through a three-level guarantee structure (Aedes, 2013):

1. *The Central Fund for Social Housing* (CFV in Dutch): a special independent public body that is financed through annual levies on all housing associations. CFV financially supervises the associations and intervenes with monetary support when they are facing difficulties. The system acts as a reinsurance scheme: by reducing the risk of each individual HA, they can all obtain cheaper credit. CFV also advises the central government in matters regarding social housing.
2. *The Guarantee Fund for Social Housing (Dutch: WSW):* a private organization serving as a second guarantor. The fund is financed through a single contribution from the State and fees paid by the associations when contracting a WSW-guaranteed loan. The fund guarantees loans on new developments, housing improvements, and portfolio acquisitions.
3. *The Dutch State and municipalities:* government institutions can provide interest-free loans that serve as a last resort if funds from the WSW are insufficient.

This triple guarantee system has allowed the WSW to maintain top credit ratings and gain access to public capital markets. HA finances its debt at large discounts. The approval for a WSW guarantee is based on the creditworthiness of the association, whose financial position is evaluated based on its assets. If admitted, the association must meet certain solvency requirements. In addition, securities provided by the WSW are "*to stay below a set ceiling determined annually by subtracting the loans an association has borrowed from its total assets*" (Boelhouwer, 2003). While driven by a social mission, the system currently relies on sophisticated financial know-how, professionalism, and prudent underwriting. To reach that point, nonetheless, excessive financial risk-taking from some HAs had to be curtailed (Aalbers et al., 2017).

4.7.3. Regulation: checks and balances

The CFV operates as the chief financial regulator of the HAs. Financial assessments of key metrics such as loan-to-value and interest coverage ratios are made through mandated due diligence, involving annual reports and supplementary information. The CFV provides early-warning signals to the national government when an association is experiencing financial weakness. A distressed association cannot attain WSW guarantees, but CVF provides interest-free loans for three years until self-sufficiency. During that period, another CFV member will take on management responsibilities and engage in financial restructuring if necessary. The CFV will typically cover 50% of the costs of such an operation, while the local municipality would bear the other half (Boelhouwer, 2003). The current system of checks-and-balances—combined with targeted regulation and supervision—arose from the "*unacceptable amount of scandals that characterized Dutch social housing after 2000*" (Hoekstra, 2017).

More recently, the European Union reached an agreement with the Dutch government to limit the market scope of HAs. Private investors sued, claiming HAs derived an unfair competitive advantage from the three-tier government-backed guarantee. The settlement resulted in restricting state aid to social rental dwellings (Capital Value, 2015; Hoekstra, 2017). In addition to stricter financial reporting requirements, housing associations are mandated to value their property at market prices.

4.7.4. Criticism and Lessons

In my view, the Dutch HAs model represents one of the most successful housing policies worldwide and is ripe for replication in other countries. The model has been perfected over the years through regulations providing the right economic incentives and checks and balances. Replicating the model requires careful legal and intuitional reform, stemming from a belief that decentralized, non-profit entrepreneurship can help solve housing affordability problems. This type of institution will not fare well in countries where politicians try to always be in control.

The 2015 provisions prompted by the EU have limited the ability of HAs to cross-subsidize: that is, reaping profits on commercial real estate operations to plow back into their social mission. Non-EU countries could experiment with more entrepreneurial strategies of cross-subsidization. Nevertheless, checks and balances must be in place to avoid HA insiders syphoning out cash flows from commercial operations for personal lucre or taking speculative risks.

Other problems with this social housing model are the strict income limits and the increasing ethnic segregation. According to Boelhouwer (2020) many low-income households have earnings slightly above the cutoffs. Given the high cost of housing, they may end up in a worse overall financial situation than some of those who qualified for the program. This is perceived as deeply unfair. These perceptions are enhanced among the native Dutch because immigrants have disproportionally qualified for a larger share of newly available units (Heelsum, 2007).

4.8. Housing Cooperatives (Bostadsrätt) in Sweden

4.8.1. Mother-daughter model

Housing cooperatives are popular in Scandinavian countries. However, most are modeled or adapted from the original Swedish model. Cooperatives constitute approximately 23% of the total housing stock in Sweden (Lago, 2018). They follow a tenant ownership mother-daughter development model: a "mother" secondary cooperative association—with a national footprint—builds and sells housing units to the smaller "daughter" or primary cooperative—encompassing all the residents in the building (Cooperative Housing International, 2022).

The model was established in 1923 by HSB Riksförbund (HSB), a savings bank and cooperative housing developer. HSB allowed prospective tenant-owners to save before becoming eligible for a cooperative apartment and established a member of 'daughter' regional cooperatives across the country. The aim was to create a "*whole system of building, managing, and financing a cooperative contained in the one organization*" (Birchall, 2009). A similar agency was later established in the 1940s by the building trade union Riksbyggen. HSB Riksförbund and Riksbygge are now the two largest secondary housing cooperatives, holding 75% of all memberships. The organizations offer homes for sale and rent, along with development and management services, to primary cooperatives. Most primary—or local—cooperatives have between 20-100 apartments—80 on average—and are mostly located in urban areas (Lago, 2018).

Members possess tenant-owner rights to a certain apartment within a building managed and owned by their primary cooperative. Tenant-owners pay an equity share, as in conventional purchase payments. The primary cooperative then takes on debt to finance the rest of the development costs. Members are subsequently required to pay a monthly fee proportional to the size of their unit. Fees contribute to the cooperative's operating expenses, capital reserves, and loan repayments. Members are responsible for repairs and maintenance of their unit, while the local cooperative is responsible for the common areas and facilities. In addition, each member has the right to sell their share at market price so long as the new tenant's membership is approved by the cooperative board. Shares typically trade at market prices. Members have unlimited occupancy rights if they meet all required obligations. They are also permitted to sublet their apartment to other individuals with the board's approval.

4.8.2. Project funding and long-term financing

A secondary housing cooperative is typically responsible for buying land, planning, entitling the development, and building the housing structure. They typically produce a "working class" product in location and typology. It then sells it to a primary housing cooperative association, which in turn sells its shares to prospective members. Tenant-owners fund 75% to 80% of the project **development costs**—as opposed to the final market value of the unit, which can be larger. The remainder is financed by the primary cooperative organization utilizing bank loans or funding from private institutions. There is currently no direct government financial assistance.

To finance their private shares, tenant-owners are eligible for bank loans on 75% to 90% of their equity down payment. In addition, HSB and Riksbygge offer savings accounts for future cooperative shareholders, allowing savers to subsequently apply for loans using the value of the cooperative shares as collateral. Existing savings account holders also receive first-priority on new developments (NCO, 2020) and secure a 30% tax deduction on interest expenditures. HSB also offers a security guarantee that *"protects the financial security of the housing cooperatives for the first seven years by purchasing any unsold apartments and taking financial responsibility for them"* (Cooperative Housing International, 2022). This guarantee—akin to an insurance scheme across primary cooperatives—reduces risks to lenders, enabling shareholders to obtain cheaper financing terms.

4.8.3. Checks and balances

As a juridical person, a housing cooperative can mortgage its percentual interest on the property. A tenant-owner can also pledge her shareholder's certificate as collateral for a loan. Upon doing so, the tenant-owner must notify the cooperative board, who annotates the liability in the cooperative's registry and notifies creditors of any outstanding debt that tenant-owner owes the cooperative. All these steps and relationships are mandated by well-established laws and regulations (Lindberg, 2018).

In the event of deteriorating financial conditions, the cooperative will raise its fees to service bank loans. Member tenant-owners are not personally liable for the cooperative's debt. Instead, the board assumes full responsibility. In the event that the cooperative goes bankrupt, the property is sold to a buyer who takes over administration and liquidates the assets to pay off liabilities. In that situation, the individual mortgages of tenant-owners remain, but the asset itself ceases to exist. Banks with a first lien on the property are guaranteed payment before other creditors. Bankruptcies are, however, not common as the cooperative and lenders will often renegotiate long-term payment plans. In a few cases, the property is converted into a rental building, and the members can become tenants instead of tenant-owners but lose their equity (Turner, 1997).

4.8.4. Lessons and Criticisms

The main advantage of cooperatives is that tenant-owners buy at construction costs rather than at market prices. They also require a lower down-payments, as the collective parts of the building are directly financed by the primary cooperative. Cheaper credits to the members and to the primary cooperatives are obtained via cross-collateralization of risk within and across local cooperatives. In addition, municipalities are predisposed to organizations with a social purpose, so they may obtain density bonuses and better land than for-profit developers.

An important lesson from this model is the need for entrepreneurship and professionalization of social housing advocate organizations. While ultimately idealistic in their goals, Scandinavian national housing cooperative organizations are experienced and excellent at developing, planning, financing, and managing real estate assets. They hire local administrators, collect payments, and renegotiate debt or foreclose on properties with consistently unpaid bills. They also operate as banks via their savings programs. Their operations and financials combine collective interest with the need for co-responsibility from tenant-owners. This professionalism contrasts with the failure of organizations where ideological constructs mattered the most, as in the cases of Savo Island Housing Cooperative and University Avenue Housing Cooperative in Berkeley, California documented by Barton (2014).

Overall, this is a successful model. Nevertheless—while making housing more accessible to many working-class families—it has not solved the affordability problem in the very expensive Scandinavian capitals. It is not a model that can provide housing to very low-income families absent subsidies. It may also be argued that it relies on the generosity of the welfare state in these countries, where bankruptcy problems may be less frequent. These caveats remind us of the necessity of multipronged action in housing policy.

The model is also difficult to export without proper regulations, and in the absence of determined, professional—idealistic yet entrepreneurial—mother cooperative organizations that channel activism into actionable results for their working-class members. The mother-and-daughter organizations also require checks and balances to avoid corruption or diversion of funds.

4.9. Community Land Trusts in The United States

4.9.1. Functioning

A Community Land Trust (CLT) is a non-profit community-based organization acquiring land parcels and placing them into a trust designed to maintain long-term affordability. Land-lease structures are used to remove the price of the land from construction costs, which makes the properties more affordable. Resale restrictions are included in the ground lease agreement.

Individuals with a pre-tax income that does not exceed 80% of the area's median are eligible. They can purchase a house on land owned by the CLT at below-market prices and obtain a special mortgage guaranteed by the GSEs. These loans only require a 3% down payment (Ceizyk, 2022). Eligible participants are required, however, to pay for a private mortgage insurance (PMI), allowing for risk cross-collateralization.

The CLT and the homeowner enter into a long-term, renewable, and inheritable ground lease agreement, typically for 99 years. The agreement limits capital gains at resale, thus maintaining affordability for the next buyer. The homeowner is allowed to recapture capital improvements made to the property if advanced notice is provided (Burlington Associates, 2007). The CLT also retains the power to compel the homeowner to make necessary repairs and maintenance.

If a homeowner defaults on her mortgage, the CLT provides assistance following the provisions of the ground lease. The lender must notify the CLT of the default, which in turn has 60 days to remedy it. If a remedy is not possible, the lender can place the property under foreclosure, but give the CLT an opportunity to purchase the building (Burlington Associates, 2007). The CLT continues to own the land.

4.9.1. Funding and Management

The CLT can acquire property, receive donated or discounted land from donors or local governments, or buy it through bargain sales, where the seller can claim a tax deduction for losses.

They receive funding through governmental grants, private donations, or tax-increment financing (TIF). TIF schemes are such that the future property taxes from a real estate development revert to the developers. Such equity funds are often used to cover start-up and operating costs. CLTs can also receive private loans or lending assistance from Community Development Financial Institutions—specialized non-profit or state-funded financial institutions. They can subsequently generate revenue from ground lease fees, lease re-issuance fees, membership dues, operating donations, and service fees. If the CLT itself ceases to operate, it must transfer its properties and land to another comparable charitable organization or to the state. CLTs are managed either through local assemblies or representative civic boards (Lawther, 2005).

4.9.2. Criticism and Lessons

CLTs provide affordable housing to people who are rooted in their neighborhoods. It is partially a value capture instrument, whereby land appreciation is reinvested into local affordability. This is a very interesting aspect of the institution, in common with very different alternative programs—such as those of the Singapore Housing Authority (Phang, 2018). CLTs are also seen as an instrument for local economic development. As such, conflicting interests may arise, as per our discussion earlier.

Another important aspect of CLTs is that they are designed to empower local stakeholders. This is a good outcome when it is achieved. Nevertheless, it is important to note that extremely ideologized organizations have a hard time providing benefits at scale and surviving the necessary day-to-day operational grind, where hard-work, professionalism, and problem-solving on behalf of their working-class and low-income clients carry the day. As with the Dutch HAs and Scandinavian cooperatives, establishing a strong professional ethics in management and execution with strong checks and balances on the organizational structure and money management is paramount to the success of CLTs (Bailey, 2010). Barton (2014) describes how the survival of local grassroots housing movements in Berkeley, California, was achieved through professionalization:

"Although progressives gained long-term control of the city government, over the years they largely abandoned the goal of economic democracy due to a combination of limited local resources, changing political priorities, and the need for professionalism in housing production and management. Today, most of the City's housing funding goes to two highly professional regional nonprofit housing organizations (…)"

Several scandals involving fund misappropriations and mismanagement paved the way for such an outcome (Barton, 2014). By considering CLTs as fertile ground for "grassroots organization," some advocates may have inadvertently ensured that the model be almost impossible to scale up for wider provision of affordable housing. Its footprint is, therefore, very small. Bassett (2005) and Midheme and Moulaert (2013) find the exact same problem in Kenya. The latter evaluate that the success of a CLT "*depends on the ability of residents to assemble functional community institutions*."

5. Conclusion

Housing prices and rents have been growing faster than inflation in metropolitan areas across the world. Markets are powerful tools to provide widespread access to housing. However, they need to be accompanied by proper regulatory controls, urban planning that optimizes externalities, investments in public goods, fiscal redistribution, and targeted policies for the segments that cannot attain housing otherwise. Such governmental action also requires checks and balances and competitive pressures to minimize corruption, mismanagement, and ideological or partocratic biases. In the future, technological innovation may move us forward, allowing for a relaxation of the tradeoffs implied by the current institutional design choices.

In the paper, I described the basic parameters and foundations behind global affordable housing policies and strategies. I also provided several case studies that inform the discussion. At least thirty different economic strategies can be combined to conform a large field of potential interventions.

Before implementing programs, policymakers must understand their own goals, and consider what policy tools are available: the more tools that can be deployed, the better the outcomes. Today, we are building the housing that will be used over the next forty years or so. Moreover, we are planning the land on which units will be built over the next twenty years. Hence, land-use and housing policies—as educational and health ones—require a degree of inter-partisan consensus at federal and local levels. Back-and-forth fluctuations in legal frameworks and implementation introduce uncertainties that make housing even more expensive.

Policy targeting is essential. In developed and advanced developing countries, housing programs should target the poor. Blanket subsidies are usually unproductive, as they generate general equilibrium impacts that undo their partial equilibrium effects on affordability. In countries with considerable degrees of informality, the poorest may be inframarginal to interventions at realistic budgetary levels. In these areas, one may make the case for moving out of informality first those marginal households who can be helped with feasible interventions.

Policymakers also need to think carefully about the context—especially about the local elasticity of housing supply. They ought to consider the incentives, motivations, and behavior of different agents: program beneficiaries, other consumers, suppliers, and the public at large. Proper design—incorporating expected behavioral responses—and professional implementation are critical to the success of housing policies worldwide.

Table 1

Affordable Housing economic Strategies in the Case Studies

		Habitat International	Chinese Villages	LIHTC	Rental Vouchers	Conservatorio	Large-Scale Development	Rental Housing Associations	Scandinavian Coops	Community Land Trusts
1	Eliminating previous regulatory and policy barriers		✓				✓			✓
2	Eliminating lack of competition and market failures				✓			✓	✓	
3	Facilitating filtering of the existing stock					✓	✓			
4	Rent or price controls									
5	Reducing the cost of credit								✓	✓
6	Reducing mortgage down-payment requirements	✓				✓			✓	✓
7	Facilitating or incentivizing household savings	✓							✓	
8	Cross-collateralization, reinsurance, and risk reduction					✓		✓	✓	
9	Sites and services									
10	Slum improvements	✓				✓				
11	Land regularization and entitlement of informal housing									
12	Reduction of construction costs	✓	✓						✓	
13	Reduction of onerous ancillary construction requirements	✓	✓							
14	Modular and prefabricated housing									
15	Assistance to self-construction	✓								
16	Recycling and reusing commercial assets									
17	Increasing occupation densities in the current stock		✓							
18	Improvements of low-quality stock	✓				✓				
19	Small-sized units	✓	✓			✓				
20	Increasing residential density in greenfields		✓				✓			
21	Mandatory inclusionary zoning					✓				✓
22	Density bonuses for inclusionary buildings		✓				✓			
23	Direct demand-side subsidies to home buyers	✓								✓
24	Direct supply-side subsidies to builders			✓						
25	Targeted revenue-neutral housing tax redistribution									
26	Demand side subsidies to rental housing				✓			✓		
27	Reducing barriers to rental provision		✓	✓	✓			✓		
28	Cross-subsidies in master planning					✓	✓			
29	Public and non-governmental land ownership									✓
30	Non- or mixed-profit entrepreneurship						✓	✓	✓	✓

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