GOVTECH
GOVERNMENT TECHNOLOGY
AGENCY OF SINGAPORE

FACTSHEET
Pulse of the Economy

As Singapore builds itself into a Smart Nation, we want to enable better sensing of how our city works and optimise the running of smart city services to improve the lives of our people. To achieve this, we are building the common nationwide infrastructure and services to collect data, perform analytics to interpret real-time data as far as possible, and visualise insights to help public agencies make better planning decisions, and enhance their operations.

Pulse of the Economy is an initiative by GovTech's Data Science team, in collaboration with various government economic agencies, to look into the use of high-frequency big data - such as electricity consumption, public transport, online job listings and other urban data sources - to develop new indicators for better economic and urban planning.

Nowcasting the economy

Currently, traditional indicators such as GDP and Employment are used to monitor how well the economy is doing. These traditional indicators take a longer time to gather.

With Pulse of the Economy, we can merge real-time big data sources to develop new economic indicators to help government agencies better monitor the economy and identify opportunities for growth and employment.

For example, the amount of electricity consumed in a particular region in Singapore and number of people alighting at bus stops in the region can provide a timely indicator of how much economic activity is happening there. Government agencies can identify areas of growth and formulate growth strategies. (See Annex A)

Other potential uses

Potentially with Pulse of the Economy, government agencies can use crowd density data to understand how people commute and access key social amenities (e.g. parks, healthcare, places of worship) to improve distribution and accessibility of these amenities. We can also use this data to inform transport modelling to relieve congestion and provide public transport alternatives for a car-lite Singapo

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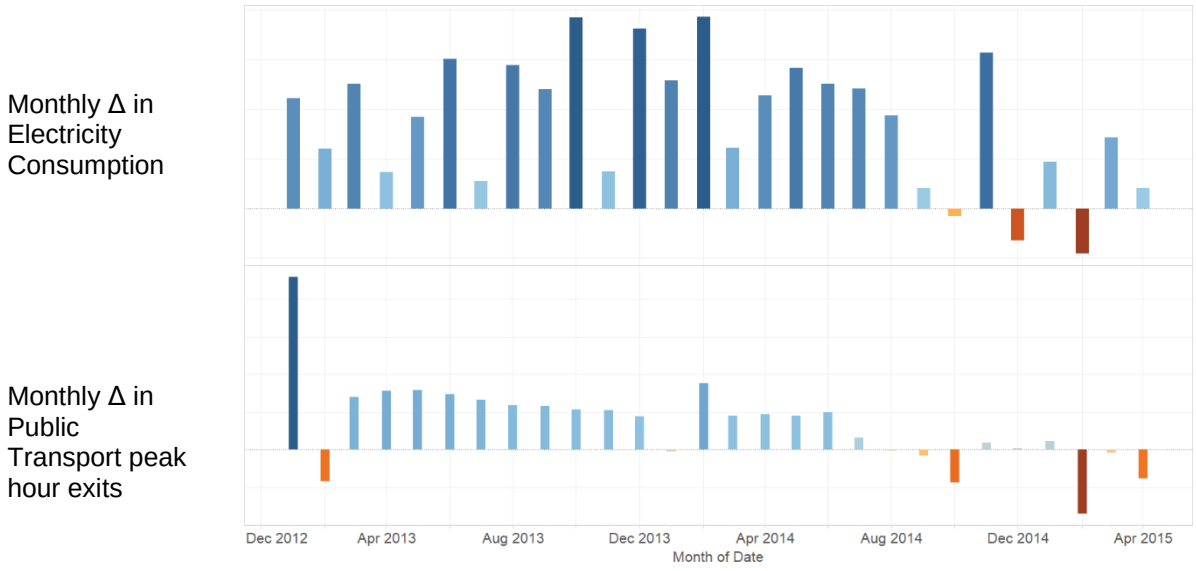
Annex A - Example: Public transport peak hour exits & Electricity consumption



Each of these data sources can tell us about different aspects of economic activity. The combination of data sources can provide a richer picture of the state of the economy, and form early warning signals for intervention.

For example, the charts above comprise data for Paya Lebar Region from Dec 2012 to April 2015. The top chart shows the percentage change in electricity usage over time, while the bottom shows the percentage change in the number of public transport peak hour exits in the region. Notice that there is a decrease in both the consumption of electricity and human traffic. Based on this, we could surmise that there is a drop in business activity in the Paya Lebar region, as such activity typically requires both electrical power and workers. Such signals can be used to discover regions in Singapore with sectors that may potentially require early investigation and intervention.

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