

# ICED Evidence Library

## Urban Productivity linkages to economic growth

Cities are a key driver of national prosperity, producing on average more than half of GDP, even in developing countries. They do this by concentrating activity, resources and knowledge to exploit agglomeration effects and economies of scale. These effects are not always present however and can be reduced where cities do not achieve the necessary levels of densification and infrastructure services provision. For example, urbanisation has delivered fewer benefits in Africa and South Asia than in parts of East Asia as a result. To date the productivity benefits and potential economic development opportunities associated with urban environments, have been poorly understood and under-exploited by national governments, municipal authorities and their development partners. This in part reflects the complexity and cross-cutting nature of the challenges involved.

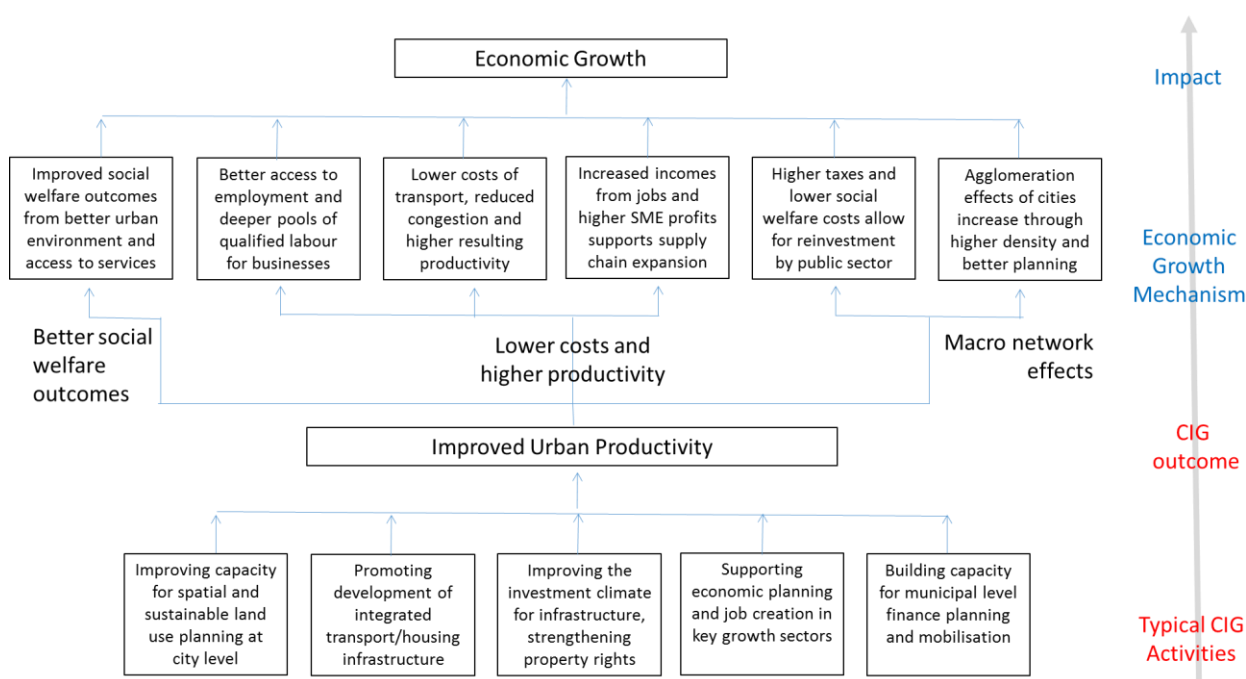


Figure 1: Theory of Change – Improved Urban Productivity

Urban productivity is a complex and multifaceted concept capturing the capacity for well-planned and managed cities to generate economic wealth, create jobs, encourage innovation and reduce poverty. This is particularly important in countries facing rapid urbanisation and large-scale rural-urban migration flows. Rapid urbanisation without proper design and economic planning can lock-in dysfunctional urban form, exclude certain populations from economic participation, create environmental costs (e.g. air quality, waste management), and build long term exposure to risk (e.g. climate impacts, fossil fuel regulation). Cities authorities often have weak institutional capacity to engage on planning, economic development and finance mobilisation when compared to national governments.

Donors support the emergence of cities as attractive, economically productive and resilient places to live and work for a broad range of socio-economic groups. In doing so they aim to ensure that urban form can be an enabler of economic and employment growth, rather than a constraint. These improvements require an integrated approach to policy, planning, investment and economic development. Programmes therefore need to engage across a broad range of activities including improved spatial and sustainable land use planning, strengthening the city-level investment climate (e.g. property rights), promoting better integrated transport and housing policy, building capacity for municipal-level finance mobilisation, and supporting economic development planning and job creation for key sectors.

Focusing programming on urban productivity is strongly aligned with prioritisation of economic development as a key driver to delivering effectively managed cities as a key opportunity for job creation, poverty reduction, social inclusion and addressing gender inequality. However, measuring changes in urban productivity can be

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a challenge, and indicator sets may draw upon a range of sectors, including economic development, access to infrastructure, job creation, costs of infrastructure services and inclusivity.

### From urban productivity outcomes to economic growth

Urban productivity benefits flow differently to different stakeholders, and generate short term economic benefits directly and indirectly, as well as delivering (longer term) transformational effects. The overall evidence for linkages between improved urban productivity and economic growth (as set out in the theory of change) is considered strong. Transport has been chosen as the primary focus of the assessment (due to the significant evidence base available), but similar types of benefits to urban productivity flow from other sectoral improvements (e.g. energy, WASH, digital, housing).

**Improved social welfare outcomes:** Better planned urban environments can have significant social welfare benefits (safety, health, air quality). Improved water, sanitation, energy and housing services can reduce the disease burden both in the home and in the public realm. In terms of transport, modal shift and better provision for non-motorised transport can significantly reduce accidents. Low and middle income countries are most affected and typically. Road traffic accidents are the leading cause of death globally for 15-29 year olds and it is estimated that the economic cost is 1-3% of GDP.<sup>1</sup> For example, Bus Rapid Transport (BRT) systems in Latin America have contributed to a 40% reduction in fatalities and injuries on the streets where they were implemented.<sup>2</sup> Secondly, improved planning and transport can also improve air quality near major roads. High levels of transport related pollutants carry significant health costs for local (often poor and vulnerable) populations with air quality health impacts in South Asia estimated at costing 0.83% of GDP. Finally improved urban form and transport can facilitate access to public infrastructure (health, education) thereby increasing the productivity of labour, particularly for women and vulnerable populations.<sup>3</sup>

**Improved access to employment and deeper more flexible labour pools:** Workers may not be able to take certain jobs due to transport considerations or due to lack of digital connectivity. For example, low-income urban residents in sub-Saharan Africa typically only use public transport for indispensable trips, as it is not affordable for regular use.<sup>4</sup> Better integrated cities can help connect labour with economic demand, allowing better matching of skills and helping to increase household incomes over time. This can also be achieved through the intensification and development of low income housing close to economic growth centres. Companies can expand economic activity where availability of (suitable) labour is a constraint, and benefit from a deeper and more qualified labour pools over time to facilitate economic growth and expansion. Improving access to transport, and integrating low income housing into urban intensification can increase the employment options available for workers.

**Reduced costs:** More efficient provision of services (energy, transport) can reduce prices as well as reduce the overall share of income spent on these services by SMEs and households. Lower costs of energy can allow SMEs to increase their margins or divert economic resources for investment. Where improved access to transport entails increased affordability, users enjoy reduced travel costs, particularly compared with the cost of private vehicle ownership. Transport expenditure is often a substantial share of household budgets. One evidence review finds that households in sub-Saharan Africa devote 8-15% of their total expenditure to transport.<sup>5</sup> Travel costs as a share of income can be even higher in larger or higher-income cities, where residents either choose or need to use public transport more frequently. Transport to and from work can cost 20-25% of income in Delhi, Buenos Aires and Manila, and up to 30% in Nairobi, Tshwane and Dar es Salaam.<sup>6</sup> Improving access to transport by increasing its affordability allows households to switch expenditure from non-productive to productive uses, such as education or domestic enterprise.

**Increased productivity:** Firms and households can increase their productivity from improved access to digital infrastructure, energy and transport services. Digital services (telecommunications, internet) can reduce the

<sup>1</sup> Future of Transport, 2013

<sup>2</sup> Carrigan *et al.*, 2014; Bocarejo *et al.*, 2012; Duduta *et al.*, 2013

<sup>3</sup> Duchène, 2011

<sup>4</sup> Diaz Olvera *et al.*, 2008

<sup>5</sup> Diaz Olvera *et al.*, 2008

<sup>6</sup> Carruthers *et al.*, 2005; Ferrarazzo and Arauz, 2000; Kaltheier, 2002

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need to travel, support remote working options, provide access for higher value added occupations and increase productivity. Higher densification and improved transport infrastructure can reduce journey times maximise economic productivity. Economic losses associated with road congestion (e.g. delays for commercial traffic) can be reduced. The costs of congestion are substantial in many cities. The ADB estimates that increased transport costs and lost working hours may cost up 5% of GDP in many Asian nations.<sup>7</sup> WRI identifies travel time savings as the most significant socio-economic benefits resulting from BRT systems, with the minimisation of waiting and transfer times being a key driver in economic returns.<sup>8</sup> Travel time savings were between 13-52 minutes in cities studied, which commuters can use for more productive activities.

**Increase in incomes and wider economic activity:** New (and improved) jobs (e.g. resulting from better access to transport and digital services), together with the welfare benefits of improved housing, WASH and urban amenities can increase household incomes. This can result in greater levels of short-term private consumption and longer term wealth accumulation and social mobility. The most effective route out of poverty and into sustainable economic growth for the working-age population, is a productive, fairly-paid job.<sup>9</sup> Increased household incomes can feed through into improved education, health and social welfare outcomes, which in turn have longer term economic multiplier effects.<sup>10</sup> Companies benefit from increased household income levels and associated consumption effects, with beneficial impacts supply chain activity as they expand (indirect effects).<sup>11</sup> Higher levels of employment and wages also generate growth impacts in the wider economy (induced effects).<sup>12</sup>

**Agglomeration and scale effects of cities:** Better planning and densification can maximise the agglomeration effects of cities which enable businesses to share fixed costs, efficiently match supply and demand of specialised goods, services and workers. Well planned cities can support knowledge transfer and innovation.<sup>13</sup> Land values can be maximised, and connections between areas of economic activity better supported. Data suggests that productivity is closely correlated with density of economy activity (e.g. jobs per km<sup>2</sup>). There is evidence that the size of the city itself can influence the level of employment productivity and wages, with larger cities generating higher returns, with cities having a 10% larger workforce being able to offer wages that are 0.2-1% higher.<sup>14</sup> These benefits can in turn result in higher tax revenues, lower social welfare costs, creating the capacity to reinvest in public services, further economic development and formalisation of the economy.<sup>15</sup> Scale economies also apply at city level in terms of infrastructure provision and services (waste, energy, healthcare), lowering the cost per connection or user, and supporting universal provision, particularly where resource constraints are an issue.<sup>16</sup>

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<sup>7</sup> <https://www.adb.org/sectors/transport/key-priorities/urban-transport>

<sup>8</sup> WRI, 2013

<sup>9</sup> WEF, 2015

<sup>10</sup> Nallari, 2010

<sup>11</sup> Kehoe *et al.*, 2016

<sup>12</sup> FMO, unknown

<sup>13</sup> Duranton and Puga, 2003; Rode *et al.*, 2014; World Bank, 2013

<sup>14</sup> Rosenthal and Strange, 2004; Melo, Graham, and Noland, 2009; Puga, 2010; Duranton, 2015

<sup>15</sup> Bird, R and Zolt, E, 2003

<sup>16</sup> Wenban-Smith, 2006; Duranton, 2008; Turok & McGranahan, 2013, Satterthwaite and Mitlin, 2014