The Density Dividend: solutions for growing and shrinking cities

Appendix

Case study: Warsaw

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Urban Land Institute

TH Real Estate

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ULI has been active in Europe since the early 1990s and today has over 2,200 members across 27 countries. It has a particularly strong presence in the major European real estate markets of the UK, Germany, France and the Netherlands but is also active in emerging markets such as Turkey and Poland.

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This report

ULI Europe has identified *density* as a major theme for its content programme. This report is the second of a series of studies into the impact, implications and importance of density in today's cities.

The first report, *Density: drivers, dividends and debates (June 2015)*, examined what we mean by the term *density,* and explored the long term benefits density offers to people, the environment and on investments. This was done through consultation with ULI members, city experts, and industry leaders.

This report explores the question of density and urban change by looking more closely at the experience of six European cities. It examines how density may play a role in helping cities in cycles of growth or shrinkage to adapt, prepare and succeed in the future. The six case study cities – **Birmingham, Dresden, Istanbul, London, Stockholm** and **Warsaw** – cover a wide span of population trends, political frameworks and spatial evolutions. Together they offer many lessons for cities in different cycles of development.

Methodology

For this report, we initially undertook historical research on each of the six cities to understand the development path they have taken and what this means for the appetite of their residents and leaders for city living and future densification. Then, we developed detailed case studies for each of the six cities, which each identify the key drivers, enablers and attitudes to densification, and feature timelines of change. We identified and spoke with four to six specialists in each city – including city planners, academics, architects and development professionals – in order to clarify and calibrate these cases.

The case studies were used as the basis for discussion with ULI members at workshops that took place in each of the cities, except for Dresden where the workshop took place in Berlin. The feedback from the workshops was used to update and improve the case studies as well as to inform the summary report.

Authors

The authors of the report are **Prof Greg Clark,** Senior Fellow at ULI Europe, and **Dr Tim Moonen,** Director of Intelligence at The Business of Cities Ltd.

Executive Summary

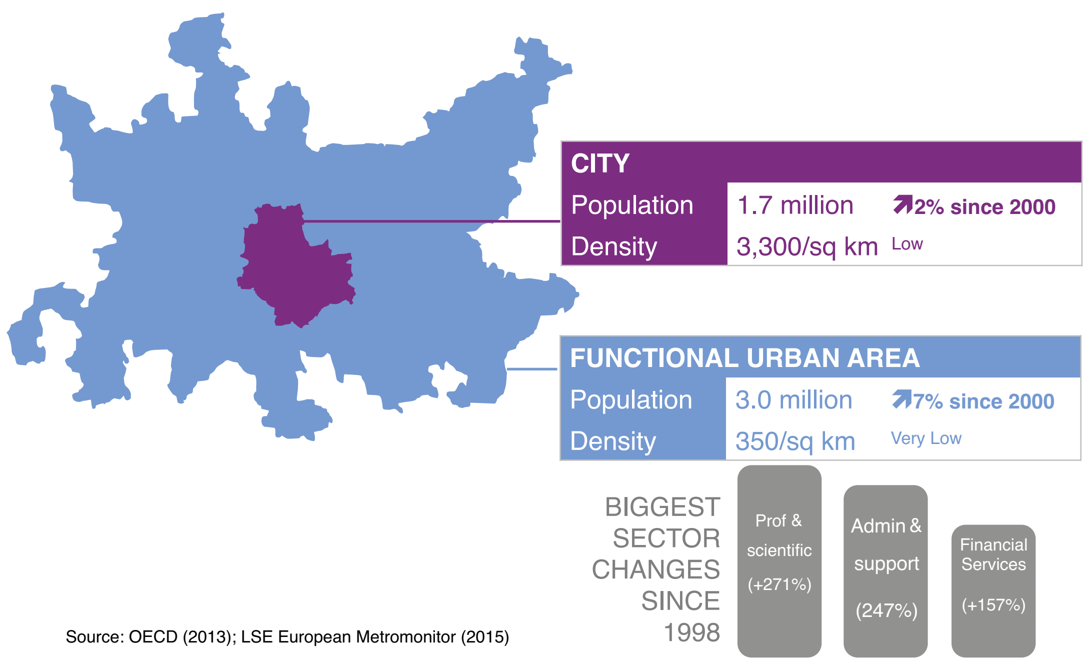
Warsaw returned to a market economy in the 1990s inheriting a fairly unique set of conditions: ubiquitous pre-fab housing blocks, very few single family houses, numerous empty spaces, a hugely complex ownership pattern with hundreds of historic property owners demanding restitution from the new State, and almost no legal or regulatory instruments to stop sprawl. The fall-out from this situation continues to reduce proactive development and densification of the city.

Over the past decade, Warsaw's economy has bounced back and opened up much more investment opportunity to private development. Developers have increasingly begun to focus on the opportunities in the inner city. In the absence of strong planning tools, some investors and developers have taken a lead in starting to reverse the commercial and retail sprawl that made Warsaw a low density city, and have begun to invest in a mix of uses in the city centre to add value over the long-term.

Warsaw is in a promising new cycle of re-urbanisation that needs density if it is to be optimised. The city is witnessing an astonishing surge of new commercial development to serve the booming professional services, finance and IT sectors that desire high-quality space. Demolition of high profile but inflexible buildings has made way for the construction of new tall commercial and residential towers. The capacity to meet the size needs of large corporates is allowing firms to consolidate their locations and improve their efficiency.

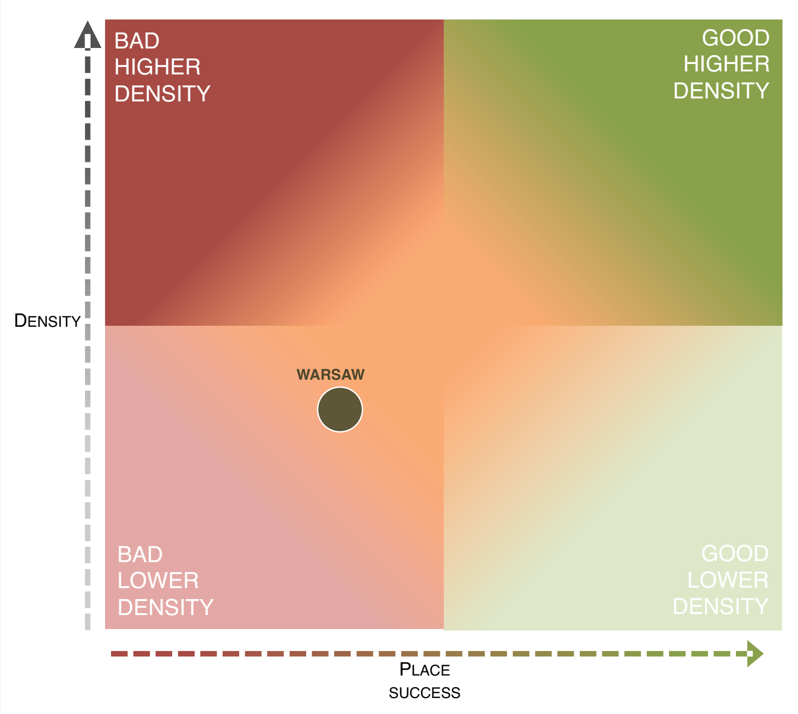
The densification of Wola is helping it become Warsaw's leading business hub. The district is an example of Warsaw's recent success at mixed-use intensification. Many other areas – including Miasteczko Wilanów, Saska Kepa, and Stary Żoliborz - now have a good mix of functions and citywide public transport use is fairly high. The arrival of the first section of the second metro line in 2015 is unlocking major opportunities for housing in inner Warsaw to serve new arrivals, and there are also still many unrealised opportunities for densification along the first line.

Figure 1 Population, economy and density in Warsaw's city limits and functional urban area



Source: OECD (2013); LSE European Metromonitor (2015)

Figure 2 Warsaw's current density profile



Warsaw's ability to leverage population and economic demand is hampered by the absence of fundamental ingredients to make progress towards good density (see Figure 3). The city lacks a binding spatial plan, and many of its most strategic areas are in effect unplanned. Without the mechanisms to co-ordinate its growth, or the national framework to guide development, Warsaw lacks a compelling story or brand with which it can communicate to its citizens and the wider world about its future. This risks the city becoming stuck in a low-trust, low-investment equilibrium, and missing out on opportunities to capitalise on its role as a bridge between western and eastern Europe.

Figure 3 Warsaw's ingredients to achieving progress on density

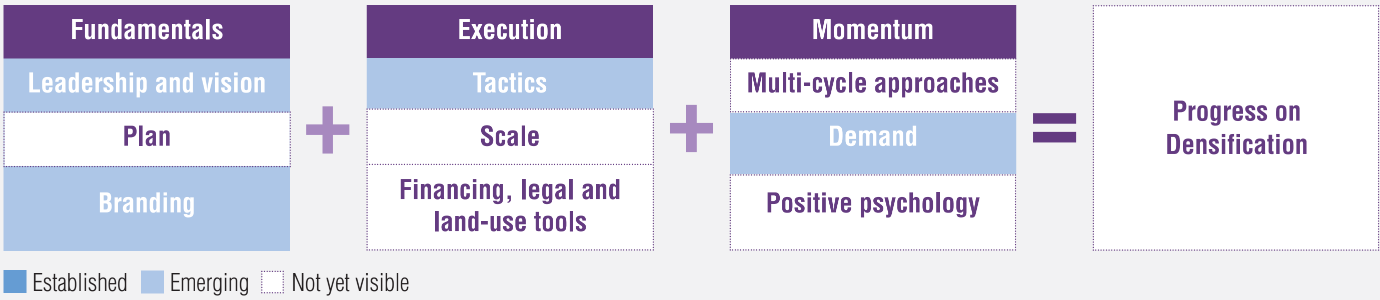
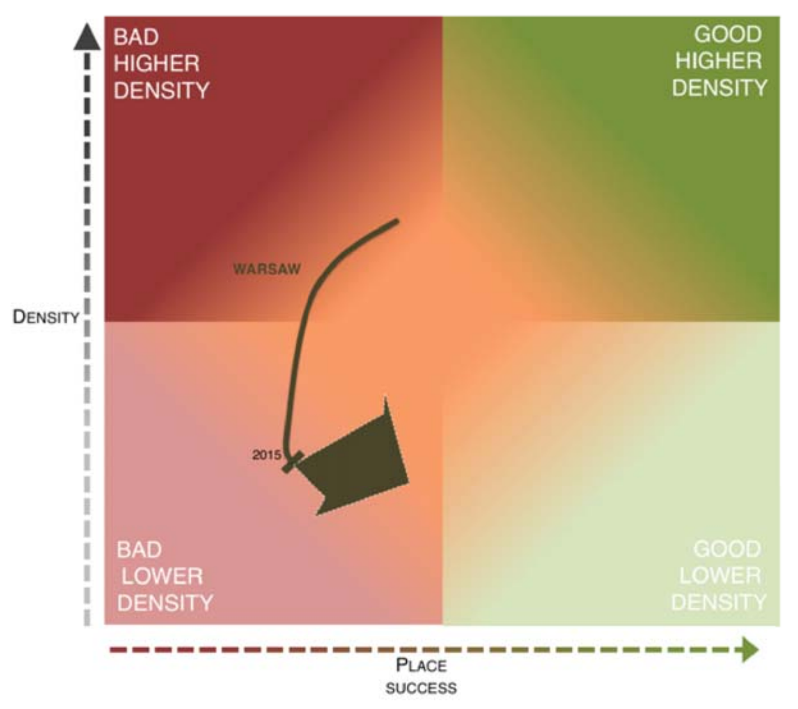


Figure 4 Warsaw's journey towards better density



Density outlook

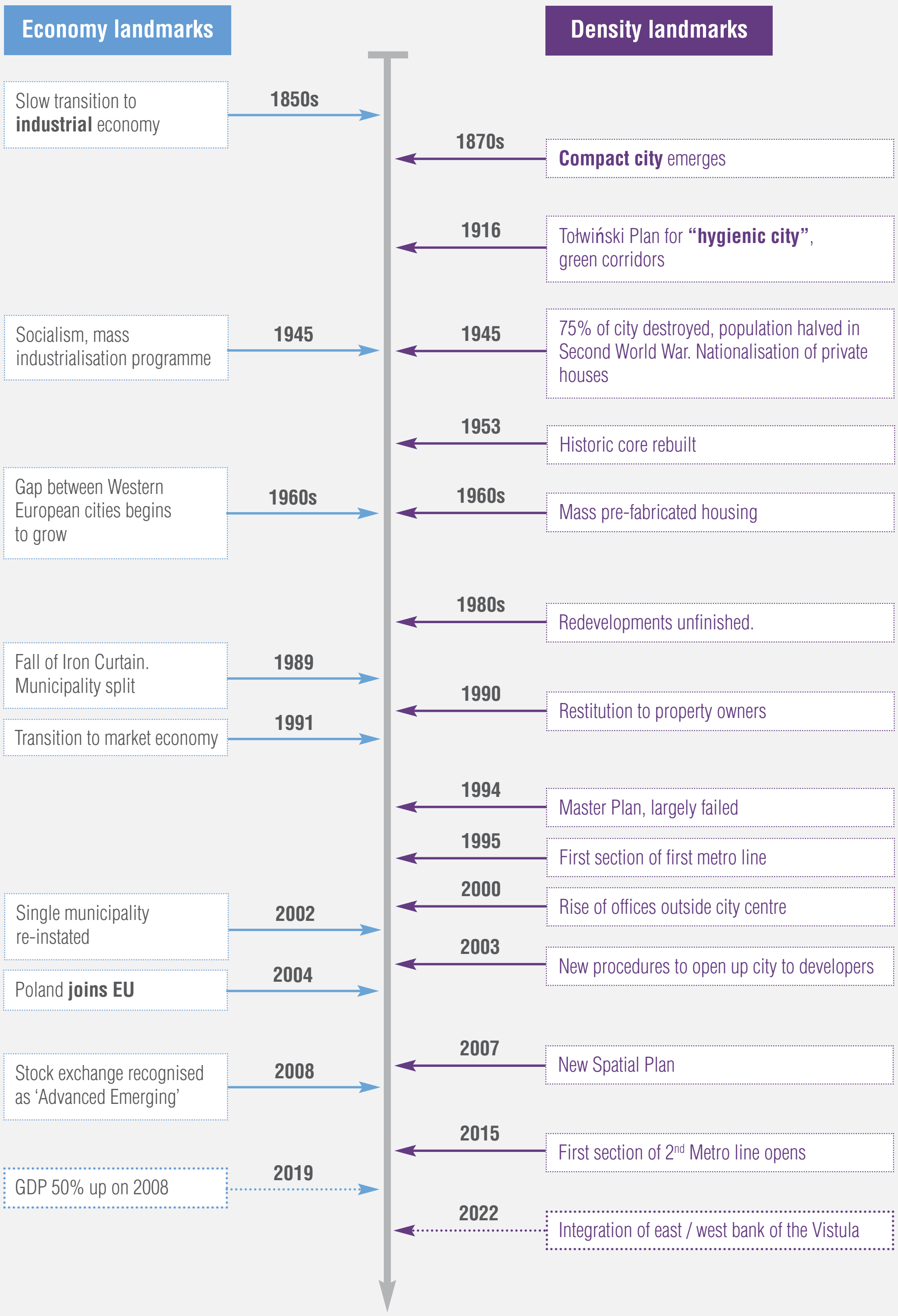
Warsaw is still much smaller and less dense than it could or should be. As a dynamic capital city, it has the potential to grow to three million people within the city limits while still improving quality of life. For the city to deliver density at a faster pace and scale across the inner city, a comprehensive city spatial plan and better district planning are essential. More bridges and affordable public transport such as trams and buses are also needed. A better system for integrating urban development tools on larger sites would also be required.

Warsaw's younger generations are rediscovering street life in riverside districts of Powiśle and Praga. In a process of unplanned but popular re-densification triggered by university and cultural institutions, these districts are pioneering the rejuvenation of street cafes, gastronomy and clothing retail. The visible benefits of these districts can become part of a broader narrative about the human-scale density that Warsaw is capable of fostering.

Warsaw's capacity to steer better density is beginning to be improved by reforms to address fragmented planning. Municipal authorities recognise that an integrated urban form will drive quality of life and sector competitiveness, and there is much more civic interest and debate around street life and liveability, especially among young people. Partnership between Warsaw's largest landowners and commercial developers is starting to accelerate the pace of transformation.

The ability to become a more dense, vibrant and attractive city will depend on innovative solutions to convert the mono-functional suburban expansion from the last cycle. A lack of growth co-ordination outside the city borders also risks exacerbating sprawl effects. Warsaw needs to make more effective use of the commuter railway system to serve the agglomeration, aided by better collaboration and integration between railway authorities and city agencies.

Figure 5 Timeline of economic and spatial change in Warsaw



History of urban change in Warsaw

2.1 Containment and congestion

Warsaw's early development was constrained by its status as a 'fortress city' on the western edge of the Russian empire. Unlike the rapid enlargement of European cities in the 19th century, Warsaw was surrounded by military settlements which limited options for territorial expansion.[1] After 1850, a traditional compact European city structure emerged with an architectural townscape typical of the period. But the built up density of the city was very high, resulting in living conditions which were perceived as unhygienic, overcrowded and unsatisfactory.

> *Warsaw in the 30s was the most congested city in Europe. The situation was dramatic, there was a monstrous overcrowding in homes, affecting nearly 60 percent of the city's population.*
>
> – **Jarosław Trybuś,** deputy director of the Warsaw Museum

From the First World War onwards, the city's first comprehensive spatial plans were adopted and aimed to make the city more 'hygienic'. Green spaces were expanded, while the city grew along its radial rail network.[2] Nevertheless, in 1938, just before World War Two, Warsaw was an overcrowded but compact city full of street life activity. Now, almost 80 years on, it has yet to regain this level of vibrancy.

2.2 Development after 1945

Warsaw's approach to density over the last 70 years has been profoundly shaped by the impact of the Second World War, which brought widespread destruction on the left bank of the Vistula and meant many population groups never returned. The historic centre was razed, and three quarters of the city lay in ruins.

The new Communist regime tried to refashion the city through the public ownership of property, the removal of market players from development, and complete political control over land-use.[3] Part of the old town was reconstructed but most of the city centre was redeveloped in socialist modernist style. The dramatic expansion of the city boundaries in the 1950s encouraged development further out and means that today a big share of the city is vacant and not urbanised.

Figure 6 Warsaw's Palace of Culture, finished in 1955 (l); SuperSam supermarket, built in 1962, demolished in 2006 (r)[4]

Photo by Jorge Láscar. Licence: CC-BY-SA-2.0.

In 1989, only two buildings in the whole of Warsaw offered rentable office space. Today the supply is close to 5 million sq m.

(Source: Colliers)

Many central areas beyond the core, and stretching out to the periphery, were densified with large pre-fabricated apartment blocks. Although this model did feature some integrated planning of shops, services and schools, it rejected Warsaw's historic urban form: instead of using streets and squares as the focal point of city life, apartment blocks stood in the middle of large green spaces built along Warsaw's arteries. While many of these were never completed, in areas where they were this (in practice) low density model drained life from the streets and squares. The Palace of Culture in the centre of Warsaw epitomised this approach, with a large tower standing at the heart of an empty plaza.

Despite socialist style urban planning with lots of green spaces, much of the old city structure remained fairly dense. Unlike western European and American cities, there was no major suburbanisation phase in the postwar era. However many attempts to build self-contained residential districts were left incomplete, leaving behind a legacy of mono-functional dormitories.

Densification and expansion was carried out with single-purpose land use patterns. Residential districts lacked access to many amenities and jobs were concentrated either in new industrial sites or homogenous administrative districts. There was very limited experimentation with mixed-use development.

2.3 Democratisation and missed opportunities

In the first cycle after 1990, sprawl and low-density suburbs emerged in haphazard fashion. The specialist development planning office declined and was replaced in effect by private companies which lacked planning experience. Affluent residents rapidly moved out to the suburbs in search of a more comfortable lifestyle. Many districts, such as Białołęka, were disconnected from transport links, utility grids and public services, and in some cases this was tolerated by residents whose main concern was the housing asset.[5] Numerous suburban hypermarkets were set up having been incentivised by tax policy. Accessible almost solely by car, they remain popular venues for leisure and entertainment.[6,7]

In Warsaw's inner city, heavy industry was re-converted into single-use commercial and office blocks, as developers initially had no incentive to pursue mixed-use projects. Employment in the City Centre, Mokotów, and along Jerozolimskie Street and Okęcie stayed quite segregated from other urban functions. As Poland joined the EU, Warsaw was still a very mono-centric city.

From 2000, Warsaw city centre no longer dominated annual office supply. Today non-central locations account for around 70 percent of stock. Even in record years for office supply in 2013 and 2014, most new office buildings are outside the centre, often in business parks.

Stewardship for desirable suburban density

Dom Development is one of Warsaw's most prominent developers. The firm has learnt important lessons from its first cycle of projects and is now engineering the ingredients of popular density in the city's eastern districts.

One of Dom Development's first projects in Warsaw was Derby in Białołęka. There was initially little strategic thinking about the consequences of building low density multi-family development at the urban fringes with little road or rail access or recreational amenities. The lack of co-ordination with city authorities meant some basic utilities were not installed and public services became badly overstretched.

These lessons have been learned in the second cycle. Saska, in the Praga South district, has emerged as one of Warsaw's most desirable new residential schemes.[8] The 200,000 sq m project features nearly 1,600 apartments, and benefits from an appealing combination of attractive architecture, green space and good connectivity. The project's success prompted Dom Development to expand along an adjacent site in Gocławski that features 600 more apartments.[9] Another new greenfield site in the eastern district of Bródno, is filling in land gaps with 750 apartments near an existing shopping centre, with mixed heights of four to 12 floors.

Figure 7 Isolated sprawl in Bialoleka (l) and the well-connected and designed Saska (r)[10]

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Although many sites still face the hurdle of lacking a local development plan with which to co-ordinate with public services and social infrastructure, the new phase of projects recognises the importance of metro and bus connections. In some cases developers even fund transport facilities. There is also a recognition that fenced communities are less desirable than well planned, integrated and mixed-use spaces, which is having a visible effect in areas such as Wilno, Praga, and Southern Żoliborz.

Figure 8 Areas of planned or ongoing diversification and densification in the 2007 spatial planning policy[13]

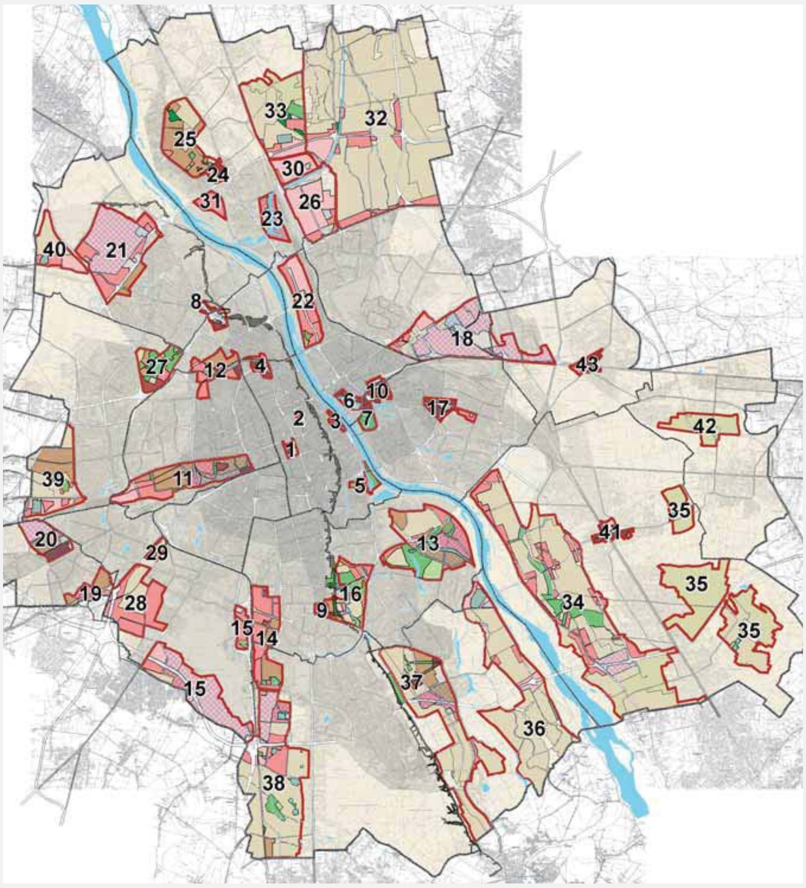


Figure 9 Warsaw's share of national population compared to its peers

	City Population (millions)	Share of National Population %
Vienna	1.8	21
Budapest	1.8	18
Madrid	3.2	7
Kiev	2.9	7
Rome	2.9	5
Warsaw	1.7	4

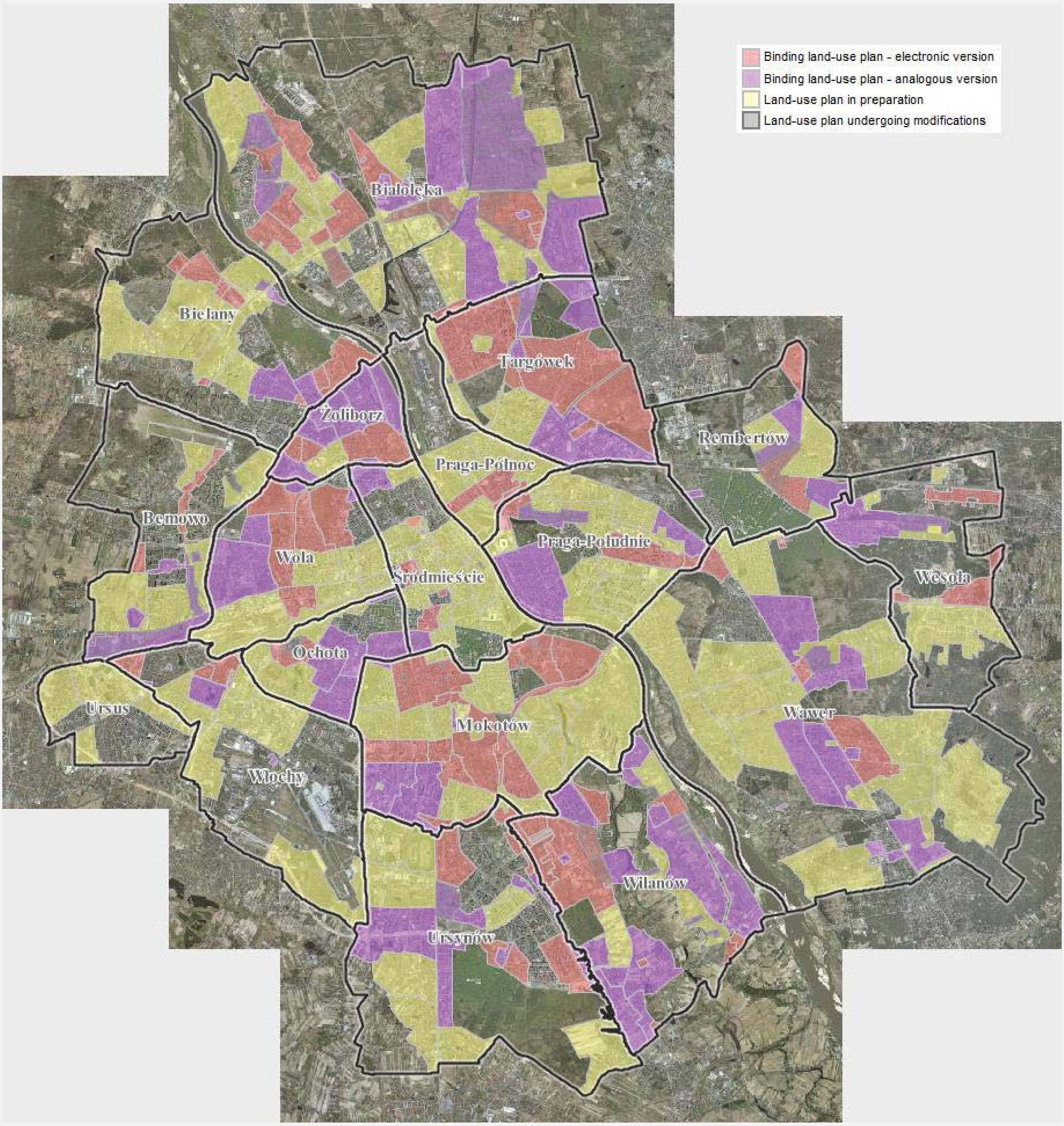
Warsaw's 2007 Spatial Planning Policy[11] tried to steer the city's future development back to densified nodes in the inner city. Praga, on the detached and disconnected side of the Vistula, was earmarked for greater densification as the number of bridges and ring roads grow. Although planning implementation has been patchy at best (see Section 4), there are signs that commercial districts are being diversified, and there are big plans to densify around Gdański and Zachodnia railway stations. Initiatives to maximise the density potential of the whole rail network are now being actively discussed.[12]

2.4 The situation today

Today Warsaw is officially a city of 1.7 million people but many estimates suggest the true figure may be closer to 2.0-2.3 million.[14] The city is therefore gaining a bigger share of a national population which is on a long-term decline from 39 million towards 33-34 million. But as a capital city **Warsaw's share of the national population is still much lower than most European countries** (see Figure 9). Its relatively small size is a product of deliberate efforts to equalise growth between the country's regions by successive central governments. But as Warsaw, and Poland, grow and evolve, there is scope for Warsaw to grow significantly in a more advanced and competitive system of cities.

Warsaw lacks binding local land-use plans across a large part of the city. As of July 2015, just 36 percent of the city area was covered by local spatial development plans, and nearly half of these lack full detail and need amendments. Another 30 percent of the city is subject to some basic local planning but lack timescales or implementation mechanisms.[15] The dense core is still marked by pockets of empty land which the socialist regime had not yet re-developed, and which were owned by former state-run monopolies. Many plots have become the site of temporary structures such as markets, advertising billboards, fast-food outlets, bars or impromptu public spaces, awaiting the outcome of legal disputes before any development receives the go-ahead.[16]

Figure 10 Coverage of local land-use plans, as of May 2013



The barrier of land restitution in Warsaw

Warsaw's capacity to densify its city centre is hamstrung by the fairly unique problem of land restitution whose origin lies in the nationalisation of land in 1945, and in the expropriation of Jewish and other exile-owned property during World War Two. Since Warsaw returned to market democracy, numerous claims of ancestral entitlement to strategic land in the city have been filed. Unlike Berlin, which managed to settle these claims within a decade of re-unification, Warsaw is still plagued by these wrangles. The lack of a restitution law means developers lack confidence about how much money needs to be set aside in negotiations with claimants.

The impact of restitution on the pace of development is severe, more so in Poland than other Central and Eastern European countries and more so in Warsaw than other Polish cities. The square around the Palace of Culture is largely in the same condition as it was upon the fall of Communism, and the planned new Museum of Contemporary Art is blocked by restitution claims. The piecemeal nature of inner city redevelopment and the stalling efforts to redevelop Plac Defilad square reflect the challenges of land assembly.[17] Sometimes restitution covers very small plots, and some sites turned over to private ownership even include schools and kindergartens. Warsaw needs a restitution law that reverses the so-called 'Bierut Decree' and updates laws restricting the ownership rights of local and central government.[18]

The demolition of commercial properties built between 1970 and 1995 is a new phenomenon. Prominent examples include the Mercure Fryderyk Chopin Hotel, built only in 1991 but which is being replaced by a 155 metre tower and will be part-occupied by Deloitte.[19] Another is the City Center shopping centre, a 1980s mall which was demolished to make way for Złota 44, one of the tallest residential buildings in Europe. By contrast, much of the pre-war architecture in Warsaw (e.g. Saska Kępa, Old Praga) is regarded with pride and protected from demolition.

Warsaw is currently witnessing a surge of new commercial development. Three million sq m of development is forecast between 2015 and 2018, adding nearly 70 percent to the city's existing stock of modern commercial space, which is already nearly eight times the size of the next Polish city.[20] Important residential projects have also come on line, including the 44-storey Cosmopolitan Twarda 2/4 in the city centre. Although the commercial pipeline is set to increase vacancies and hit rental prices, many expect it to be eventually absorbed by business and financial sector firms keen for higher quality space.

The business centre of Wola is set to become Warsaw's leading business hub. Historically the industrial area was not developer-friendly because of its high density housing, high prices and limited space. The district of Mokotów proved more popular. Today, Wola's unused space, competitive prices and potential for office and housing investments, presents significant mixed-use potential.[21] West Station, a nearby sprawling rail and long-distance bus station, is being redeveloped by Polish State Railways to include a Grade A business complex of 67,000 sq m.

Warsaw's spatial change has come up against several negative externalities. Access to commercial areas involves long commutes because of the distance to residential areas. A lot of recent development has not been co-ordinated with new road and public transport routes.[22] The funding of public services is stretched as government grants do not factor in the higher costs of delivering suburban services.[23] As resident interest in area character and quality of life grows, there is an imperative for public and private stakeholders to re-imagine many of its suburbs.

A planned vision for coherent and flexible density

Miasteczko Wilanów illustrates the potential when a Warsaw suburb is well planned, even if delivery has been complex and protracted. Located 10km south of the city centre, it featured in the city's plan since 1992 as a future lively mixed-use garden neighbourhood, whose centrepiece was a 1.7 sq km housing estate. The project was widely criticised at first for the absence of local stores as the area lacked scale, but today local shopping options are plentiful.

Enabled by private capital, the project now provides compact development on a site that rejects the gated enclave model found elsewhere in the city. At relatively high density (around 200 people per hectare, compared to the district average of 70), its design encourages pedestrianisation and intimate connection to the local surroundings.

Figure 11 Semi-public space in Ostoja Wilanów

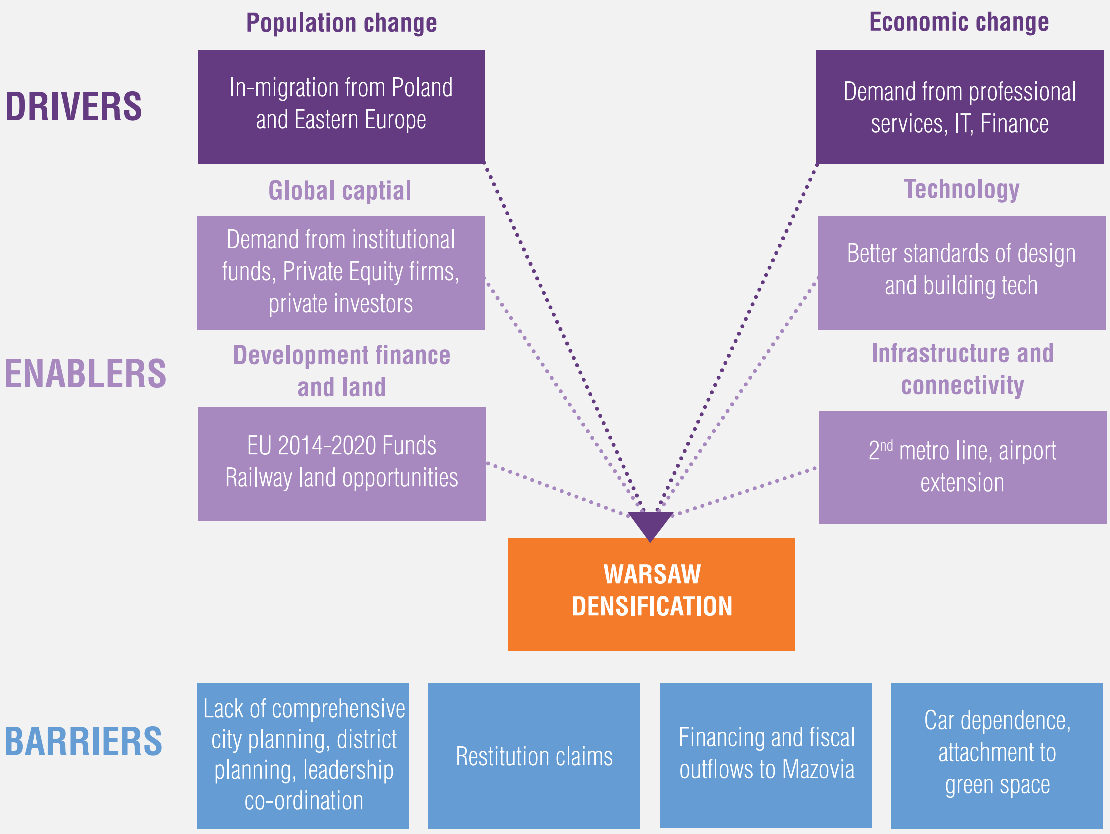
Source:WeronikaDetlaff (2015), Creative Commons licence

The challenges in Miasteczko Wilanów revolve around the sequencing of transport and social infrastructure to serve these elevated densities. Buildings in Wilanów Park facing a noisy road were originally intended for offices but have now been swapped for more housing, partly because employers lacked confidence about accessibility and partly because the municipal zoning plan does not provide clear guidelines.[24] There is also still a shortage of schools and child care. More recently, the city has become more active in buying land to build these public amenities, while a hospital, clinic, supermarkets and restaurants have all been developed on site.

The scale of the Miasteczko Wilanów project has inspired other large sites to emerge under the stewardship of a group of experienced developers. These include Chrzanów neighbourhood of Bemowo on the western outskirts, which in the future will be linked up to the second metro line. As such, the lessons of Miasteczko Wilanów's development has shown others the way to build at human scale in Warsaw.

Current trends and future drivers of density in Warsaw

Figure 12 Drivers, enablers and barriers of density in Warsaw



Drivers

- **New knowledge economy and demand for high-quality space.** Warsaw has outperformed most European cities since the mid-1990s, and especially since EU accession in 2004.[25] Success in professional services, finance and IT has driven unprecedented tenant demand. Major new tenants – the prominent include the likes of Citibank and Samsung - strongly prefer a new generation of office space with higher-quality floorspace and strong sustainability performance. Samsung is a major occupier of the new Warsaw Spire, as is Frontex, the EU's border protection force. The new Prime Corporate Center, which will become home to Polish commercial bank Raiffeisen Polbank, is an example of a firm consolidating its locations across Warsaw in order to improve efficiency.

> *Warsaw will become a four million person city one day, like it or not. The social and economic trends of globalisation are outpacing the urban framework.*
>
> – **Karolina Kaim,** Cosmopolitan Twarda 2/4

- **In-migration** from the rest of Poland and other countries in Eastern Europe - notably Ukraine - is driving growth in apartment living on the outskirts of the city.[26] Warsaw hosts an increasing number of immigrants who prefer the opportunities to those they anticipate in western Europe. There is also a widespread phenomenon of people renting, studying and working in Warsa but who are registered in other cities for tax purposes because there is no requirement to re-register. Daily commuting from cities such as Łódz, 130km from Warsaw, is more and more common. This means there is growing demand for services and infrastructure in Warsaw which is not fully tracked and which is not adequately funded.

- **High standards of design and environmental technology** within new buildings are an important enabler of high density in Warsaw. Atrium 2 is an example of a project that deliberately links back to the city's pre-war modernism while ensuring class A standards. Many projects elect for on-site entertainment because the building quality premium is so much higher than in the surrounding area.

The enablers and constraints of density in Warsaw

Enablers

Global capital. Long a magnet for European institutional funds, new international investors are making it possible to transform spaces that have long laid static in central Warsaw because of restitution and planning constraints. Investment activity from private investors and private equity firms in the U.S., east Asia, and elsewhere has been attracted by the capital's growing consumer economy and competitive values. These have driven both the upgrade of prime assets and secondary renovations, including outside the centre, in search of value added investments. Major schemes made possible by global capital include Rondo 1 (part-occupied by E&Y), New City, Mokotów Nova and Senator.

Infrastructure investments coming online are enabling an effective expansion of Warsaw's city centre and are unlocking sites that previously were considered inaccessible. The **second metro line construction**, in particular, is enabling a significant new phase of office development around several of the new stations. Other catalytic projects include the southern bypass, and new bridges and two new tram lines which are bringing remote areas in the north east of the city into the transport network. One big challenge is to sequence these projects with building development.

Figure 13 Warsaw's 1st and 2nd metro line, including potential future expansion

Extension of the airport is gradually creating momentum to design a big 'airport zone', with vast business potential. Activity near the airport, which is located closer to the city centre than most European airports, is resulting in new developments in popular districts such as Mokotów that have more floors than in previous cycles. These include Postępu 14, Nestle House, Park Development II and Karolkowa Business Park.

Impact of EU funds

Warsaw is a major beneficiary from the new cycle of European Commission funding for the period 2014-2020. Poland is the largest recipient of money, at over €90 billion, and this envelope will include big investments in sustainable transport, including new trams adapted for the elderly and the disabled, modernised buses and rail coaches.[27] It is also possible that the three km extension of the second metro to the west and east will depend on a successful bid for EU funds.[28] These projects will increase appetite and usage of public transport which is an important catalyst for unlocking new sites and optimising land use in the city.

Cohesive density at scale

Polish State Railways are increasingly active at mobilising land around many of Warsaw's key stations. **Warszawa Zachodnia Station** and **Centralna Park** are planned mixed-use developments, run by the PKP group through its subsidiary Xcity Investment. The Centralna Park project includes a 200m skyscraper, and integrated public spaces and green spaces for both railway passengers and workers. Warszawa Główna used to be Warsaw's main railway station, and today PKP is proposing a new office and commercial-led scheme to be sequenced to coincide with the re-opening of the station to passenger traffic.

Meanwhile at **Warsaw Gdańsk** station a modern office complex and commercial hub is being prepared in tandem with the new railway station. This ambitious project in particular presents an opportunity to rebalance Warsaw's north versus south divide. All these projects also offer potential for Warsaw to show what is possible when large plots can be managed cohesively.

Leadership by large landowners. Partnership between Warsaw's largest landowners and commercial developers is beginning to accelerate the pace of transformation in the city. Poland's national railway company PKP is one of the largest owners of land in the city and is now working to convert under-used train stations into hubs for retail and offices. This presents a major task for Warsaw's urban planners given the very large locations. Nevertheless, the progress on these sites highlights the fact that developers in Warsaw are able to offer different functions when they own larger land parcels.

Street life and place-making. Warsaw residents have lacked a strong emotional connection to the city fabric, but they are slowly rediscovering their high streets. This is thanks to a rejuvenation of gastronomy, beauty and clothing retail. Streets such as Nowy Świat Street and Plac Trzech Krzyży, and hot areas such as Powiśle highlight a new model of walkable and convivial shopping, restaurants and cafes.

But there are several barriers against this model becoming the norm. Shopping storefronts in public ownership are not well managed, reducing the visual attraction of the street compared to the manicured suburban malls which are still 'go-to' places for many income groups. There are too many cars for the city to become pedestrian friendly. As well as congestion and worsening air pollution, illegal parking and parking on pavements is tolerated. While the city centre is undoubtedly attracting more people, its real potential or demand is likely constrained by the unfriendly walking environment.

Constraints

Delivery capability. The slow pace of development of vacant lots in the centre has stemmed from a highly complex property ownership framework (see Section 3). Restitution of property to private owners picked up rapidly after 1990 but the tenure status of many lots remains unclear to this day.[29] This uncertainty has deterred developers from investing in brownfield in favour of greenfield sites. It has also forced development to surrounding districts that results in a lack of critical mass. Other factors affecting the deliverability of projects including sight line and shade disputes, and high parking requirements which reduce the feasibility of residential and mixed-use schemes.

Planning, leadership and governance. A lack of experience in managing market-led urban development, and an aversion to 'planning' because of the associations with Communism, left the city with a planning deficit into the early 2000s.[30] Attempts to guide development and define the framework under which it could take place were ineffective. Greenfield took precedence over inner city regeneration, despite the empty spaces in central districts.[31]

Warsaw's potential to steer better density was improved by reforms to establish a single municipality in 2002. A planning approach emerged that began to recognise the need for integrated and polycentric growth as a way of making the city more liveable and competitive.[32]

But Warsaw still has an **incomplete spatial development plan**, so large portions of the city lack any kind of planning approval. The Warsaw Urban Planning Unit decides which area is next to receive an urban master plan. Up to half of investments are made in areas with no master plan. Parts of business district Wola, for example, still await plan approval. In the absence of a binding plan, the process by which developers request and receive approvals and building permits becomes inconsistent and opaque. This works against the creation of an urban vernacular which is needed to increase the appetite for density among residents.

In addition, there are perceptions that centralisation of decision-making power at the Mayoral level has reduced the scope for district leaders to take the initiative on place-making and attractive density.

Housing ownership models. Warsaw has very high owner occupation of around 80 percent, because of the high deposits required to purchase a property. This system discourages mobility. An expanded private rented sector would expand choice but requires city and institutional support.

Financing. Warsaw is part of a larger region Mazovia which is much less prosperous, and so the city must cope with major net fiscal outflows. The region went bankrupt in 2013, which adds to pressure on the city to sell strategic public land.[34] Although the city is by law obliged to provide social infrastructure, it lacks the financing to do so in a comprehensive way, which affects the appeal of dense projects when they do go ahead.

Limited metropolitan collaboration. Although Warsaw is arguably an 'over-bounded' city (with borders wider than the urbanised area), a metropolitan tier of authority and planning would help the city co-ordinate some development that has spilt across its boundaries. A co-operative policy forum for regional leaders, the Programming Development of Warsaw Metropolitan Area, is an encouraging move in this direction that may see more efficient land-use outcomes.[35] Warsaw cannot solve its density and spatial challenges in isolation from its neighbours, especially given the fiscal re-distribution issues.[36]

Productive and connected density

The inner city district of Wola has more potential than most to become a vibrant mixed-use business centre. As well as emerging into a hub for corporate offices and headquarters, it is the fastest growing residential area in Warsaw in the last 15 years.[33] Until recently Wola had been dominated by factories, warehouses and pre-fabricated blocks with large vacant spaces.

Figure 14 View of Wola from the Palace of Culture

Photo by Boston9. Licence: CC-BY-SA-3.0.

The city and developers have been more successful here at overcoming the roadblocks of land restitution that plague the city centre. Although some social amenities have been lacking because of the weak planning framework, many of the projects consolidate a mix of uses on one site. Grzybowska Street has become a major location for 80-100 metre shared-use towers featuring offices, hotels and residential. The extension to Wola Park shopping mall is an important incentive for local residents to stay locally rather than travel long distances to suburban hypermarkets. The forthcoming second metro line is a major boost to local office development, especially in the Odolany district.

Warsaw examples of 'good' and 'bad' density

Examples of Warsaw's successful and popular medium and high density projects	
Miasteczko Wilanow	Planned since 1992, high-quality public space and sense of place, although lacks public transport links, schools and kindergartens.
Powiśle	Riverfront area popular with young people, 24 hour scene, anchored by university and cultural institutions – see Box.
Saska Kepa	1920s district in Praga that retains its charm and independent character.
Wilno, Praga	A more successful recent mixed-use development.
Wola	Business centre with growing mixed-use and faster pace of densification.

After many mistakes and lessons learnt, Warsaw now has many promising areas where dense building or dense street life activity is now taking shape. Central Warsaw is becoming more walkable, and the adoption of the banks of the Vistula River as a space for recreation and nightlife is increasing affection for city living.

Some pioneering spaces are showing how Warsaw can achieve '24 hour' vibrancy. Until recently this was absent because of the dominance of cars, congestion and the distance between entertainment hotspots and residential areas.[37] The first-mover districts in creating mixed-use density are beginning to drive Warsaw's participation in a higher value innovation economy.[38]

The challenges in Warsaw's examples of unsuccessful density vary depending on whether the location is central or suburban:

- In central districts, monotonous or mono-functional development is often the key problem. In Służew Przemysłowy, known colloquially as 'Mordor', a vast amount of office space was built with no single master plan, with residential developments built only much later. Its mono-functional character forces workers to commute to other activities in the city.

In 2015, Warsaw is rated the ninth most congested city in the world by TomTom's Traffic Index. It has unusually high patterns of traffic on both highways and regular roads. In the EU, only Bucharest is more congested.

Similar issues are occurring in Żoliborz, where rapid developments and population increases are not coordinated by a master plan. In addition, high-rise developments on Grzybowska street are mushrooming due to its central location for retail and office-based activities, but lack co-ordination with overall infrastructure due to a lack of cohesive local planning.

- In suburban districts the challenge is the development of large housing estates in peripheral empty areas that are not joined up to the transport network. Notable examples include substantial projects by Dom Development in Białołęka, which has seen a surge in housing, with amenities proving slow to catch up. Some of these projects are well liked by residents and difficult to re-engineer or to densify, and there is local opposition to additional housing especially when there is a social housing component.

Warsaw may need to restructure its spatial economy to unlock a more productive model of density. Currently, a large number of workers converge on a relatively small employment area and saturate the radial routes leading there.[43] There is high reliance on cars across income groups - 300,000 vehicles were added to Warsaw's daily commute between 1995 and 2009.[44] With a quarter of Warsaw's workforce coming from outside the city boundary, congestion along arterial roads is severe.[45] This has obvious productivity, health and environmental consequences.

Popular density to inspire the young: Powiśle

Powiśle is the most successful recent example of vital density in Warsaw. Situated beneath the historic Poniatowski Bridge, Powiśle was destroyed during World War Two and until recently was a run-down part of town consisting of prefabricated blocks, empty light industrial infrastructure and a handful of shops.

A new Warsaw University library and Copernicus Science Museum were major catalysts for the area's development. The library's bold concrete and glass structure, and rooftop garden, provided a striking new public panorama of the city. This was followed by the *Czuły Barbarzyńca* bookstore that set a new trend for bookshop cafes that offer a superior experience to large megastores for Warsaw's young readers. Gradually, and organically, its streets became the centre of a new fashion district, with cafes and housing constructed around it.

Conversion projects such as the pavilion of the former train station have tried to retain the character and design consistency of the old modernist building, which has led to it becoming a symbol of revitalised cultural life in the new Warsaw. Many of the new venues stand out for their interior design that mix 1960s aesthetics with 21st century elegance. A restored Poniatówka-beach has become an iconic city beach location. Mercedes Benz has constructed a pop-up lounge and showroom called Stacja Mercedes every summer since 2013.

Figure 15 Powiśle's new developments (l)[40] and iconic meeting places (r)[41]

Powiśle is one of the first areas of post-Communist Warsaw to offer an attractive inner city riverside destination for young people to spend evenings and weekends. It demonstrates to other districts the benefits of a 24 hour economy in attracting locals and visitors. It is encouraging developers to take more account of the historical character of districts in new development. One example is Hochtief Dvelopment's *Nowe Powiśle,* a new 42,000 sq m mixed use scheme on a former power station that combines luxury residential with a popular office project close to metro and rail lines.

Some remote suburbs and commercial districts are still not perfectly linked up to utility grids, transport and public services.[51] These deficits have increased the cost of rolling out and maintaining urban infrastructure and service delivery, and contributed to environmental stress and social fragmentation. Vacant land is still being by-passed because of the complexity and costs to reclaim it. As a result, many of Warsaw's major new retail developments, such as Gallery North in Białołęka, 10 km north of the city centre, are very large low density projects with thousands of parking spaces included. This means that Warsaw must work hard to try and prevent becoming locked in to a development model that is inefficient and potentially uncompetitive in future cycles.

Authentic density

Just one kilometre from the national stadium, Nova Praga has emerged as an alternative creative district that specialises in art, film, gastronomy and nightlife. The area was not destroyed during the war and was largely ignored during Communist phases of development. Once known as the 'Bronx' of Warsaw, the district has re-emerged because of cheap rents and a reputation for authenticity.[46]

Nova Praga's densification is enabled by public investment in transport connectivity across the Vistula River to integrate the area with the CBD. The 2014-22 Revitalisation Programme will see the area receive up to 1.4 billion zł (€330 million) to improve the public realm and the standard of services.[47, 48]

As in Powiśle, a new museum (Warsaw Museum Praga) is catalysing denser activity in Praga port, whose local plan combines three high-rise buildings and other mid-rise developments. The area will be developed along four axes:

- The Docks - residential developments and mixed retail and leisure facilities
- The Media park - cultural and leisure hub integrated with the Copernicus Science Centre.
- 'Old Praga' residential development will be aesthetically integrated into the fabric of the old city
- The Trade and Business City for office developments, located close to the metro which links directly to the CBD.

Figure 16 Vision of Praga Port[49]

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Learning the lessons from Warsaw's segregation of uses, Nova Praga has the potential to become a genuinely mixed-use centre of housing, offices, media, culture and trade. This new model is widely anticipated in Warsaw. The city now faces the challenge to ensure that the area retains its character and residential appeal, with the right mix of commercial and independent retail and the right offer to support rather than crowd out innovation, all combined with improved accessibility.[50]

Future outlook and the journey towards good density

Warsaw has the capacity and potential to be much larger than it is. It could grow to a city of three million people, co-ordinated within the city boundaries, if the right set of reforms, policies and projects are brought forward. Compared to other cities of its size, importance and growth trajectory, Warsaw currently lacks many of the fundamental elements to plan, co-ordinate and deliver good density (see Figure 17).

There are, however, some positive signs of re-urbanisation. Ring road and river crossing projects are underway to relieve the city's radial structure, while the second metro line is beginning to catalyse a welcome phase of transport-oriented inner city development. Bus, tram and cycling schemes (e.g. Warsaw City Bike) are taking some cars off the radial network, and some suburban malls are becoming more multi-functional.[52] As Warsaw's industrial sites enter into a new phase and are converted, there are many opportunities for the city to blend the old and the new and create exciting new spaces.

Warsaw needs a much more positive psychology of density. The last 20 years of unplanned development means that for many Warsaw residents the idea of density evokes the idea of 'more towers' or so-called 'Dubaisation'. Equally there is very little affection for the pre-fab block model of monotonous residential density imposed in the mid 20th century (see Figure 18). In Warsaw the desire to benefit from capital city functions and then to 'escape from the city' is still strong, because of three or four generations of failure to assemble and design density in an appealing way. But there are emerging signs of civic pride in Warsaw, with more young people expressing their passion and affection for the city and its river.

Warsaw will not be able to build appetite and desire for density easily without a clearer vision for the city that has credibility and buy-in. Despite its obvious advantages and economic success, the city lacks ideas or planning for what kind of city it could or should be in 2030 or 2040. This leadership failure results in a status quo where residents have few incentives to support densification.

For Warsaw to become a dense polycentric city it may also need some or all of the following:

- **A new longer term city development strategy.** First and foremost, Warsaw needs a plan to come forward quickly, that sets out to define both the key areas for development and the tools and arrangements that will be available. The city's spatial development approach needs plans that cover the whole Warsaw territory, and which provide confidence in the consistency and transparency of decision-making.

Figure 17 Fundamentals of success for good density in Warsaw

	Durable city plan	Fiscal autonomy and flexibility	Transit-oriented development strategy	Metropolitan planning approach beyond city borders	District agencies and development corporations	National planning and policy framework for cities
Warsaw	*	*	*	*	*	*

**** Established   ** Partly visible   * Not strongly visible or developed*

Figure 18 Perspectives on density in Warsaw

Learn from the past *"In Warsaw, the most popular and expensive neighbourhoods are dense and have quality public streets and squares: Stary Zoliborz, Saska Kepa, Mokotów, and the historic reconstructed part of Warsaw. There is a great deal to learn from pre-war Warsaw of how to deal with density."* **Maciej M. Mycielsk, MAU Architects**	**Optimise the existing fabric** *"There will be no more projects like Ursynów or Bemowo, but we cannot get rid of housing estates consisting of smaller or larger blocks. This is the only type of building which guarantees economically reasonable population density and comfortable space. Single family houses generate huge costs to provide transport and infrastructure to vast areas." Radosław Gajda, architect* **Radosław Gajda, architect**[53]
Diversify the housing stock *"Postwar reconstruction has created a city whose landscape is dominated by blocks. Why was our town rebuilt in this way? Is there really no escape from the block?"* **Janek Glen, Twarze Warsawa, 2015**[54]	**Planning must come first** *"A right to a piece of a land is not identical with a right to build anything upon it. Spatial planning is a way to moderate the conflicts which arise between the interests of the individuals and the public interest. The invisible hand of a free market will not replace a conscious and rational spatial planning."* **Dr Gregor Buczek, Warsaw Technical University/European Property Institute** [55]

- **Much more effective district administration**[56] which ensures that projects are embedded in the city district, through proper planning and neighbourhood networks. Warsaw lacks an identifiable 'city of villages' character. A neighbourhood structure built around attractive district centres is key to achieving the walkable city that will change the resident mindset towards dense city living.

- **A metropolitan transit strategy** with authority that crosses city boundaries.

- **Dedicated development agencies** with strong powers to purchase land, and to better coordinate the regeneration process in some of its key districts, such as Wola and Praga.

- **The ability to sell additional construction rights.** Many other cities in Warsaw's development cycle have sold 'air rights' to fund important infrastructure. Currently development rights do not exist in Polish law. Elsewhere this tool allows private resources to be tapped more efficiently and to distribute the costs and benefits more evenly. The auctioning of certificates can be converted into the right to build above the basic floor area ratio in designated areas. This model gives developers the option to densify while giving the city funds in advance to invest in infrastructure before construction begins. This is one form of value capture that could be promising for Warsaw.

- **A national framework to highlight and leverage the role of Warsaw and leading metropolitan areas.** Such a framework has been blocked repeatedly because the idea of equalising Poland's regions prevails.

- **Bold attempts to create a more positive psychology of density.** Attention needs to be paid to educational initiatives that drive behaviour change on transport and public space, and projects that show the benefits of well managed densification.

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