

Real estate production, geographies of mobility and spatial contestation: A two-case study in Santiago de Chile[☆]

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ABSTRACT

This paper addresses the links between real estate production, transport infrastructure and class-related spatial tensions in the context of urban neoliberalism in Chile. As case studies we focus on two of the most intensely redeveloping areas in Santiago, the Estación Central municipality in inner Santiago which experiences rapid high-rise property-led redevelopment, and the peri-urban growth zone of Chicureo in the municipality of Colina. From the perspective of urban political economy and using mobility-related questionnaires, in-depth interviews with inhabitants and media analysis we detect important differences between inner-city and peri-urban dynamics. While the redeveloping inner area of Santiago, in spite of being an exclusionary space where lower income-oriented affordable housing is absent, is not a disputed space in terms of access to mobility means, the expanding fringes of the city show strong class-related differences among new and old inhabitants. It seems that with view to mobility opportunities urban neoliberalism has variegated geographies that at the same time might show temporarily positive (Estación Central) and very negative results (Chicureo). In terms of public policy these results indicate that the inner area of Santiago is an opportunity for locating social housing production, given the relatively equal access to mobility opportunity for the different income groups. In the meanwhile, the deepening of mobility-related inequalities on the urban peripheries is highly problematic and needs more scholarly and political attention.

1. Introduction

Since the early 1990s Santiago experienced rapid modernization and enlargement of its privately-built housing stock, along with the supply of public and private transport infrastructure and transformations in the institutional landscape of urban governance and planning (Zegras and Gakenheimer, 2000; De Mattos, 2011). In that regard, Santiago is not an atypical case for Latin American metropolises in times of neoliberal globalization where the influx and circulation of national and transnational finance capital and planning ideas related to urban form, transport and mobility are boosting the transformation of the built environment on the one hand and the implementation of new regulatory regimes of land use and transportation planning on the other (Roberts, 2005; Janoschka et al., 2013; López-Morales, 2016b).

While currently for Latin American cities there is literature available on the political economy of urban growth and the intensification of land use (Janoschka and Hidalgo, 2013), on transportation planning and Bus

Rapid Transit (BRT)-reforms (Figueroa, 2005; Paget-Seekins, 2015) as well as on daily mobility patterns (Jirón and Mansilla, 2014; Jirón et al., 2016), the functional and strategic links between real estate production, transport infrastructure and spatial contestation only recently have begun to be scrutinized. For instance, aspects that have been addressed are the relation between inter-urban highways and peri-urbanization through gated communities (Blanco and San Cristóbal, 2012), land value impacts of BRT implementation (Rodríguez and Mojica, 2008) and the empirical and conceptual links between gentrification, mobility and transport (Blanco et al., 2014; Apaolaza et al., 2016).

This paper brings a critical urban political economy perspective to the nexus of real estate production, transport infrastructure and spatial contestation. We ask how, by whom and for whom new real estate projects and transport infrastructures are developed, analyze the differential characteristics and possibilities held by incumbent actors to use transport infrastructure, and how real estate agents, transport

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operators, and regional and local-level planning regimes intertwine in such a highly neoliberal setting as is Santiago, Chile. As case studies we focus on two of the most intensely redeveloping areas in Santiago de Chile, the inner-city municipality of Estación Central under rapid high-rise residential redevelopment, and the peri-urban growth zone of Chicureo. This comparative research design allows us to shed light on the different actually-existing assembling dynamics of real estate, transportation and the class-led contestation of space present in one city region, and thus avoid overgeneralization based on a single case only. Our results show that the inner area of Santiago is not a disputed space in terms of access to mobility means (while it is disputed in terms of residential affordability) while the expanding fringes of the city show strong class-related differences among new and old inhabitants, holding contrasted income levels. Based on this finding we claim that with view to mobility opportunities urban neoliberalism has variegated geographies that at the same time might show temporarily positive (Estación Central) and very negative results (Chicureo). In terms of public policy these results indicate that the inner area of Santiago is an opportunity for locating social housing production, given the relatively equal access to mobility opportunity for the different income groups. In the meanwhile, the deepening of mobility-related inequalities on the urban peripheries is highly problematic and needs more scholarly and political attention.

The paper follows, in section two, with a theoretical discussion on the political economy of real estate production, transport infrastructure and unequal mobilities under urban neoliberalism. Especially we develop how the discussions of these topics in Latin America converge around the concepts of gentrification and spatial capital and how they play out in inner-city and peri-urban areas in Latin America. After briefly giving some contextual and historical information on the neoliberal urbanism, real estate and transport infrastructure in Santiago in section three, in section four we explain the explorative and qualitative methodology that was applied and the rationality of case selection. Section five then describes the historical and geographical features of the two cases in order to be able to better situate the analysis of the assembling dynamics of real estate production, mobility patterns and spatial contestation in section six. The paper closes in section seven with a discussion on the findings and a brief conclusion.

2. Real estate production, transport infrastructure and unequal mobilities under urban neoliberalism

Following Sager (2011: 149), we understand urban neoliberalism broadly as “a restructuring of the relationship between private capital owners and the state, which rationalizes and promotes a growth-first approach to urban development”. Both real estate production and transport infrastructure are parts and parcel of urban neoliberalism and entrepreneurial urban governance (López-Morales et al., 2012) as the more specific underlying policy orientation. In the latter sense cities try to attract increasingly mobile capital through strategies of property-led regeneration and the intensification of land use (Logan and Molotch, 1987; López-Morales, 2016b), and the modernization and extension of transport infrastructure (Paget-Seekings, 2015; Harris, 2013). Through a range of strategies and often new institutional arrangements (local development corporations, business improvement districts, urban megaprojects, the franchising of highway or public transport concessions, for the latter BRT being a prominent example) the state offers finance capital incentives for investing in real estate and infrastructure markets in certain urban places.

Most private real estate production under urban neoliberalism (apart of state-led social housing provision) is about the production of and capitalization on ground rent increases through cycles of disinvestment and reinvestment and in general the intensification of land use, be it in inner-city or peri-urban locations (Smith, 2002; López-Morales, 2015, 2016a). Highlighting their class-based and socially problematic character, these processes can be understood as

gentrification, that means a combination of (1) capital (re)investment in land and real estate markets in certain locations with correspondingly rising land and housing prices, (2) the arrival of investors and residents with higher paying capacity than the people living in the re-invested areas beforehand, (3) changes in labor, commercial and recreational activities and landscapes controlled by the arriving, more affluent agents, in a sort of habitus creation of certain prime spaces (Centner, 2008); (4) direct or indirect (and often long term) displacement or exclusion of social groups holding lower socio-economic status than those entering the gentrifying neighborhoods (Rerat and Lees, 2011; Casgrain and Janoschka, 2013; Blanco et al., 2014). This definition dialogues with what Lees et al. (2016) have defined as ‘planetary gentrification’, namely the different forms that the exertion of economic power over certain spaces generate in the increase of socio-spatial polarization in cities around the world.

Further, in their contribution Blanco et al. (2014) propose an analytical framework to integrate the assessment of the unequal access to transport and mobility of different social groups into the analysis of gentrification. Taking up the work of Rerat and Lees (2011) and Kaufmann et al. (2004), they built their framework around the concept of spatial capital. Spatial capital comprises three key elements: a) accessibility, b) competence and c) appropriation. A different approach to spatial capital can be found in Centner (2008: 197), for whom space can represent the main asset to be disputed among different classes, hence “we can imagine how the struggle over spatial domination could be connected to the use of economic, cultural, or social capital, or all three [...] in a field where material space is at stake.” While Blanco et al. (2014) understand spatial capital as both territorially anchored and individually appropriated opportunities and capacities to move in (urban) space, for Centner (2008: 194) spatial capital is rather an “exclusionary tool deployed by privileged city users”. While the former authors use of the concept of spatial capital highlights mobility and movement, the latter one reflects on the *spatializations* of economic, cultural and social capital and thus material and symbolic practices through which space is claimed and appropriated by “the imposition of one's group's norms on another” (Mace, 2017: 124).

An important but often only implicitly assumed aspect in the relation of real estate production, transport infrastructure and spatial capital is that of metropolitan geography. Besides other symbolic, physical or functional characteristics, the more central or connected to transport infrastructure an urban neighborhood is, the higher accessibility it provides what is attractive both for real estate developers and their clients. Relatively easy access to spaces of work, consumption and recreation facilities and a diversified range of public transport options, including walking and cycling, are available.

As Rerat and Lees (2011) have shown for some European cities, this expansion of mobility options is what new residents moving to central city areas are often looking for. In that sense the (re)investment of real estate and finance capital, triggered by capital-attracting local politics and zoning ordinances, might directly be linked to the desirability of the area and the increased aspirations of the incoming new residents to occupy it. Often previously derelict or marginalized urban space is transformed into an enormous source of economic capital when real estate developers and landlords capitalize on accessibility-related ground rent increases (Smith, 2002). This is more or less the norm in Chile, and specifically Santiago, where housing prices have been dramatically increasing in almost every quarter of the city (López-Morales, 2015, 2016a, 2016b). Thus, when gentrification occurs, traditional and socio-economically weaker inhabitants facing displacement, especially petty proprietors or tenants, will not only be dispossessed of the tiny portion of the ground rent they could obtain by selling the land, but also almost the whole of original residents can see the chances to stay put in those places and be able to keep using the mobility resources deployed there. The Estación Central case treated below shows very little differential access to transport infrastructures between new and old residents (in a place where new and old resident households show marked

income differences, and this can only be explained by the relatively widespread access of public transport available in the inner areas of the city; see López-Morales et al., 2017), unlike the peripheral case of Chicureo analyzed next, where public transport facilities are minimum and the newcoming elites rely almost entirely on far more costly private means of transport.

Different from the urban peripheries in North America and Europe, in Latin America suburban and peri-urban spaces historically have been settled by lower social strata. Large part of the land seizures (commonly known in Chile as *campamentos*) and public housing provisions from the mid-20th century took place on the urban fringes which for a long time in its majority consisted of informal settlements and precarious housing colonies, a mode of urban space production by some authors coined as peripheral urbanization (Caldeira, 2016). Since two decades or so the mechanisms of urban expansion in Latin America have been altered, very much related to changes in the modes of real estate production and the provision of transport infrastructure. With increasing access to finance capital and international planning know-how ever bigger gated communities for the middle and upper classes are built, connected to the urban centres via super-modern highway systems, giving way to social and physical landscapes that have been described as Latin American versions of post-suburbia (Roitman and Phelps, 2011; Heinrichs et al., 2011).

In these new urban peripheries or post-suburban settings the links between real estate production, transport infrastructure and spatial capital are different both from those of the past and those we can find in central areas. The most important trend is that in the last two decades the provision of transport infrastructure has been unbundled insofar as infrastructure is now increasingly customized to wealthier groups of citizens, privileging motorized private transport (highways) over public transit systems. While on the one hand lesser developed groups and settlements are bypassed, on the other hand “premium-networked spaces” are produced which leads to a sort of splintering urbanism (Graham and Marvin, 2001; Shatkin, 2008). Here new ‘world-class’ developments tend to aggravate segregation and fragmentation tendencies in so far as they lead to territorial enclosure and “deepen the already deep social inequalities” with view to spatial capital, as Oviedo and Davila (2016) have shown in one of the few existing studies on the subject for Latin American cities. In our Chicureo-case study we analyze if and how this is taking place in Santiago. To sum up, we see complex assemblages between material infrastructures, mobility opportunities and practices in different socio-spatial arrangements that may lead and may not lead to inequalities and contestation between different social groups.

3. Neoliberal urbanism, real estate and transport infrastructure in Santiago: historical antecedents and recent trends

As a consequence of the macro-economic policy seeking industrialization through import substitution, between the 1920s and 1960s, Chile saw massive immigration flows from the countryside into the larger cities, especially Santiago. High rates of population growth and lack of housing solutions led to massive informal land-takings and the provision of social housing colonies on the then urban peripheries. Here the lack of urban services soon became a major social and political issue. In that context from the 1940s the government intervened the public transport sector through the regulation of tariffs of private enterprises and also founded a public bus system. In 1969 the construction of the Metro subway system was initiated and the first line was inaugurated in 1975.

The path of profound neoliberalization in Chile was initiated in 1975, two years after the coup d'état in 1973 by General Pinochet. Amidst a deep deindustrialization of the Chilean urban economy that crucially hit former industrial districts in the inner area of Santiago and the imposition of a new flourishing tax regulatory environment aimed to promote the enlargement of a financialized local economy with

massive influxes of local and foreign speculative investment in real estate (Cattaneo, 2011), the field of urban development saw a major reform in 1979 with the enactment of the National Policy for Urban Development. One of the declared goals of the 1979 politico-institutional adjustments was to facilitate the creation of a proper real estate industry (nurtured by a very much unregulated banking system that soon would collapse in 1982) which would take charge of the housing crisis in a supposedly much more efficient way than the public sector did in the previous decades at providing social housing. Also the state-owned (in the 1960s) transport enterprise was abolished in order to submit public transport to the logic of the free market. However, the state stayed in charge of the subway system and various lines were inaugurated during this phase.

With the return to democracy in 1990 and especially under the presidents Frei and Lagos real estate development and the provision of ‘world-class’ transport infrastructure became key topics. Increased mobility and new transport infrastructure were integral parts of the globalization strategies and both reforms of the public transport system and the construction of a system of super-modern urban highways were envisioned. The reforms of the public transport system would later give way to the installation of the BRT-system Transantiago (Paget-Seekings, 2015) and for transport infrastructure a system for the franchising of highway concessions was enacted. Transantiago reorganized a previously chaotic bus system where more than 10,000 suppliers competed to offer bus services. From 2007 onwards, only eight firms would supply better-quality bus services in an integrated network that covers the nearly 70,000 ha space of this metropolitan area. The franchising of highway concessions lead to construction of five urban highways from the 2000s until today by national and multinational firms profoundly changing the spatial structure and accessibility patterns.

In Santiago, a metropolis of nearly 7 million inhabitants, no metropolitan level government exists and the regional government has only indirect democratic legitimacy, its head is appointed by the President of the Republic and thus is accountable to the national state level. On the one hand, land use and building codes in Santiago depend on each municipal-level governance¹ what produces a state of competition among ‘entrepreneurial’ local-level municipal governments who basically behave as land market suppliers (López-Morales et al., 2012). On the other hand the Metropolitan Land Use Plan (PRMS) is the preferred tool for orchestrating ex-urban growth which in its various important modifications (especially in the years 1997, 2003, 2006 and 2013) demonstrated to be equally developer-friendly (Lukas, 2014). Also, there have been other modalities of allowing for ex-urban growth, as the Law 3516, enacted in 1981, by which peri-urban land can be subdivided in parcels of 5000 m². This was possible in the Metropolitan region until 2006 on land that was by then not covered by the PRMS. In response to the neoliberal urban policy and planning dynamics in the last two decades various urban conflicts have evolved, mainly around the construction of transport infrastructure (urban highways) and the overtly developer-friendly local land use plans (Poduje, 2008; Sagaris, 2014).

4. Research design and methods

The present research on the links between real estate production, transport infrastructure and class-related spatial tensions in the context of urban neoliberalism in Chile is explorative and it draws on a multiple-case-methodology. Our two cases, Estación Central and Colina were selected as they are clear cut examples of the form development and redevelopment take place in inner and peripheral areas of Santiago, respectively. While Estación Central is one of the fastest growing inner-city areas, where large-scale private redevelopers currently supply

¹ Depending on where the city limit is drawn Greater Santiago consists of 37 to 42 municipalities while the Metropolitan Region comprises 52 municipalities.

extremely small and increasingly expensive (if priced per m²) departments (see López-Morales, 2015), Chicureo is so with view to ex-urban growth. Also both cases presented better access to field research and relevant available data, compared to other municipal districts.

Data analysis was conducted in two stages: first, secondary data analysis on the two cases (media coverage, reports, official statistics) was conducted, complemented with several field visits and the application of exploratory interviews with local key informants, such as real estate agents, residents, neighborhood groups and local activists for each of the two cases analyzed. After this inquiry, structured interviews were conducted in mid-2015 to assess the households' socio-demographic characteristics, behavioral aspects of mobility-related practices and the perceptions of socio-territorial changes occurring in the analyzed neighborhood.

The interviews were based on a flexible script (or semi-standardized questionnaire) comprising five “modules”, namely: 1) descriptive information of the interviewee; 2) descriptive information of the household and the household members (age, level of education, preferences for certain types of mobility); 3) information of the residential property occupied (housing characteristics, tenancy); 4) daily mobility behavior of each of the members, in both current and last residence, difficulties experienced to mobility (places and services that cannot be reached, redundant trips, etc.), and knowledge of the available networks by the interviewee; 5) perception of the changes experienced in the neighborhood and changes regarding the available transport/mobility supply in particular considering location, age and situations/scenarios which are considered by the interviewees as (potentially) conflictive.

The interviews also considered open narratives given by respondents. The unit of the inquiry was the household, and the number of interviews conducted, although small, was considered enough for a relatively exhaustive analysis: six interviews to new residents and five to old residents in Estación Central municipality (arrived before 2008), and five interviews to residents in gated communities and five to residents of the surrounding low-income neighborhood Las Canteras in Chicureo. Descriptive data and a summary report of these interviews and further instruments is shown in Table 1, as follows.

The overall logic of the research design and the applied methods was to generate narratives about the relations and assemblage dynamics of real estate production, transport infrastructure and mobility-related opportunities and contestations in different geographical settings, aiming to operationalize the two notions of spatial capital that inspire this research, (1) spatial capital as territorially anchored and individually appropriated opportunities and capacities to move in (urban) space (Blanco et al., 2014) and as (2) an “exclusionary tool deployed by privileged city users” over others (Centner, 2008: 194).

5. Two cases of real estate booms and socio-spatial inequalities

5.1. Estación Central

Estación Central municipality is located just three kilometers south from downtown Santiago. Historically, Estación Central has been characterized by a strong presence of industrial, transport and logistics infrastructure (most of the latter in outmoded condition). However, policies of deindustrialization and economic liberalization along with a series of specific changes in urban policy (López-Morales, 2015), determined that much of the land and infrastructure has remained unused for decades. A subsequent socio-demographic decline and pauperization of many traditional working class local residential communities exacerbated more population loss (between 1992 and 2002, the rate was – 8.9 and between 2002 and 2012, the rate was – 5.2; see INE 2012). Part of the decrease of the still negative rate of population growth in Estación Central is due to the massive influx of real estate investment and residential construction experienced in this place from 2010 on. According to the 2012 last national population census, the municipality hosted 120,000 inhabitants, and it is expected that number will keep increasing.

The inner case area analyzed (Fig. 1) more specifically in our explorative study is located in the western part of Estación Central, in the surrounding zone of San Alberto Hurtado, Ecuador and Las Rejas Metro stations (Line 1) along the Libertador Bernardo O'Higgins Avenue (commonly known as the Alameda road), the main East-West axis of the city. This case study area comprises around 74 new high-rise residential towers spread in around 122 ha. A real estate boom has been in place between 2010 and 2015, peaking in 2014 and 2015 as the largest numbers of projects were built during these years (14 and 16 projects respectively, a total amount of 7765 apartments in 2014 and 8510 apartments in 2015; see Fig. 2). Currently, Estación Central is the municipality that supplies the highest number of residential units among the 37 municipalities that comprise the Santiago Metropolitan Area, almost exclusively in up to 25-storey apartment blocks.

Causes for the booming real estate activity in Estación Central are manifold. First, this area responds to a spill-over coming from adjacent districts that experienced intensive concentration of real estate construction during the previous decade (Lopez-Morales 2015, 2016). The tightening of the construction codes in Santiago Centro municipality made several high-scale, privately owned real estate firms move out and redirect their location preferences towards Estación Central land, during the subsequent years.

Also, by 2014 and 2015, the imminent application of the new National Tax Reform Law (that would impose developers and property

Table 1
Descriptive data and methodological profile for Estación Central and Colina cases.
Source: authors.

Case	Estación Central	Chicureo/Colina
Location	Inner	Ex-urban
Areas analyzed	Surrounding areas of San Alberto Hurtado, Ecuador and Las Rejas Metro stations (Line 1)	Las Canteras (lower income) and Chicureo (upper income) enclaves
Population 2012	110.000	120.000
Total area size	15 km ²	970 km ²
Population growth	– 15% (1992–2012)	+ 115% (1992–2012)
Density	73hab/ha	1hab/ha
Distance to Santiago downtown	3 km	30 km
Local government	Yes	Yes
Number of structured interviews	11	10
Type of households interviewed	New residents (6) Old residents before 2008 (5)	Gated communities residents (5) Low income neighborhood residents (5)
Further instruments applied	Two interviews to real estate firms, focus group and participant observation with/of local residents' representatives (Junta de Vecinos – Neighbors Organization #5)	Two interviews to land developers, one interview to local government official, one interview with local social leader in Las Canteras

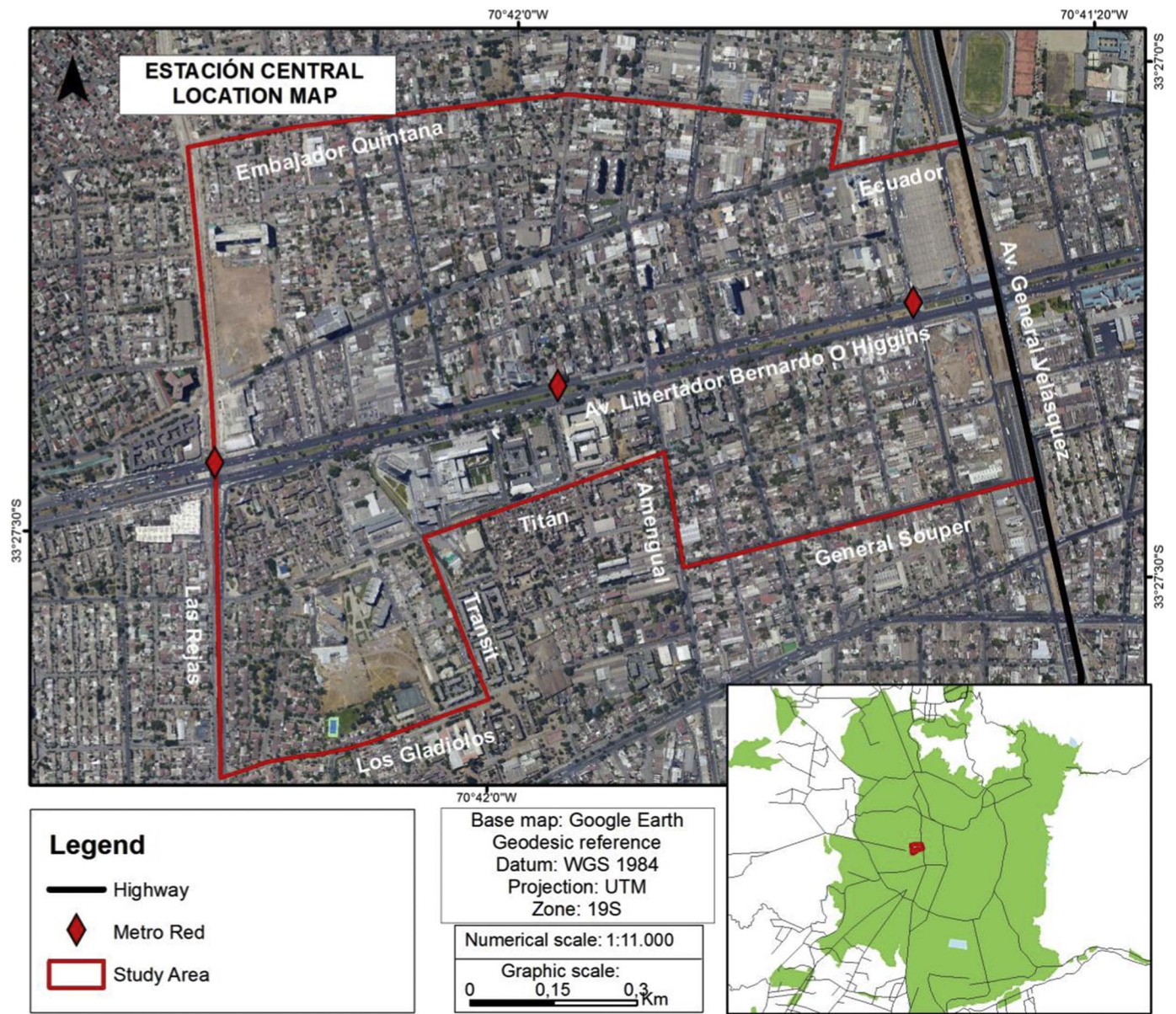


Fig. 1. Case study area in Estación Central municipality. Source: own elaboration.

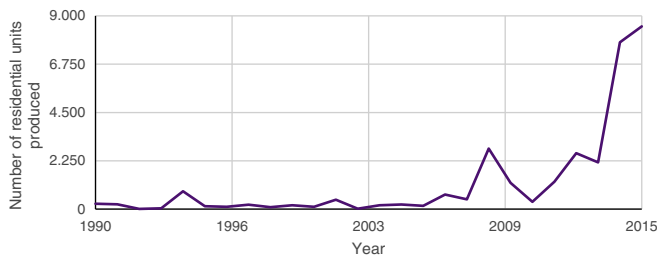


Fig. 2. Housing supply in Estación Central 1990–2015. Source: Own elaboration based on the Observatorio Habitacional, Ministerio de Vivienda y Urbanismo.

buyers VAT payment from 2016 onwards, something that did not exist before) speeded up the purchase of apartments in Estación Central, feeding this local real estate boom. Besides those two reasons, Estación Central municipality does not have a local level land use plan so the local-level district government applies the codes contained in the

(scarcely specific) PRMS. The latter allows that Estación Central has one of the highest floor area ratios allowed in the whole city, and so it opens an opportunity for real estate development that seeks to achieve the highest and best land use and to obtain large profits after construction and selling.

A recent study (López-Morales et al., 2017) has shown two important elements of transformation in Estación Central: a stark increase in land and department prices and important differences between early arrivers (before 2005, lower middle class that mostly pay rents) and late arrivers (after 2005, middle class that mostly owns departments) in Estación Central. However, the mobility behavior between these two groups barely differs.

5.2. Chicureo

Chicureo is located in the northern part of the Santiago city region, in the municipality of Colina, approximately 30 km distance from the city center. Together with the neighboring municipalities of Lampa and Til Til, Colina municipality is part of the province of Chacabuco, today

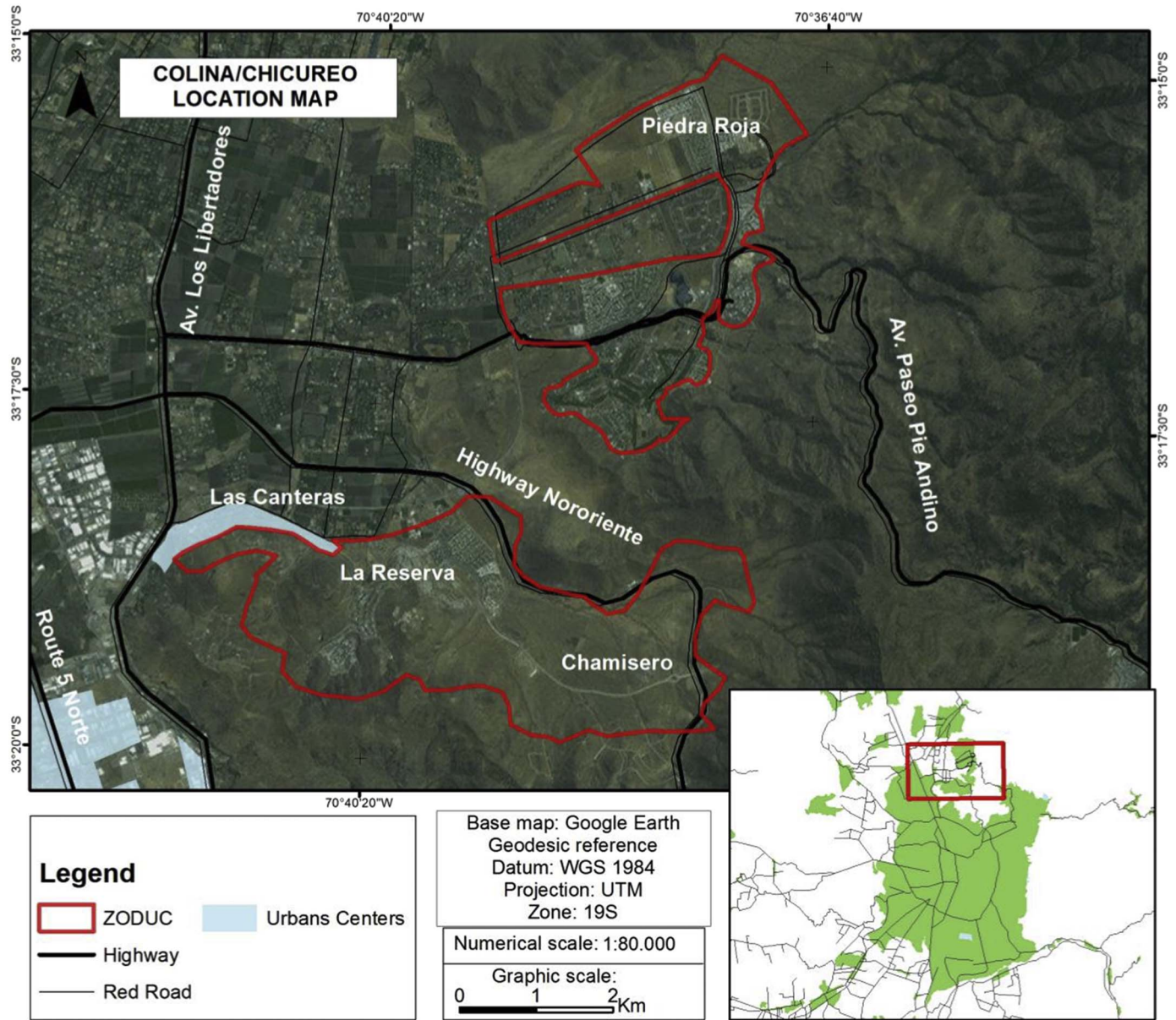


Fig. 3. Case study area in Colina municipality. Source: own elaboration.

one of the principal growth corridors of the metropolitan region, especially the sector of Chicureo (Fig. 3). Until the early 1990s Chicureo had an eminently rural and agricultural character and its infrastructural connections to the city center were weak. The rural character slowly began to change from the mid-1990s first due to the appearance of the so called *parcelas de agrado*, a form of low-density sprawl (Poduje and Yañez, 2000).

While, as seen, the real estate boom in Estación Central finds its reasons in the central location and good accessibility, the lack of an updated land use plan and the national tax reform, in Chicureo the boom was strategically conceived and actively produced by a coalition of public and private actors. In order to circumvent the aforementioned shortcomings of the *parcela de agrado*-model (especially the lack of transport and urban service infrastructure) and to leverage economies of scale in the peri-urban space production several landlords, professional land developers and economic holdings started to buy up land and develop plans for integrated master-planned communities in Colina, Lampa and Til Til. The Inmobiliaria Manquehue (the biggest real estate corporation that works in Colina) almost monopolized the

socially upscaling redevelopment of Colina by buying up 3000 ha of land in Chicureo in 1993 where later on Piedra Roja would be developed, one of the biggest real estate projects in the country (Lukas, 2014). Other major investments in land and the development of master-planned communities in the province of Chacabuco were made by important figures belonging to the most powerful circles of the economic and political scene in Chile.²

Different to Estación Central, in Chicureo the regulatory landscape had to be changed in order to implement the integrated master-planned communities whereby a new zoning orientation named “conditional planning” (*planificación por condiciones*) was invented in 1997. In the Chacabuco province real estate development would now be allowed in specifically designated areas where developers would have to meet

² Examples are as Eduardo Fernandez León, Juan Hurtado Vicuña and Sergio de Castro. While the latter was the first Minister of Finance under Pinochet and has been known as one of the leading Chicago Boys, the former two equally belonged to the circle of neo-liberal movers and shakers and furthermore control important companies as Consorcio (finance), Entel (telecommunication) and Chilquinta (energy) (Lukas, 2014).

certain conditions. In the case of the new land use categories called Areas of Priority Urban Development (AUDP) and Zones of Conditioned Urban Development (ZODUC), these conditions related to a minimum size of projects (300 ha, in order to guarantee the functional autonomy of the new settlements), a certain mix of land uses (residential, service, education, green space) and a certain social profile of targeted demand (the consideration of social or subsidized housing, in order to foster social integration instead of socio-spatial segregation) (Lukas, 2014). Furthermore, the land developers would have to mitigate the ‘negative externalities’ of their projects, mainly with view to environmental impact and the financing of newly required transport infrastructure. This major institutional and political adjustment implied a whole new way of organizing peri-urban growth and particularly a new way of linking land use and transportation planning and its financing.

The crucial and most controversial point in the evaluation and negotiation process between the developers, MINVU, MOP, and the Ministry for Transport and Telecommunications (MTT) was that of calculating the impact of megaprojects on the transport network, of defining the necessary additional infrastructure in order to respond to the increasing demand and of calculating how much of that new infrastructure had to be financed by land developers and how much by the state (Poduje, 2006; Lukas, 2014). For the land developers it was key to assure the connectivity of their megaprojects to the city center via specifically designed roads and highways rather than to invest in public transport or the local road network. As the manager of the biggest project, Piedra Roja, explained in an interview: “Connectivity is always very necessary. However attractive these projects may be, if they are not connected with the rest of the city, they do not work” (Interview with land developer). In other words, the developers needed to produce transport infrastructure customized to their clients and based on “automobile intensive” (Blanco et al., 2014) mobility patterns. Thus, after intense negotiations the state agreed to build and heavily subsidize the construction (2005–2009) of the Noriente-Highway, until today the most cost-intensive urban highway ever built in Chile.

Today Chicureo has a share of 25% of all the houses sold in the upper segment (ABC1) of the real estate market in Greater Santiago and land and house prices increased. The price of the square meter in Chicureo passed from 0,6UF to 2,7UF between 2000 and 2005 (El Mercurio newspaper, March 2nd 2005). In Piedra Roja house prices between 2004 and 2014 grew by 65% (average in 2014 was 11,878 UF) and sales doubled (El Mercurio newspaper, May 17th 2014). While showing the usual fluctuations, real estate production in Colina is constantly high (Fig. 4).

6. Transportation infrastructures, mobility patterns and spatial contestation

6.1. Estación Central

Metro infrastructure in Estación Central exists since 1978, as three

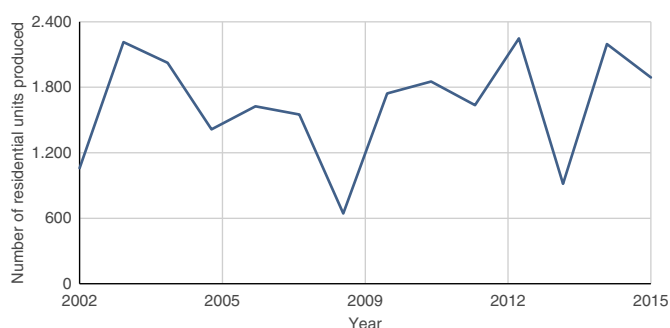


Fig. 4. Housing supply in Colina 2002–2015.

Source: Own elaboration based on the Observatorio Habitacional, Ministerio de Vivienda y Urbanismo.

stations are placed along the Alameda within this municipality. Also, the Transantiago BRT system exists since 2007 in the city. Unlike the Colina case analyzed below, Estación Central shows that access to both systems is relatively equally distributed among residents, regardless of their socioeconomic differences and their heterogeneous access to available mobility resources. This equal condition is due to the municipality's very central location to Santiago downtown, and its good integration to the existing transport and mobility networks, even despite the relatively high cost of the public transport ticket,³ the saturation of the network during certain times of the day (morning and evening peak-time periods are, according to most local residents' discourse, close to “collapse”) and the general congestion generated by the extreme agglomeration of high-rise residential buildings in the area. Walking distances to an ample array of destinations are also attractive for old and new Estación Central residents.

The data obtained via interviews showed that the mobility requirements to work, education, health, recreation and consumption needs experienced by most Estación Central case study area's residents are achieved by walking nearby, within or in adjacent neighborhood, regardless of their socio-economic status. Motivations to be located in Estación Central given by households can be summarized in narratives like the following ones: “I have accessibility to any part of Santiago, in 15 to 20 minutes I am everywhere” (Household 5, Old resident), “we walk to many parts, to Estación, to Santiago downtown, to the hospital, to the schools for the children, it takes us little time to walk there” (Household 8, New resident).

Data reveals the neighborhood has an efficient location to meet the demands and expectations of mobility of its residents. This situation, which is directly dependent on the good supply of infrastructure and services nearby has a strong equalizing effect on the accessibility among new and old residents, be them low- or middle-income households, and therefore it is not surprising that territorial conflicts for access to transport, or neighborhood activism for transport issues are almost absent from this area, differently to other more peripheral neighborhoods of the city. Private car use appears as a marginal resource, although 9 (out of eleven) households own a car, but these cars are used only for specific cases, for instance when it is not possible to use public transport (the need to reach several destinations, to reach further, out-of-public transport network destinations, night recreation, transport of bulky or heavy loads, etc.). Taxi services also appears to be a solution only in specific situations, which may be a valid alternative, though expensive proposition for those households or individuals who do not have private cars.

Residents of Estación Central arrived before 2008 agree that they have very good supply of transport and from these neighborhoods have easy access to the required places, not identifying unmet mobility opportunities. Meanwhile, new residents (arrived after 2008) believe that at least have similar conditions of mobility from their previous residences, highlighting the short travel times between the new location and everyday destination areas. Travel times to work or studies by household members rarely surpass 30 mins as both types of informants declare. A second finding refers to the importance given to the Metro infrastructure (relative to other modes of transport) by old and new residents, as the interviews show that this resource is highly available and used equally by all respondents. Metro is a lynchpin in the mobility of households there, regardless of their age or socioeconomic status, while only in second place Estación Central residents use the Transantiago BRT system. Other transport systems like cars or taxi cabs are considerably less frequently used. Given the central location of this area, bicycles are surprisingly of little use by local households, because they declare of the high risk associated to the use of this resource. As such, transport infrastructure and especially the Metro, are displayed by

³ In Santiago, the ticket price of Metro peak tariff is CLP\$740, representing 1/357 minimum wages. In Buenos Aires, the rate is considerably lower, in a 1/1075 rate.

the old and new residents as a crucial element in both material and symbolic repositioning neighborhood in the city. All residents reveal the importance assigned to the Metro and transport infrastructure in general.

Although both Metro and Transantiago are transport services that residents use according to their needs and economic capacities, an additional core effect of these transport systems is the valorization of land they produce, and the opportunities they give to redevelopers to increase the selling price of the apartments they deliver near Metro stations and BRT stops (Agostini and Palmucci, 2008).

As mentioned, transport access is more or less equally distributed between traditional and new inhabitants in Estación Central and is not a major rallying point for conflict. What has been reported and observed in meetings with social leaders and neighborhood groups is the profound state of concern among residents about the pace and intensity of the effects of the high-rise construction and the externalities derived from this transformation process. Several residents claim their immediate environments are invaded by high-rise construction and referred to concepts of “aggressiveness” and “brutality” inherent to the actual mode of real estate speculation and production in Estación Central. The leader of the ‘Group for the Defense of the neighborhoods of Estación Central’ criticizes the absence of a local land use plan, the missing of participation mechanisms and the loss of privacy due to high-rise developments. Furthermore the group foresees a transit collapse and future congestion problems (La Tercera Newspaper, December 11, 2015; La Cuarta Newspaper, April 20, 2016).

6.2. Chicureo

For the Chicureo area our questionnaire about transport and mobility was focused on residents of the La Reserva and Piedra Roja-projects with view to new upper-middle class residents and the Las Canteras-area with view to traditional residents of Chicureo (see Fig. 3). For both groups the automobile is the most valorized mobility option: “yo have to have a car because collective transportation is horrible” (household 2; traditional resident). While the families living in the gated communities count with at least one car and sometimes more, the ‘traditional families’ sometimes do and sometimes do not have cars, depending on their financial resources. While the new groups exclusively move by car (“we use the car for everything”, household 4, new residents), the traditional residents do have mixed strategies. Although they describe collective and public transport as deficient due to high costs, low frequencies and extended travel times, they often do not have other options. Especially for elder and physically handicapped people the walking necessary for taking the bus means serious efforts: “For our elder people the situation is difficult and even dangerous” (interview social leader, Las Canteras). Here some of the toll roads furthermore act as physical barriers to reach the public transit bus stops. When traditional inhabitants use their car on metropolitan scale, they rather avoid the priciest of the toll roads (especially the Nororiente-highway) while new residents make heavy use of them. It is interesting to note that public transport has such a bad reputation that children of new residents, that attend university in the center of Santiago and do not have access to a proper car, prefer to hitchhike then to use the bus. As our interviews have shown, new residents (of every age) don’t even know about the public transport offer.

The two groups have patterns of local proximity and metropolitan scale mobility whereby the pattern of the traditional inhabitants is more complex than that of the gated communities residents. The residents of gated communities are supplied with daily services (shopping, primary education) in the immediate vicinity, making use of the infrastructure of shopping and services that came to be installed with megaprojects, for other needs and activities (health, higher education, labor) they move towards the uptown-districts of Las Condes and Vitacura which are well connected by the Nororiente-highway. On the other hand, the traditional inhabitants make use of the centrality of the

Colina city-center which for the new inhabitants does not seem to exist as a travel destination. With reference to health services, higher education traditional residents also move towards the center of Santiago, but to different parts and using another highway (Los Libertadores). For daily purchases traditional residents also make use of local services (supermarkets and department stores) who came to settle around gated communities. Actually, the increased commercial offer is a positively evaluated aspect of the real estate boom through megaprojects in Chicureo.

For Chicureo our explorative study indicates that new transport infrastructures there are not distributed nor appropriated equally. However, both groups show dissatisfaction with the offer of transport possibilities. While the new residents in the gated communities benefit from and make intensive use of the modern highways, especially the Nororiente, there is increasing discontent with a lack of local road network and the increasing traffic jams in rush hours on those roads that connect to the highways (especially Av. Chicureo). Thus the mobility problems for the new inhabitants occur on a local scale while on the metropolitan scale mobility is resolved through the new highway and the other two toll roads nearby. As a new resident in Piedra Roja stated in a newspaper: “You have highways to everywhere: you go downtown and have Ruta 5, you go to Providencia and have Ruta de Los Andes y Vespucio, you go to Vitacura and have the Nororiente, you go to La Dehesa and have Juan Pablo II. It takes me 25 minutes to go to Parque Arauco [shopping center] and there are no traffic lights on my way” (La Tercera newspaper, January 17, 2015). The traditional residents in Las Canteras see that infrastructural modernization another way: “We haven’t had many benefits because there have been no contributions to the community. They made huge projects, large structures, we do have highways here and there, the Avenida del Valle, but to us, the community...no contribution at all” (Lukas, 2014).

Traditional residents claim that the frequency of public transport is low and prices have increased over the last years. In 2015 and 2016 there have been mobilizations where residents of the Las Canteras-settlement temporarily blocked the Las Libertadores highway in order to raise awareness of their increasing spatial disconnection and isolation, demanding investment in public transport. They claim that the new highways have reduced their mobility options and that “the government is preoccupied only with Transantiago but not with the rural areas in the Santiago region” (Chicureohoy webiste, March 21, 2016).⁴ It should be mentioned that there have been other conflicts related to the megaproject development, especially about questions of land property between the Las Canteras settlement and the La Reserva megaproject.

7. Discussion and conclusion

In this article we set out to ask how, by whom and for whom new real estate projects and transport infrastructures are developed, analyzed the differential characteristics and possibilities held by incumbent actors to use transport infrastructure, and how real estate agents, transport operators, and regional and local-level planning regimes intertwine in such a highly neoliberal setting as is Santiago, Chile. As case studies we focussed on two of the most intensely redeveloping areas in Santiago de Chile, the inner-city municipality of Estación Central under rapid high-rise residential redevelopment, and the peri-urban growth zone of Chicureo where master-planned communities of an unprecedented scale are built.

On a general level our results show that the dynamics of real estate production, transport infrastructure and class-related spatial tensions differ significantly between the inner-area case study and the peri-urban one, thus a first quite general point to take into account is that metropolitan geography really matters with view to those links.

⁴ <http://www.chicureohoy.cl/2016/03/21/vecinos-de-las-canteras-reclaman-falta-de-conectividad-y-locomocion-en-la-zona/>.

However, Estación Central and Colina show one common feature: the economic and political power that developers have to transform the physical and social fabric of both inner-city and peri-urban areas of Santiago producing and capitalizing on ground rent increases. In both cases these ground rent increases are intimately related to existing transport infrastructure and mobility opportunities, as in Estación Central, or deliberately produced infrastructure and mobility opportunities, as in Chicureo.

The massive high-rise redevelopment experienced in the inner districts of Estación Central is quintessentially a process of class-monopoly absorption of the ground rent provided by state-built transport infrastructures by private, large-scale real estate firms. The major economic benefits of transport infrastructures (converted into ground rent capital by the spatial externalities they generate) is currently being absorbed almost integrally by the dominant redevelopers of this area, who are the main stakeholders and those who most benefit from the mobility opportunities that lie there. This process generates high enough levels of displacement of lower-income residents (owners and tenants) to be deemed gentrification in an extended usage of the term (López-Morales, 2016a, 2016b). Further, as the Estación Central case shows, stark socio-economic differences can be witnessed between new and old residents and the social classes they represent. However, between the different social classes almost no difference in their mobility patterns was detected. Transport accessibility thus is not a good to be disputed among low-income and mid-income residents, between traditional residents and newcomers, at least not as long as the costs of public transport do not increase or the area gets to a point of saturation of all means of transport.

In Colina the real estate boom has been strategically conceived and produced by a coalition of land developers and the state where the public subsidies to the customized transport infrastructure (particularly the Nororiental-highway) were basic ingredients. In the negotiation of mitigation costs only those transport infrastructures directly linked to the projects and necessary to increase customized spatial capital, land prices and thus the ground rent were considered; and no investment flew into public transport. Rather than payments for externalities the mitigation mechanism was turned into a highly profitable investment scheme. We may understand that as a case of a neoliberal, growth oriented assemblage of real estate and transport infrastructure with socially unequal outcomes in terms of mobility opportunities and practices. As seen, the deliberate enhancement of automobile-based mobility infrastructure for the higher strata of society is leading directly to a decrease in accessibility of the lower strata and the specific institutional and political links between real estate development and transport infrastructure through conditional planning and the franchising of highway concessions are deepening segregation patterns and mobility-related socio-spatial exclusion. With Centner (2008) we can argue that in the Colina case a certain class is using its privilege to make space and thus uses spatial capital as an exclusionary tool, by imposing their group's norms (high preference for automobile-based mobility) on pre-existing and lower-class inhabitants which in turn was based on the appropriation of the land use and transportation planning system.

While thus in Colina the exclusionary form of space making is based on the unequal distribution of transport infrastructures and mobility opportunities and is leading to open contestation, in Estación Central that has not been the case and contestation is rather addressing the thread of displacement by economic or environmental reasons in a highly densified space.

To conclude, with view to contested mobilities in Santiago the dynamics of peri-urban space production seem highly problematic, much more so than the dynamics in the inner-area. On the urban fringes the privatized and territorially splintering production of premium-networked spaces leads to a loss of access to mobility of traditional peri-urban inhabitants and deepens already existing socio-spatial inequalities. On the other hand this means that from the viewpoint of public policy the inner- areas should be privileged in terms of subsidies and

the production of social housing, thus the density of transport networks and the supply of relatively well connected land is largely higher than in the periphery. Enhanced mobility options and the investment of public transport infrastructure can benefit an ample array of residents of the central quarters of the city, unlike those in the periphery who see themselves excluded from these systems.

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