TRANSIT ORIENTED DEVELOPMENT AN INCENTIVE FOR PROPERTY VALUE

Greeting!

I am Harizul Akbar

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INTRODUCTION

Common Issues

Until 2015 housing backlog in Indonesia reached ***11.4 million*** *housing units*

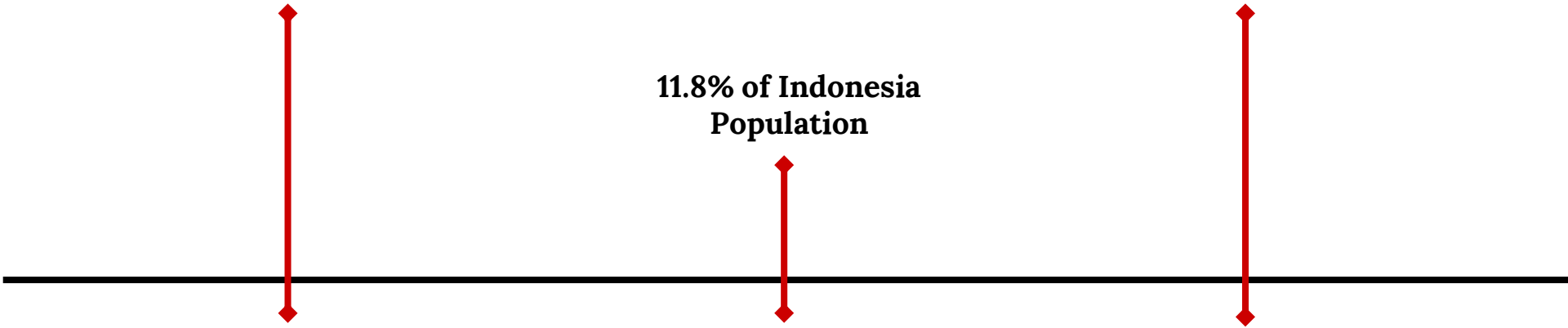
Housing Problem & Urban Sprawl

Greater Jakarta as Economic Center

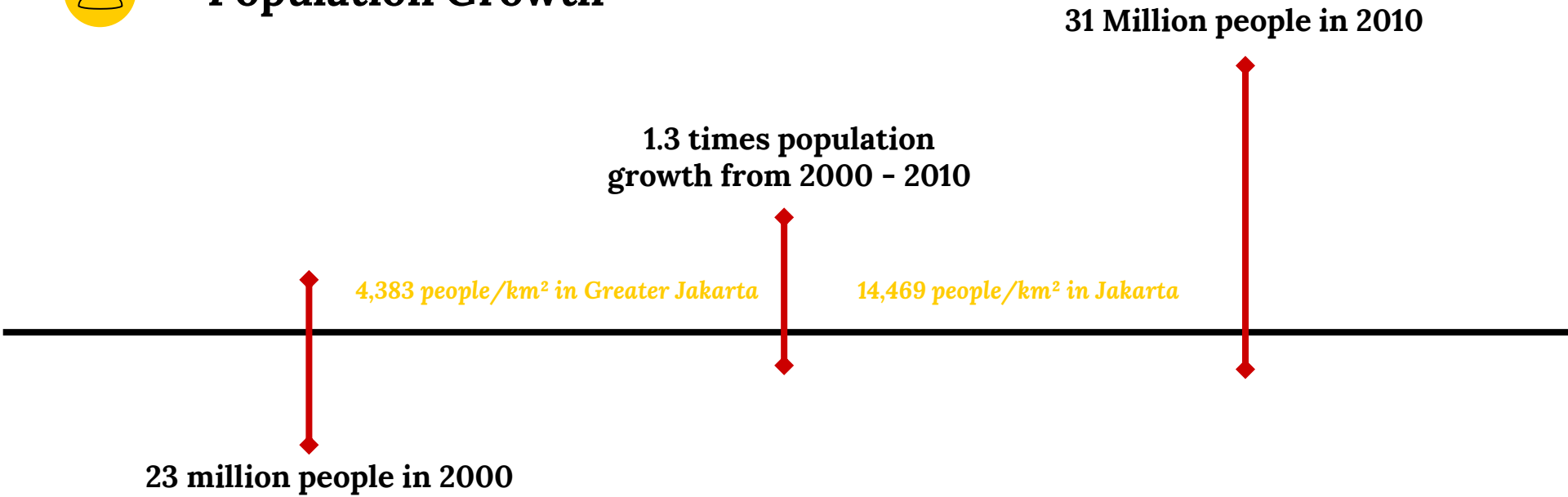
25% of National GDP

11.8% of Indonesia Population

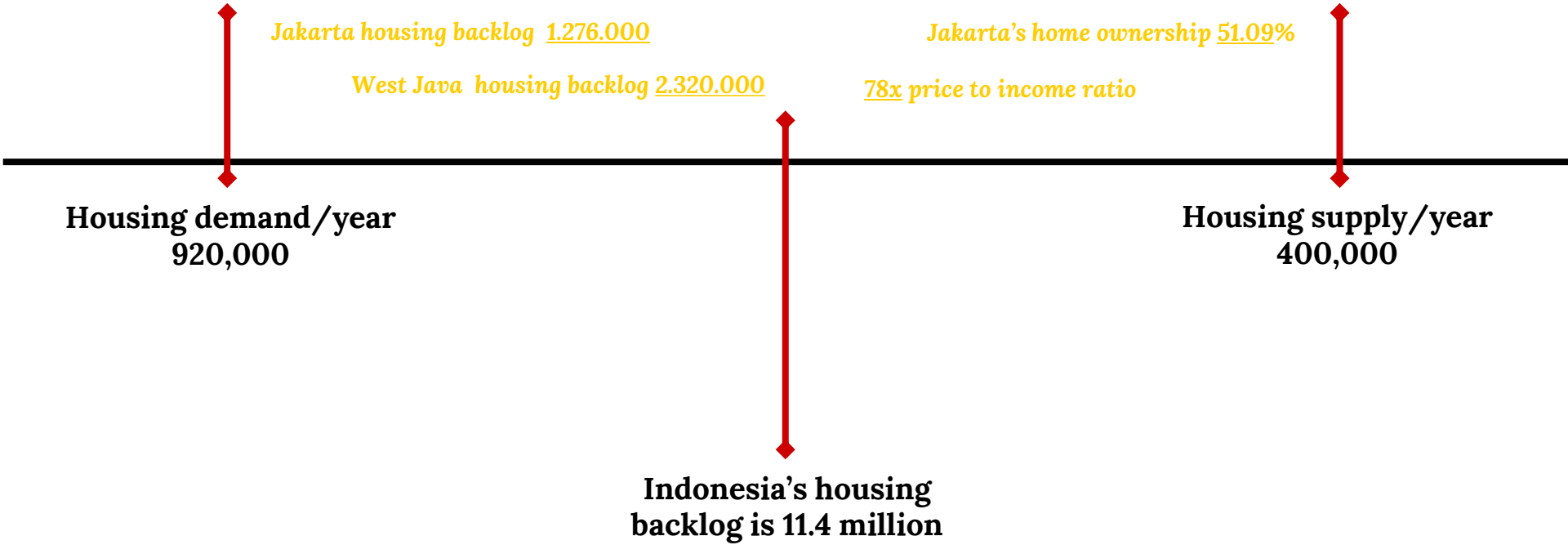
40% of Foreign Investment



Population Growth

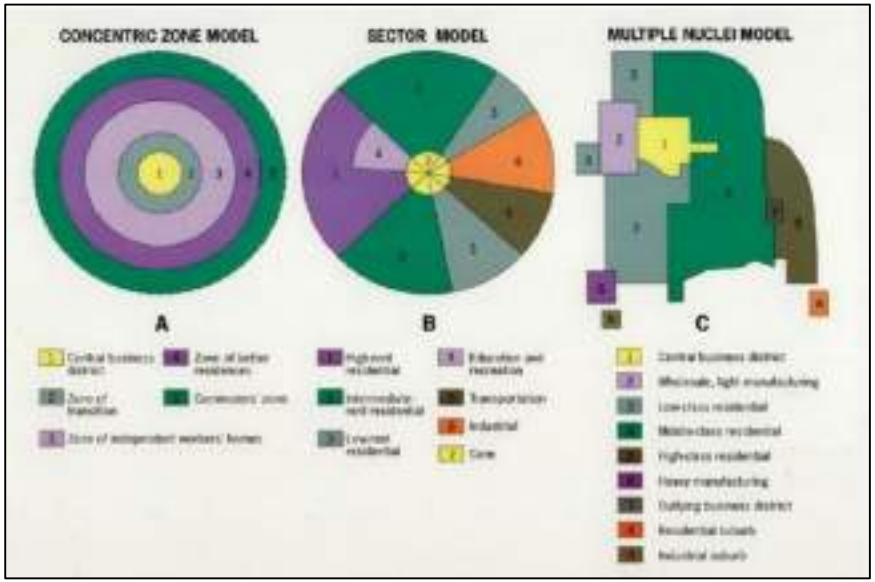


Housing Backlog




Slum.Sprawl.

Housing Problem & Urban Sprawl

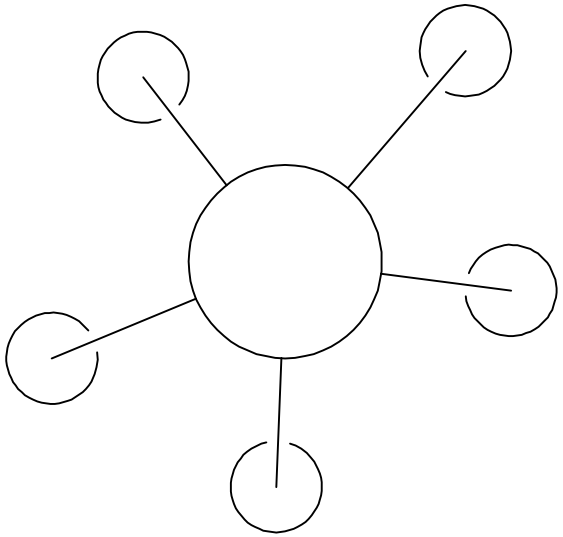


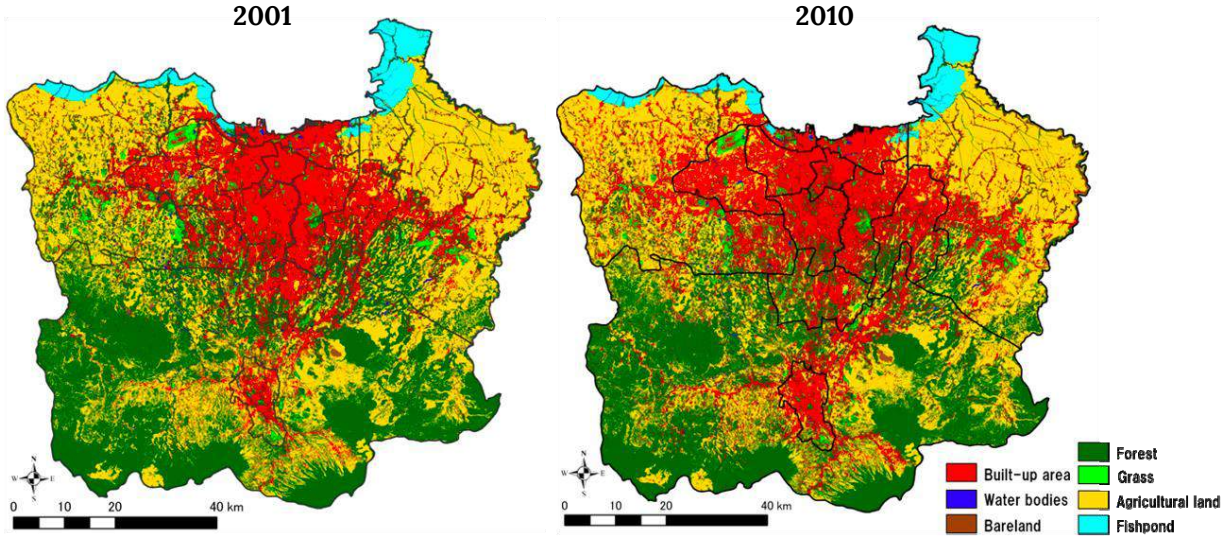
Low-income people should live closer to the central business district due to mobility effectivity and transport cost efficiency.

Greater Jakarta shows opposite trend. Low-income people mostly live in Jakarta buffer zone.

The impact of this situation is a significant **increase** in **transportation cost, travel time, and travel distance**.

Land Use Conversion

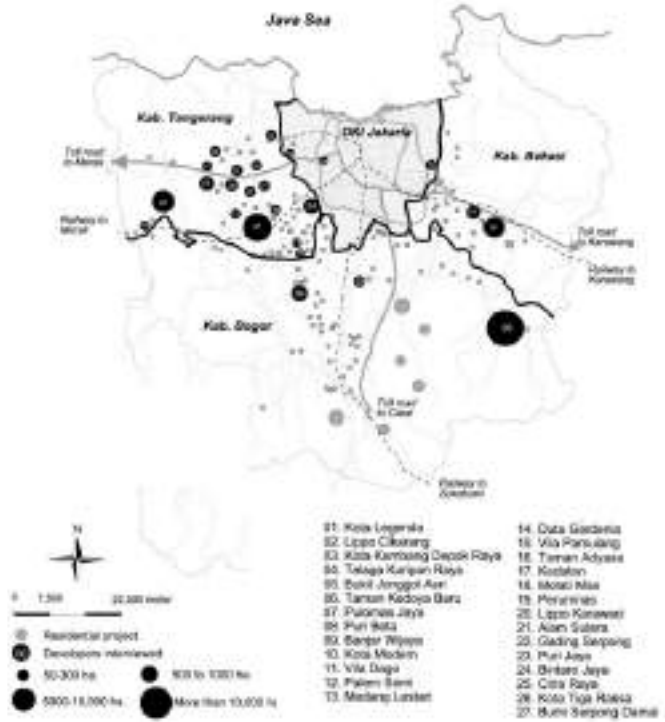




Source: Nagasawa, et.al (2015)

The build-up areas in Greater Jakarta increased from 544 km2 to 849 km2 during 2000 – 2010 with a growth rate of developed area of 4.6 % per year

Land Use Conversion



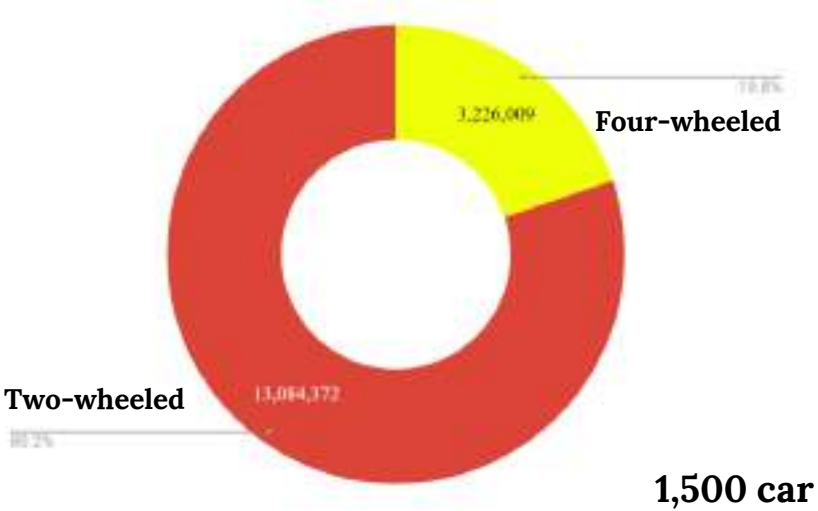
Source: Herlambang in RITJ (2015)

There are at least **27** new large-scale cities developed in Greater Jakarta until 2010.

Covering area ranging from **500** to **8.000** hectares

Those new towns only function as **dormitory towns** that fully **socio-economically dependent** on Jakarta, which significantly increases the burden of daily mobility between those new towns and Jakarta as the center of economy

Transportation Problem



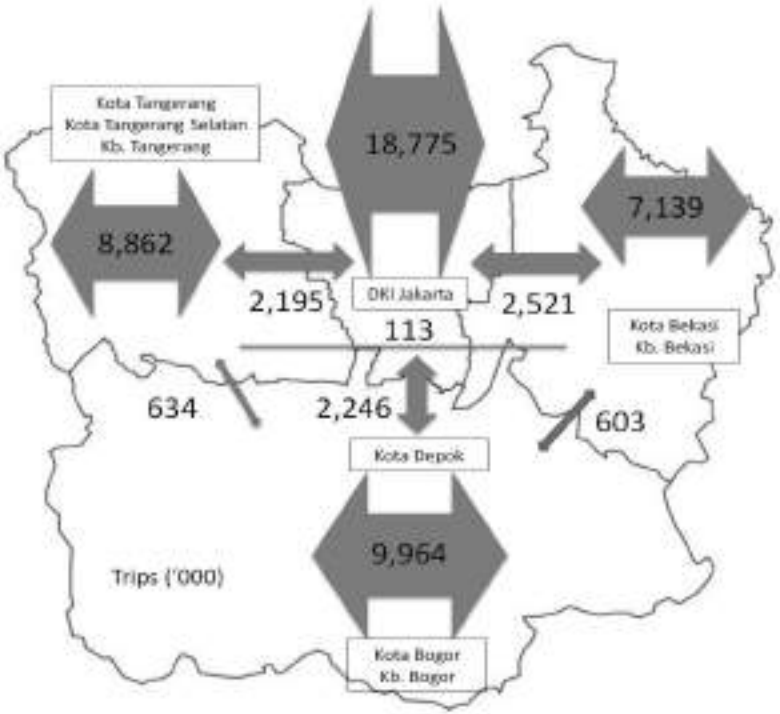
4,500 motorbike growth/day

1,500 car growth/day

0.01% road growth

Transportation Problem

Transportation Problem



Source: Japtrapis, 2012

A **poor public transport system**, **lack of facilities** that provide passenger comfort and safety, and **uncertainty waiting time** became a trigger factors for the public to use private vehicles.

Stuck.

Transportation Problem

Road-to-Vehicle

2,077 vehicles/kilometer

Road-to-Area

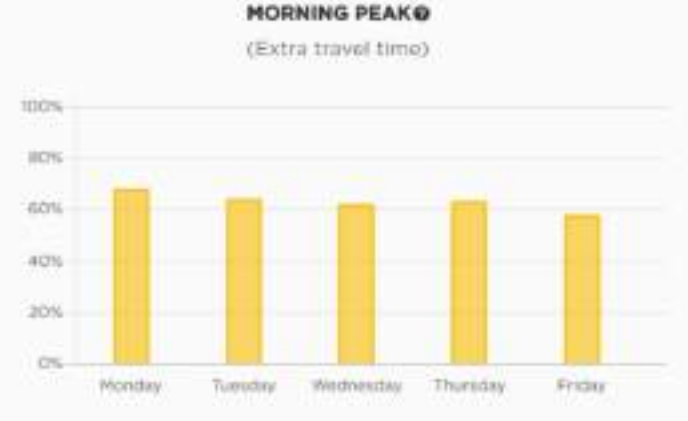
5,42% → 40 km²/740 km²

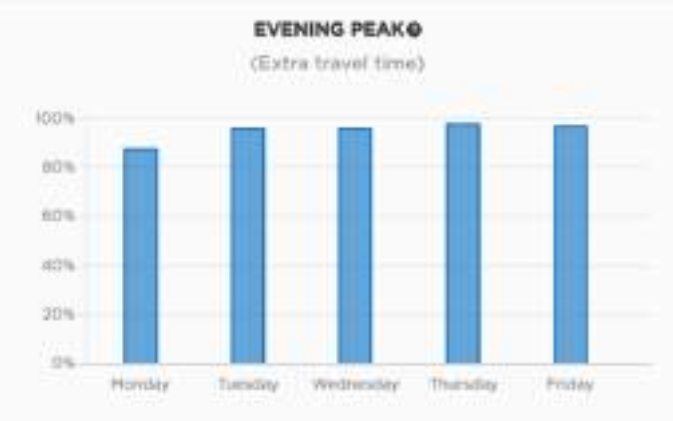
International standard : 15% for major cities

Extra Travel Time

58% = 48 minutes/day = 184 hours/year

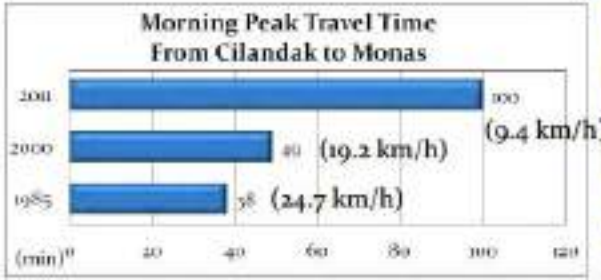
Transportation Problem



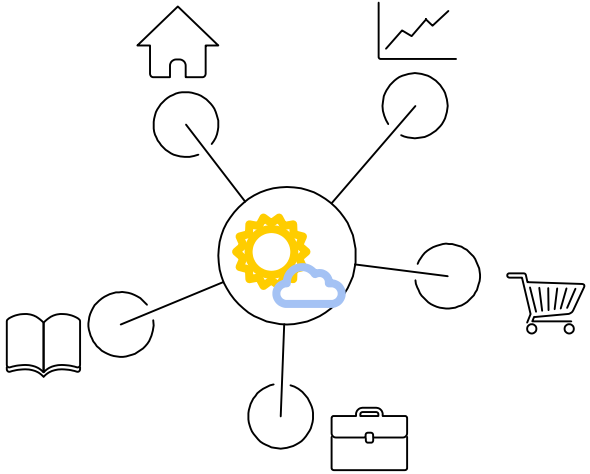


Source: TomTom Traffic Index, 2016

Transportation Problem



Economic losses caused by congestion in Jakarta amounted to **67.5 trillion rupiah** or **US $ 4.73 billion** which included health losses, environmental losses, social losses, and of course time losses (Bappenas, 2017)



Transit.Oriented.Development

Emphasizes the integration function between mixed-use and transportation system to create an area that environmentally friendly, high density, and integrated

Transportation Policies

Bus Rapid Transit

Since 2004

242 stations

13 corridors

113 routes

502,389 passengers/day

144.86 million passengers of 2017

Commuter Line

Since 2008

6 lines and 13 relations

80 stations

418.5 km route length

953,932 passengers/day

315.8 million passengers of 2017

Mass Rapid Transit

Began construction 2013

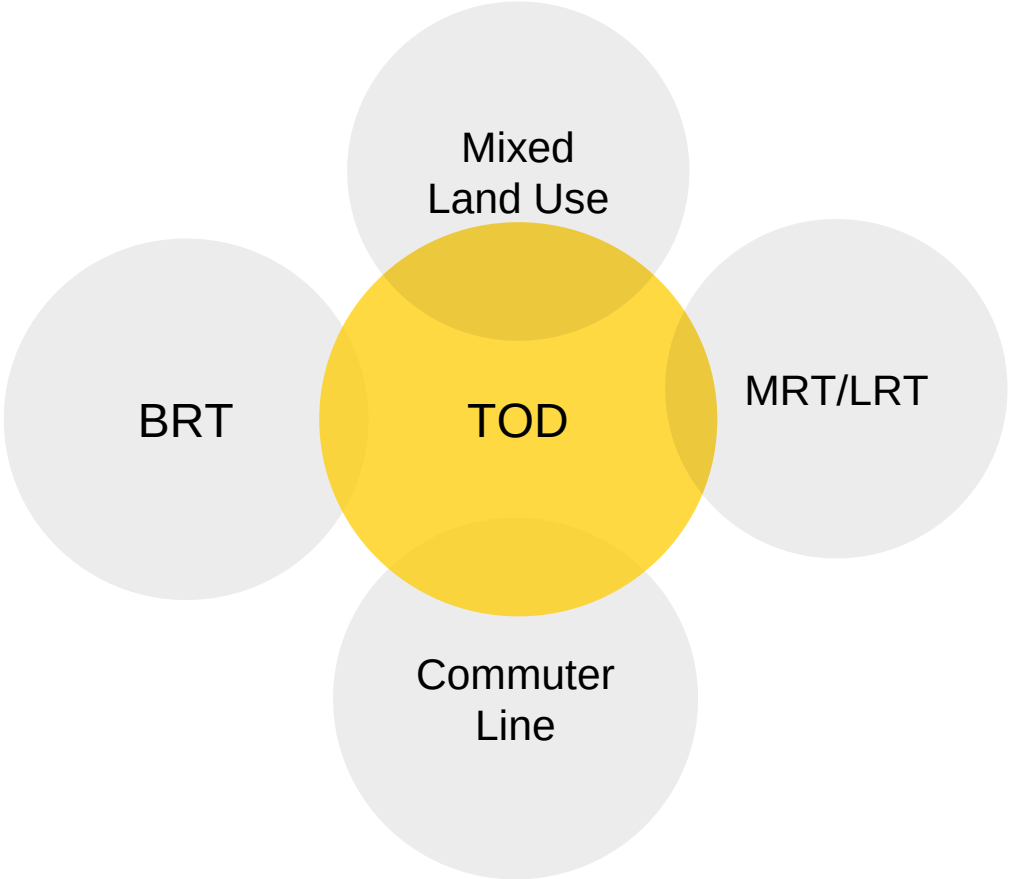
Expected operation 2019

2 lines

13 stations

35 km of 110 km route length for first phase

Synergies Between Land Use and Transportation Planning

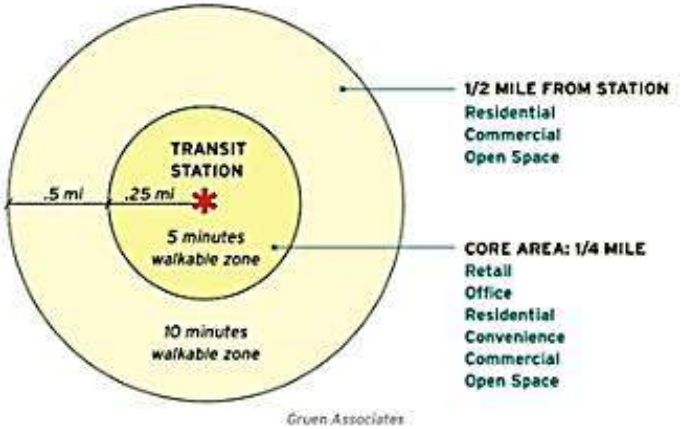


COMPREHENSIVE POLICY

A series of policies to improve public transportation, will be difficult to be effective if not followed by improvement in housing and land use sector


Commute.

Understanding TOD



TOD is a mixed-use area with an average distance of 2,000 foot walking distance of a transit stop and core commercial area. TOD offers high density area, complete with social facilities and commercial facilities, both retails and services.

Understanding TOD

Core Commercial Area

Provide convenience retail & local-serving offices. The core commercial represent at least 10% of total TOD

Residential Area

TOD residential areas include housing that is within convenient walking distance from the core commercial areas and transit stops.

Park, Plaza & Civic Buildings

Public and social facilities such as parks and plazas must be available within TOD area.

Streets and Circulation

Width of the road, maximum speed limit, and number of lanes must be reduced, while bicycle path and sidewalk greening must be maximized

Pedestrian and Bicycle

Pedestrian and bicycle routes should be located along or be visible from all streets. The must provide clear, safe, and comfortable access to the core area and transit stop.

Transit

Transit stops should be centrally located and adjacent to the core commercial area.

Parking requirements & configuration

TOD area should minimize the availability of parking facilities, especially in residential areas. For commercial areas, parking facilities may be provided but with a limited number

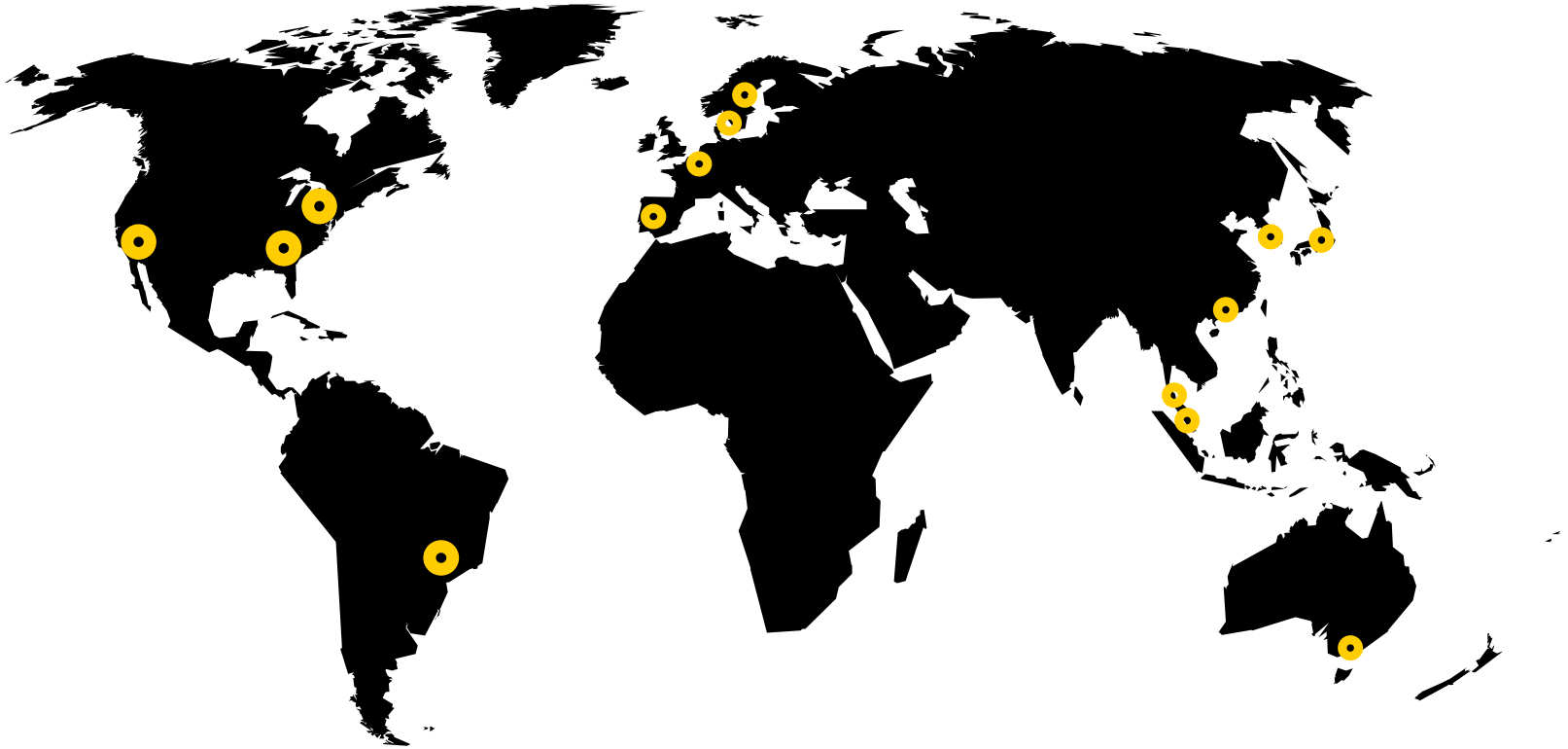

CINEMA


APARTMENT TOWERS
RETAIL MALL
SHOPHOUSES
SHOPHOUSES
APARTMENT TOWERS
APARTMENT TOWERS
SHOPHOUSES
SHOPHOUSES
APARTMENT TOWERS
SHOP HOUSES
SHOPHOUSES
LRT STATION
APARTMENT TOWERS
SHOPHOUSES
APARTMENT TOWERS
FEATURE TOWERS
SHOP HOUSES
APARTMENT TOWERS

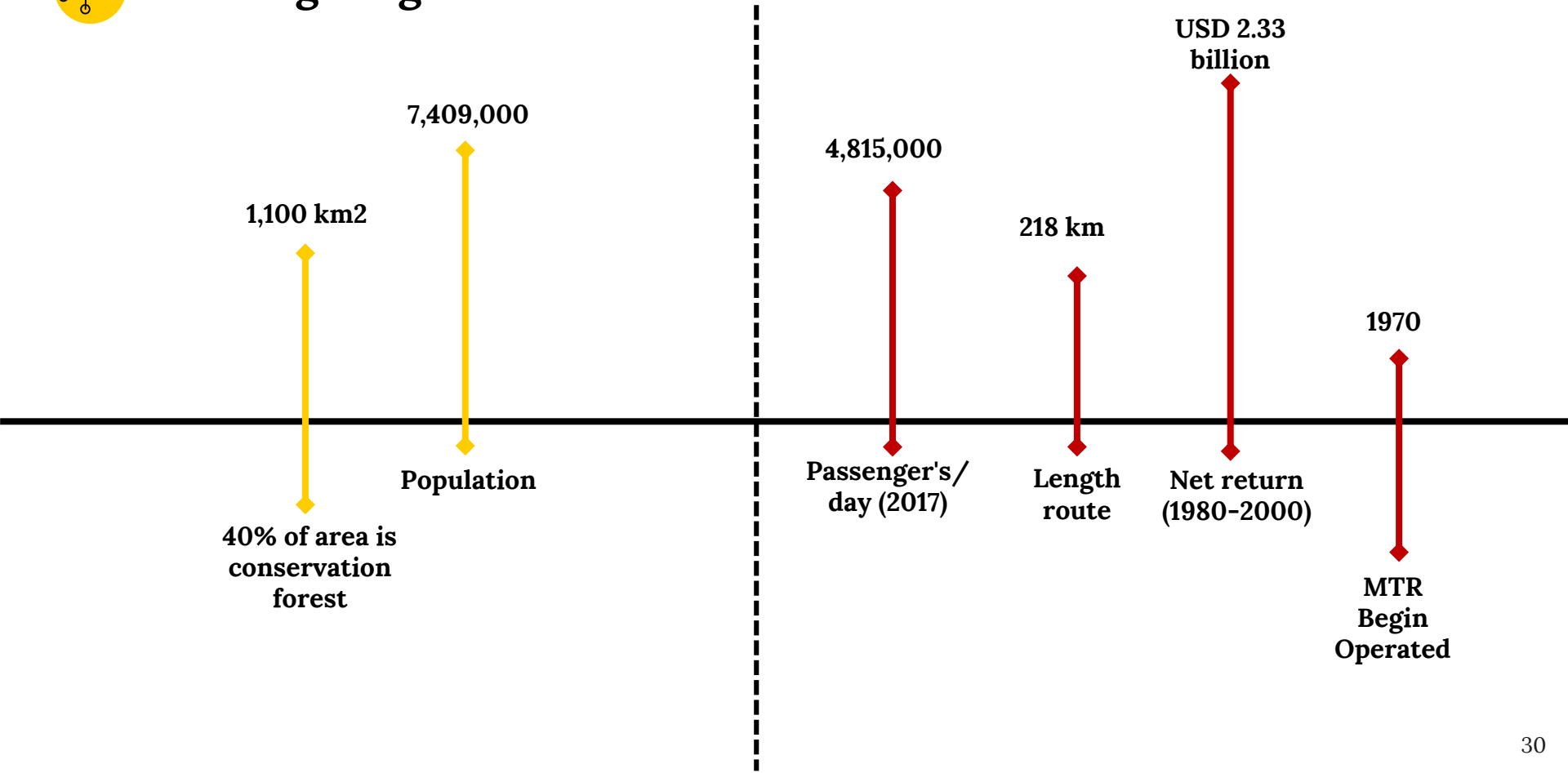
Understanding TOD

Source: ITDP, 2013

TOD Best Practices



Hongkong TOD



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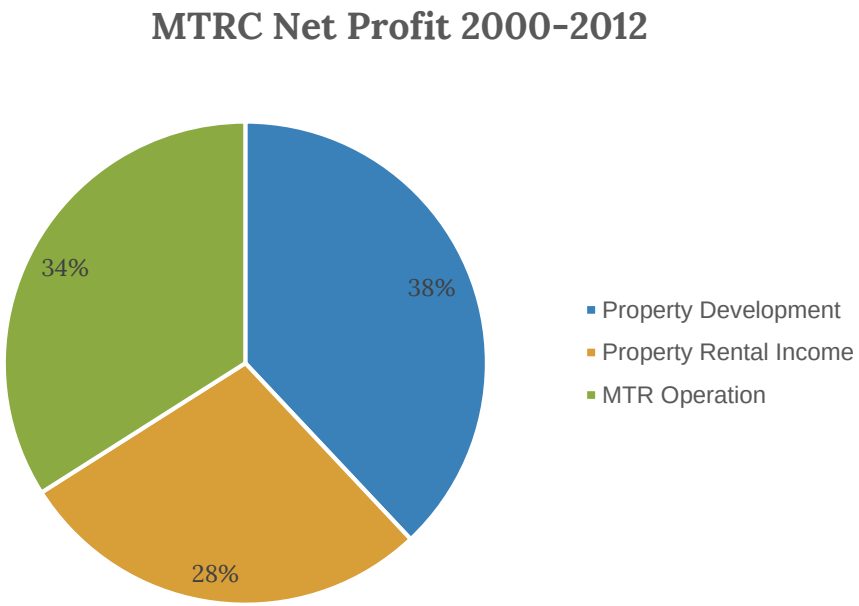


Source: Suzuki, H., Murakami, J., Hong, Y., & Tamayose, B. (2015)

Source: Study of the Integrated Rail-Property Development Model in Hong Kong (Tang, Chiang, Baldwin, & Yeung, 2004)

Greater Jakarta TOD – Regulation Hierarchy

Jakarta Governor Regulation No. 182 of 2012

- Urban design guidelines for TOD in Jakarta
- Integrating TOD and MRT Development

Jakarta Governor Regulation No. 44 of 2017

- Basic principles
- General & technical criteria
- Not regulate TOD outside Jakarta

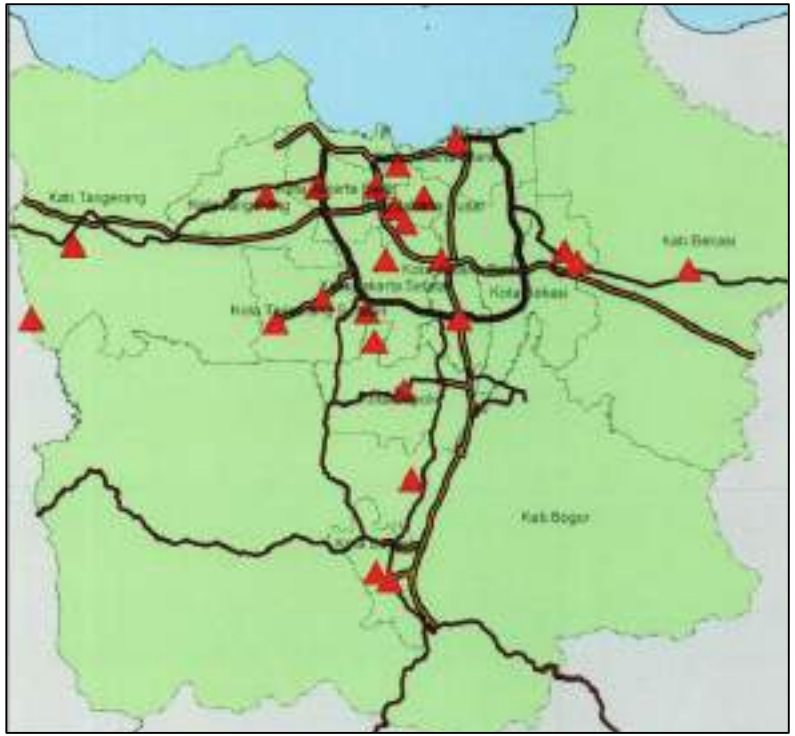
Agrarian and Spatial Planning Ministerial Regulation No. 16 of 2017

- Basic principles
- Regulate TOD outside Jakarta (Greater Jakarta)
- Criteria for determining TOD location
- TOD formal institution

Presidential Regulation No. 55 of 2018

- Integrating transportation infrastructure (MRT,LRT,BRT)
- Final location for TOD development
- Determine TOD into three scales

Greater Jakarta TOD



Source: Presidential Regulation No. 55 of 2018

23 Regional TOD

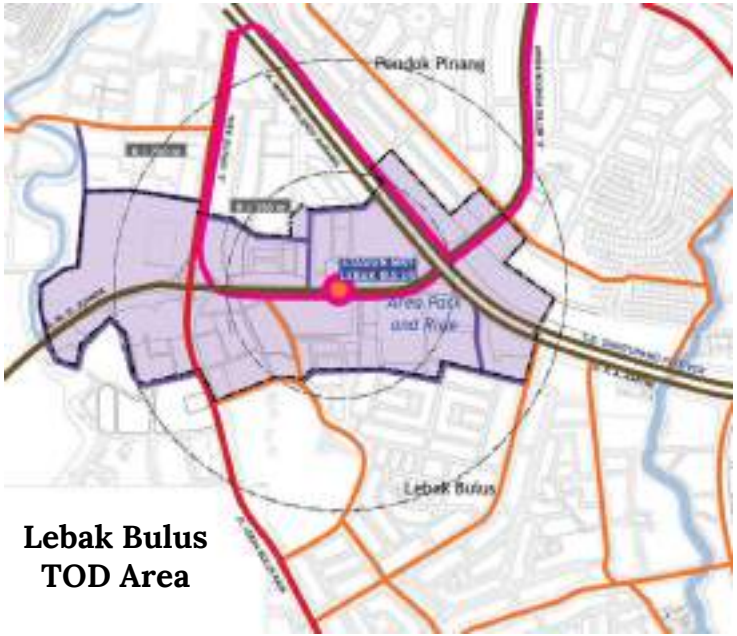
Including Jakarta, Depok, Bekasi, Bogor, Tangerang, and South Tangerang

7 have been started construction

Including Tanjung Barat, Pondok Cina, Pasar Senen, Juanda, Tanah Abang, Bogor, and Lebak Bulus

Some are only ceremonies

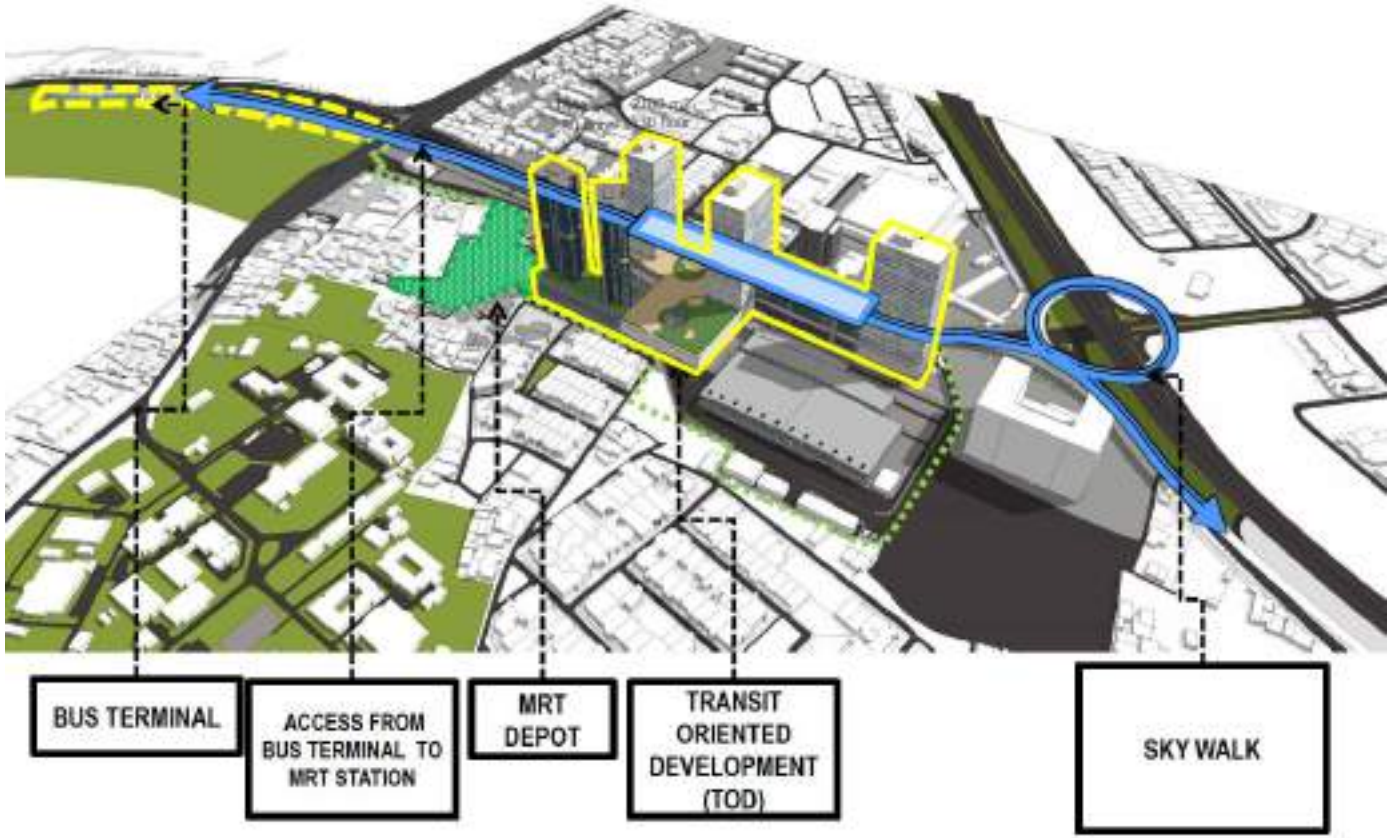
Jakarta TOD Areas



Lebak Bulus TOD Area

Istora, Senayan, Bendungan Hilir TOD Area

Lebak Bulus TOD Planning



Values are influenced by four main factors, social, economic, government policies and ***environment***

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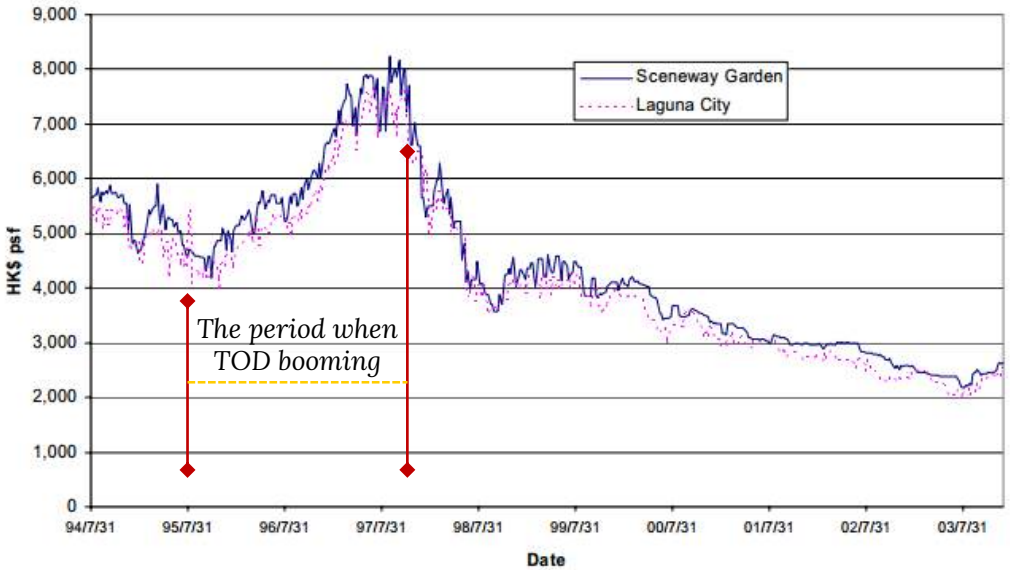
TOD Impact on Property Value: Hong Kong

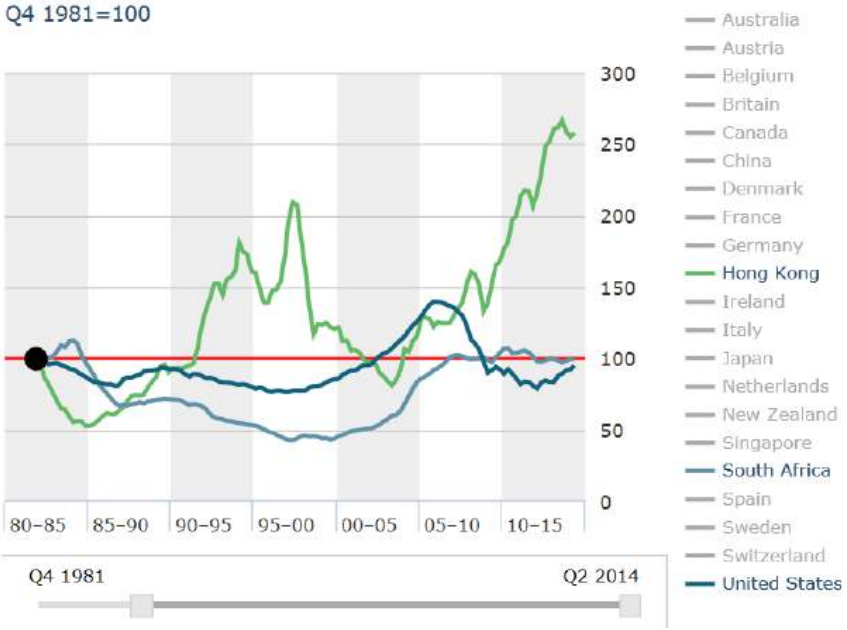
Hong Kong's Property Price Movement 1994 - 2003



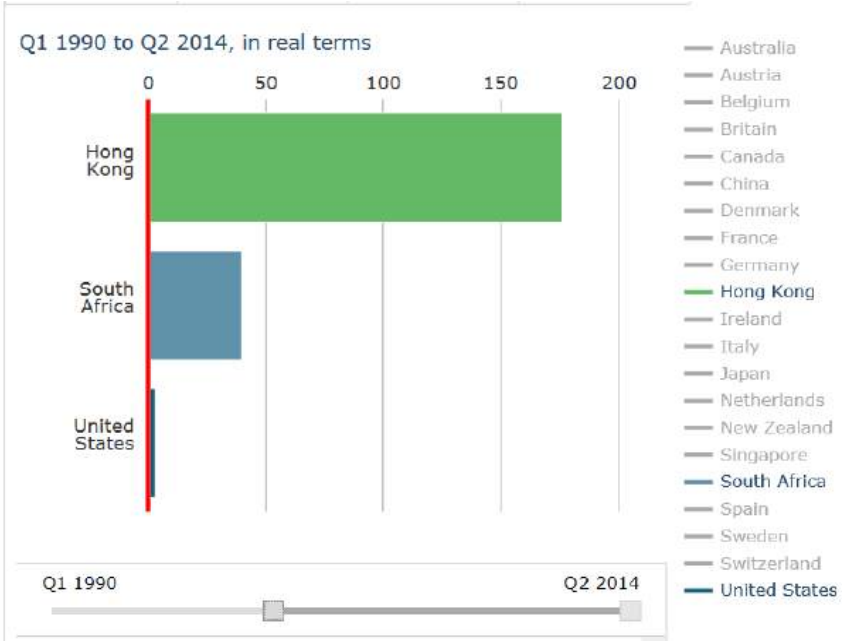
During 1995 – 1998 property price in Sceneway Garden & Laguna City rose by 46% from 4,200 HK$ to 7,800 HK$ (15% annually)

TOD Impact on Property Value: Hong Kong

Prices in Real Terms



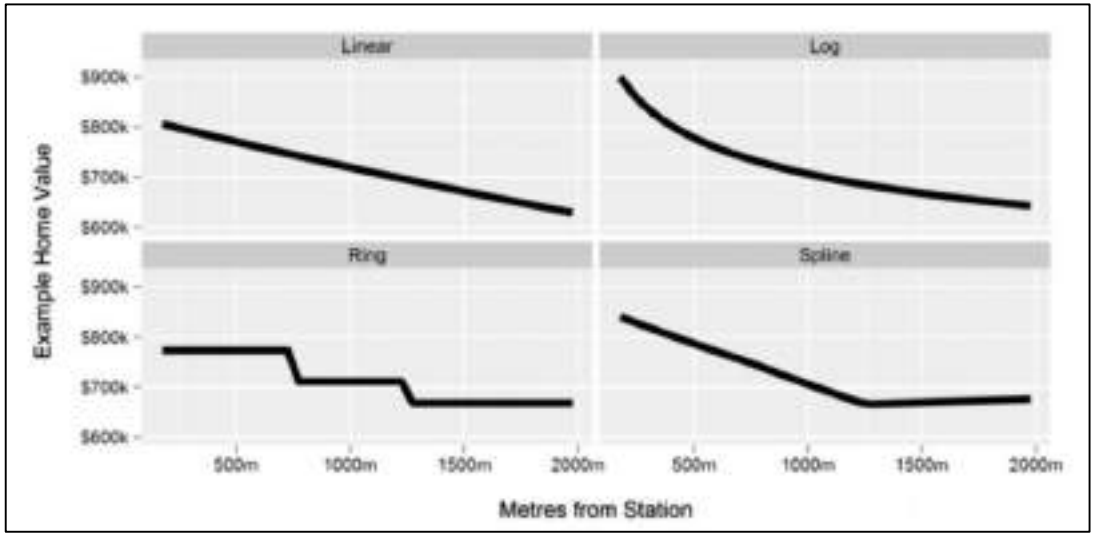
Percentage Change



Source: economist.com

TOD Impact on Property Value: Melbourne

By using **hedonic pricing analysis** method, Sim, Krause & Geidemen (2015) analyzed the effect of distance on residential property price around TOD Hill Box, Melbourne.



Source: Eileen Sim, Andy Krause & Kimberly Winson-Geideman (2015)

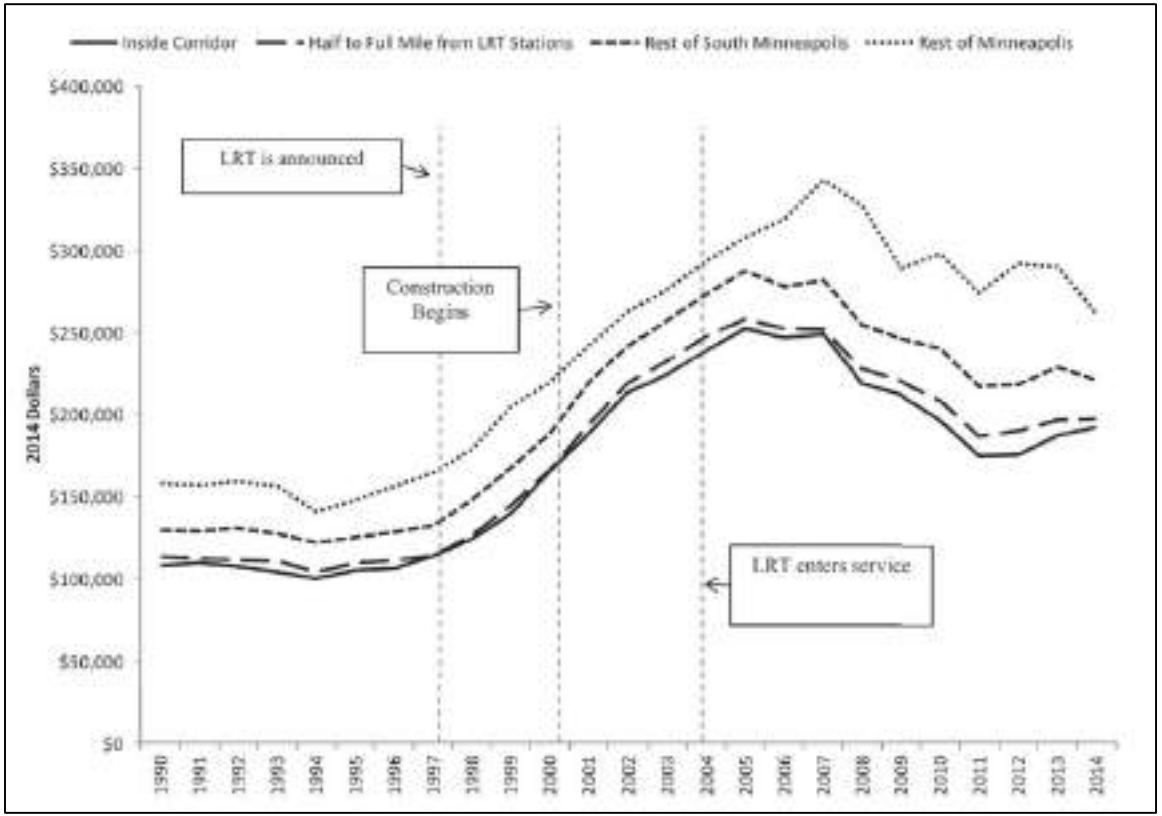
Linear Model
Decreasing price of 13.8% for each increase of 1 from the station.

Log Model
Decreasing price of 13.9% for doubling the distance from the station.

Ring Model
Homes located in the second ring (750-1250 m) are worth approximately 8.0% less than those in the nearest ring (0-750m). Homes in the third ring (1250 m and more) are worth 13.7% less than those in ring 1.

Spline Model
Price decrease similar to ring model, but for the distance greater than 1,500 m the price decline stops to occur.

TOD Impact on Property Value: Minneapolis



Source: Pilgram & West (2018)

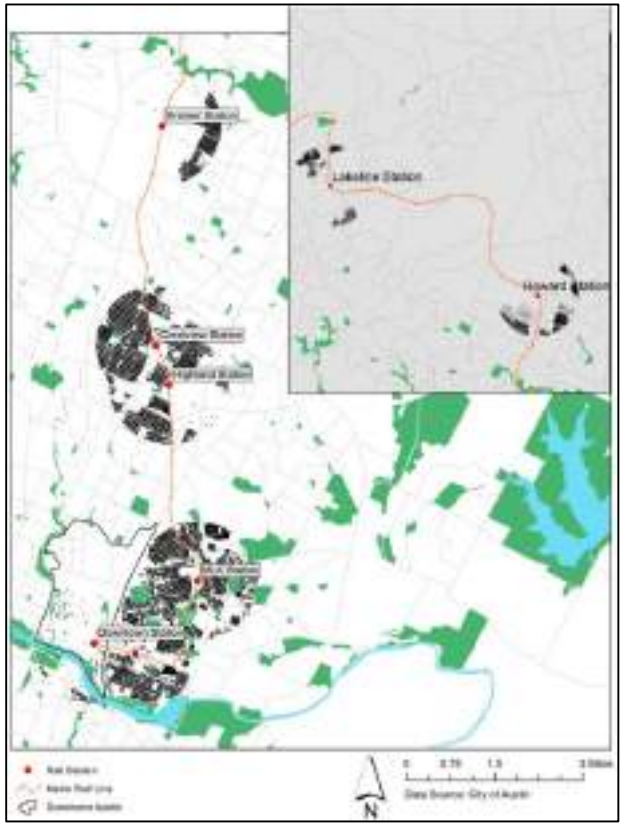
Before LRT
Houses price tend to stagnant, even decline from 1990 -1997

Announcement Period
Rose from US$160,000 (1997) to US$ 225,000 (2000) → 40,63%

Construction Period
Rose from US$ 225,000 (2000) to US$ 280,000 (2004) → 24,44%

Service Period
Rose from US$ 280,000 (2004) to US $ 340,000 (2007) → 21,43%

TOD Impact on Property Value: Austin



Source: Yu, Zhang, & Pang (2017)

Samples
15,926 residential houses

Result
Land prices increase as properties closer to commuter rail stations every 1,000 ft.

Additional land price ranging from US$ 0.12 to US$ 0.6 per square feet

*"Increasing **mixed-use development** around station area will be **translated into increasing land prices** and therefore in a long run will facilitate economic growth"*

Conclusion

TOD Benefits

Travel time & travel cost saving, reduce dependencies on private vehicle

Reduce traffic congestion, significantly

Road safety benefits

Reduce traffic accident

Concentrate land development and urban activities around the stations

Reduce urban sprawl potential

Better housing supply & options

Reduce housing backlog

Positive property values

Triggering property market into new stage

Financial gains to government

Increasing property rates & taxes

Positive economic growth and employment opportunities

The emergence of new business center around station

Environment health benefits

Reduction roadside pollution, decrease government medical expenditure & productivity gains (healthier workforce)

Challenges

Different one and other

Integrated urban renewal

Land consolidating

Collecting idle land

Decide best scenario

Gov-SOE Partnership/JV/PPP

Value anticipation

How to interpret property value in TOD area

Thanks!

Any questions ?

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