Rapid Real Data in Israel, and an International Comparison

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Abstract

One of the key challenges of producing national statistics in any country is to provide information about real (non-financial) activity in the economy, in as close as possible to real time. Over the last decade, the Central Bureau of Statistics and the Bank of Israel have made a concerted effort to provide rapid real data about the economy. A study comparing Israel with several advanced economies found that the scope and availability of the rapid real data and indicators in Israel is similar to, and often better than, the world's most advanced economies. Nevertheless, in a few areas it was found that the rapid indicators and availability of the data could be improved.

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A. Foreword

One of the key challenges of national statistics in any country is to provide information about real (non-financial) activity in the economy, in as close as possible to real time, particularly to bring economic policy in line with conditions in the economy as quickly as possible. This need becomes acute when attempting to identify turning points in business cycles, especially negative ones, close to their time of occurrence.

Key information about the real activity in any economy forms part of the data in the National Accounts. This information is not produced frequently—it is generally produced quarterly, and with a considerable delay—at least a month and a half after the end of the quarter. Consequently, the average time lag between the National Accounts data and the actual situation is about three months. This is due to the need to collect a broad range of data from a large number of entities that are unable to report frequently, and to complex, prolonged processing of the information, in accordance with international standards applied by the organization that generates the national statistics. In addition to the National Accounts data, there are great deals of other data on certain topics and areas of activity within the economy's real activity, some of which are produced more frequently, such as the Consumer Price Index, which is published monthly.

A direct way of addressing the challenge of the lack of real-time National Accounts data is to generate the actual National Accounts data more frequently—once a month. Very few countries— among them, Canada, Finland and Russia—generate a monthly estimate of economic output. Israel also investigated this possibility through collaboration between the Bank of Israel and the Central Bureau of Statistics (CBS) during the period 2012–13, but it became apparent that it could not be implemented at this stage due to the absence of a minimum range of monthly reports and data from key operators in the economy.

This challenge could also be addressed by producing various data and indicators about real activity in the economy more frequently—once a month, for example—as a way of indicating the state of the economy until the data in the National Accounts are published. Data of this kind are called "rapid data".

The use of such rapid data is accepted all over the world and also in Israel, and it will be discussed at length in this paper. Years ago, many international organizations defined a series of standard indicators for all countries aimed at providing rapid estimates that correspond with key variables in the real activity sectors. For example, in 1996, the International Monetary Fund (IMF) prescribed a new standard, the Special Data Dissemination Standard (SDDS). The IMF also recommended developing Forward Looking Indicators in addition to the rapid data.

The recent global economic crisis once again raised the need to address the challenge of rapid real data. In the first half of 2009, in the shadow of the crisis, the UN organized a conference to discuss rapid real estimates.[1] At this conference, a list of basic indicators in the different sectors of real activity was formulated and the desired frequency of their publication was set.

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[1] Conference website: http://unstats.un.org/unsd/nationalaccount/workshops/2009/ottawa/AC188-2.ASP

In January 2014, the UN Economic Commission for Europe conducted a comprehensive international study to obtain a current picture of Rapid Indicators, Leading Indicators and Confidence Indicators that are used by different countries.

Over the last ten years, Israel, mainly at the Bank of Israel and CBS, has made a concerted effort to close key data gaps in real and financial data in general, and with respect to rapid data in particular.

This paper describes the current state of rapid real data in Israel, emphasizing the improvements that have been made in recent years. A comparison with the existing data in other developed countries will also be presented. The description and comparison relate to three categories of indicators that provide rapid real data: rapid indicators of current activity, leading indicators, and surveys, which are explained and demonstrated in the paper.

B. The different categories of rapid real data and the indicators in Israel

1. Nowcasts: Rapid indicators of current activity

The purpose of rapid indicators of current activity—known as nowcasting—is to provide the best possible indication of real activity as it actually occurs, a sort of initial directional reading.

Sometimes, the rapid data is part of more extensive cumulative data, and sometimes it is indicative of and corresponds with other data that is received later on.

The rapid data may be simple, raw data, such as foreign trade figures which provide a rapid indication of the balance of payments, or data derived from a statistical model in the case of a composite index, such as the Composite State of the Economy Index.

The rapid data are not a substitute for the National Accounts, and generally a broad range of rapid data from all areas of economic activity is examined to gain as reliable a picture as possible.

Sometimes, rapid data which is indicative of the overall level of economic activity is also important in its own right: for example, raw material imports are rapid data for GDP, but the figure is also important in itself as a component of the balance of payments.

Israel uses a large number of simple rapid data.[2] The key composite rapid data used in Israel is the Composite Index.

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[2]   For example: building starts and mortgage data; the Industrial Production Index and the import of fuel; trade and services revenue, retail sales and durable goods imports; the import of commodities in general, and of raw materials imports in particular, services exports (added in 2009), tourist arrivals; VAT receipts and health tax receipts.

2. Leading Indicators

The purpose of Leading Indicators in the real (non-financial) sector is to highlight turning points in economic activity that are expected to occur within several months. A leading indicator is generally a series that, over time, correlates and is consistent with a target variable, mostly real output.

There are two main groups of leading indicators: (1) Simple Leading Indicators, such as the number of job vacancies in the economy, durable-goods orders and the number of building permits, which are widespread in many countries. (2) Composite Leading Indicators (CLIs), in which a statistical model is used to integrate several rapid data to create a single indicator. The predictive power of the different indices varies from one country to another and from one period to another. For example, the predictive power of building permits may be limited because they depend on administrative decisions that do not always coincide with market conditions and the timing of these changes.

During the 1980s, the OECD began to compute Leading Indicators for most of its member countries, including Israel after it joined the organization in 2010. The method used to create this indicator does not reflect a structural economic model but refers mainly to the lead time of simple rapid data. The indicator was formulated to help identify future turning points in business cycles and it is based on monthly series from the real, monetary and financial sectors, all of which are capable of providing early signals of turning points in economic activity.

Israel also uses several Leading Indicators, for example: the number of job vacancies in the labor market, durable goods orders, and the import of inputs for the consumer goods and industrial manufacturing sectors. Regarding Composite Indicators, the Bank of Israel's Information and Statistics Department examined the Leading Indicator that the OECD calculates for Israel, and several adjustments were made in the series that comprise it with the purpose of improving the ability to pinpoint the turning points and the lead.[3] Furthermore, the Markov Switching Model was used to create a composite leading indicator which is based on the existing forward relationship between turning points in the stock market and turning points in the Industrial Production Index.[4]

3. Surveys

In this context, a survey is a poll designed to reflect assessments regarding the state of recent economic activity and to provide a forecast of groups in the population, and which may have macroeconomic repercussions for overall economic activity.

Most of the surveys consist of two parts: the first includes questions relating to assessments about the present and the second relates to the respondents' assessments regarding the future. These polls can therefore be used as the basis for Nowcasting indicators and leading indicators. The most prominent surveys in Israel in the real sector are the Central Bureau of Statistics Business Tendency Survey (which was added in 2010), the Companies Survey (conducted by the Bank of Israel), and the Consumer Confidence Index (compiled by several organizations).

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[3] Gharrah (2012).
[4] Mansura and Schreiber (2012).

The Companies Survey has been issued by the Bank of Israel's Research Department every quarter since 1983 and it examines seven components of real economic activity among different companies: manufacturing, construction, transport and communications, hotels, trade and services.

In principle, this is a qualitative poll that incorporates companies' assessments of present levels of activity and forward-looking information. The survey also includes questions about the companies' constraints with respect to financing, manpower and equipment. The net balance of the survey reflects the companies' levels of optimism or pessimism about economic activity in the economy in the present and in the coming months.

C. Israel compared to selected countries

1. Nowcasts

A comparison of the scope and content of Israel's simple and composite Nowcast indicators (Tables 1 and 2) with those of several major advanced economies—the US, Germany, UK, Canada and Australia—shows that most of the indicators currently used in those countries are available in Israel as well. The differences lie mainly in the sources of the information and methods of calculation. For example, the US publishes, toward the end of every month, a monthly quantitative Construction Spending index, which is obtained from a survey of building contractors on progress made in construction projects over the last month, in monetary terms. In contrast, the Bank of Israel Companies Survey and the Central Bureau of Statistics Business Tendency Survey only provide a qualitative response from contractors regarding the companies' output in the current month (increased/decreased/no change).

Another example of the differences found is that of the financial robustness of the economic units in the different economies. Monthly data on applications filed for bankruptcy by individuals and businesses are readily available in the countries in the comparison group (except for the UK, where the data are quarterly). In contrast, this information is not available in Israel, and financial robustness is examined through other data available to the Banking Supervision Department, such as information about restricted customers and accounts.

Availability of the indicators
We also compared the availability of the nowcast indicators, namely, how close they are to real time: the review shows that the level of availability of data on foreign trade and private consumption is higher in Israel than other parts of the world, but lower than the comparison countries for data on the housing market and the Industrial Production index. There is a one-month difference between Israel and the US in publication of the Industrial Production index (in the US it is published three weeks after the end of the month, and in Israel, about 7 weeks). This is a significant gap, both due to the high correlation of the index to output, and to the fact that the Industrial Production index is a key input in computing composite rapid indicators such as the Composite State of the Economy Index.

Notwithstanding the foregoing, a comparison of the availability of rapid data in Israel with other leading global economies such as Germany, the UK, Canada and Australia, shows that the US is actually a positive exception to the rule, and that Israel compares favorably with the other countries in the comparison group.

Table 1
List of key (simple) Nowcast indicators of real activity in Israel and the world

	Israel	US	Germany	UK	Canada	Australia
Housing market data						
1	Building starts	Housing Starts	Housing Starts	New House Building	Housing Starts	
2	Number of new home transactions	Home Sales (new, existing and pend.)	Home Sales Index	New Home Sales	New Home Sales	Australia New Home sales
3	Execution of construction work in the fielda	Construction Spending	Construction Output	Construction Output		
4	Mortgages granted	MBA Mortgage Applications	Mortgage Index	Mortgage Approvals	Mortgage Approvals	Housing Finance by Purpose
5	Balance of mortgages more than 90 days in arrears	MBA Foreclosure Applications				
Business sector data						
6	Industrial Production Index	Industrial Production Index	Industrial Production Index	Index of Production	Month. Survey of Manuf.	Austr. Ind. Prod. Index
7	Machinery and equipment utilization rate	Capacity Utilization	Capacity Utilization	Capacity Utilization	Capacity Utilization	NAB Capacity Utilization Pct.
8	Business customers restricted, number of business account restricted, number of business checks returned and their financial value	Commercial Bankruptcies	Commercial Bankruptcies	Commercial Bankruptcies	Commercial Bankruptcies	Aust. Com. Bankruptcies
9	Fuel imports	Crude Oil Weekly Stocks	Crude Oil Stocks	Crude oil Production	Crude Oil Production	Crude Oil Production
Households and private consumption						
10	Trade and services revenue; chain store sales, retail sales	Retail Sales	Retail Sales	Retail Sales	Retail Trade	Retail Sales
11	Durable goods imports	.Durables Sales (Ex Transport)	Retail Sales of Durables	Retail Sales	Retail Sales by Type of Commodities	.Retail Trade by Ind
12	Car Sales	Total Vehicle Sales	Car Sales	Car Sales	Retail Sales by Type of Commodities	Sales of New Motor Vehicles
13	Consumer credit card purchases	Consumer Credit	Consumer Credit	Consumer Credit	Consumer Credit	Consumer Credit
14	Consumer confidence surveysb	Personal Income	Personal Income	Personal Income	Disposable Personal Income	Personal Income
15	Private customers restricted, number of personal accounts restricted, number of private checks returned and their financial value	Non Com. Bankruptcies	Non Com. Bankruptcies	Non Com. Bankruptcies	Non Com. Bankruptcies	Non Com. Bankruptcies
Foreign trade data						
16	Trade Balance	Trade Balance	Trade Balance	Balance of Trade	Trade Balance	Trade Balance
17	Raw Materials Imports	Industrial Supplies & Materials Imports	Raw Materials Imports	Raw Materials Imports	Raw Materials Imports	Raw Materials Imports
18	Goods Exports	Goods Exports	Goods Exports	Goods Exports	Goods Exports	Goods Exports
19	Services Exports	Services Exports	Services Exports	Services Exports	Services Exports	Services Exports
20	Tourist Arrivals	Tourist Arrivals	Tourist Arrivals	Tourist Arrivals	Tourist Arrivals	Tourist Arrivals
Public sector data						
21	Monthly estimate of budget performance	Monthly Budget Statement	Government Spending	Government Spending	Government Spending	Australian Gov't Spending
22	Health tax receipts	Indiv. Income and Empl. Taxes		Social Sec. Contr.		
23	VAT receipts	VAT Cash Received		VAT on Production		

Table 2
List of key (composite) Nowcast indicators of real activity in Israel and the world

Israel	US	Germany	UK	Canada	Australia
The Composite State of the Economy Index	The Philadelphia Composite Index of Coincident Indicators, The US Chicago Fed Nat. Activity Index, Empire Manufacturing, The Conference Board Coincident Economic Index, the e-Forecasting Monthly GDP	The Conference Board Coincident Economic Index	The Conference Board Coincident Economic Index	The Conference Board Coincident Economic Index, monthly GDP	The Conference Board Coincident Economic Index
Nowcast for GDP-two versions: Bottom-up and Top-down	Federal Reserve Bank Nowcast for the GDP	The EUROSTAT Flash Indicator for GDP Growth	The EUROSTAT Flash Indicator for GDP growth	The Flash Indicator for GDP Growth	The Flash Indicator for GDP Growth
Nowcast for GDP components	Federal Reserve Bank Nowcast for the GDP Components	The EUROSTAT Flash Indicator for GDP Components Change	The EUROSTAT Flash Indicator for GDP Components Change	The Flash Indicator for GDP Components Growth	The Flash Indicator for GDP Components Growth

Table 3
Availability of simple rapid data—Israel and the US; number of weeks between the end of the month and publication date of the data

	Israel		US	
Housing market data				
1	Building starts	8	3	Housing Starts
2	Number of new home transactions	5	4	Home Sales (new, existing and pend.)
3	Execution of construction work in the fielda	1.5	4	Construction Spending
4	Mortgages granted	2	0.5	MBA Mortgage Applications
5	Balance of mortgages more than 90 days in arrears	5	0.5	MBA Foreclusure Applications
Business sector data				
6	Industrial Production Index	7	3	Industrial Production Index
7	Machinery and equipment utilization rate	1.5	3	Capacity Utilization
8	Business customers restricted, number of business account restricted, number of business checks returned and their financial value	4	4	Commercial Bankruptcies
9	Fuel imports	2	0.5	Crude Oil Weekly Stocks
Households and private consumption				
10	Trade and services revenue; chain store sales, retail sales	3,7	2	Retail Sales
11	Durable goods imports	2	4	Durables Sales (Exc. Transport)
12	Car Sales	2	1	Total Vehicle Sales
13	Consumer credit card purchases	4	5	Consumer Credit
14	Consumer confidence surveysb	1.5	5	Personal Income
15	Private customers restricted, number of personal accounts restricted, number of private checks returned and their financial value	4	4	Non Com. Bankrupcies
Foreign trade data				
16	Trade Balance	2	5	Trade Balance
17	Raw Materials Imports	2	5	Industrial Supplies and Materials Imp.
18	Goods Exports	2	5	Goods Exports
19	Services Exports	7	5	Services Exports
20	Tourist Arrivals	1.5	5	Tourist Arrivals
Public sector data				
21	Monthly estimate of budget performance	2	2	Monthly Budget Statement
22	Health tax receipts	5	Daily	Indiv. Income and Empl. Taxes
23	VAT receipts	5	Daily	VAT Cash Received

2. Leading Indicators for forecasting future economic activity

The international comparison shows that with respect to Leading Indicators, all the countries use essentially the same simple and composite indicators as an indication of the anticipated level of economic activity (Table 4).

Most of the OECD member countries, including Israel, use the leading indicator calculated for their country by the OECD as their Leading Indicator, and other leading indicators are included in this measure. Another composite leading indicator which is widely used around the world, but not in Israel, is The Conference Board Leading Index, which is prepared by a private US entity for major countries around the world.

Table 4
List of simple and composite leading indicators for forecasting economic activity in Israel and the world

	Israel	US	Germany	UK	Canada	Australia
Simple						
1	Job vacancies	Job Openings	Job Vacancies	Job Vacancies		ANZ Job Vacancies
2	Vehicle orders	Durable Goods Orders Non-Vehicle	Car Registrations	Car Registrations	Car Registrations	Vehicle Sales
3	Durable-goods orders	Durable Goods Orders	Factory Orders	New Orders	New Orders	New Orders
3	Building Permits	Building Permits	Building Permits	Building Permits	Building Permits	Building Approvals
5	Business inventories	Wholesale and Business Inventories	IFO Current Assessment	Change in Inventories	Change in Inventories	Change in Inventories
6	Capital goods imports	Cap. Goods Imports	Cap. Goods Imports	Cap. Goods Imports	.Cap. Goods Imp	.Cap. Goods Imp
7	Credit to the business sector	Loans to Private Sector	Loans to Private Sector	Loans to Private Sector	Loans to Private Sector	Loans to Private Sector
Composite						
8	OECD Leading Indicator, iOECD and iMSM	OECD Leading indicator	OECD Leading indicator	OECD Leading indicator	OECD Leading Indicator	OECD Leading Indicator and the Westpac Leading Index
9	Index based on Google searches	The Conference Board Leading Economic Index; The e-Forecasting Leading Economic Indicator	The Conference Board Leading Economic Index	The Conference Board Leading Economic Index	The Conference Board Leading Economic Index	The Conference Board Leading Economic Index
10	Bank of Israel Research Department staff forecast	Bloomberg Leading Index and the Philadelphia Fed Leading Index			Statistics Canada Composite Index (discontinued)	GDP Growth Rate Forecast

3. Surveys

In Israel as well as in all the comparison countries, several surveys are conducted concurrently by different entities (Table 5): the Business Tendency Survey, the Companies Survey, and consumer confidence surveys.

In the comparison countries, the large number of surveys conducted by private research entities is notable. In Israel, the Central Bureau of Statistics and Bank of Israel prepare business tendency surveys. Consumer confidence surveys are conducted concurrently by the Central Bureau of Statistics and Bank Hapoalim.

Table 5
List of surveys (business tendency and consumer confidence)
used in Israel and the world

Israel	US	Germany	UK	Canada	Australia
Business tendency surveys					
1. Business Tendency Survey by the Central Bureau of Statistics, Bank of Israel's Climate Index, Bank of Israel's Companies Survey, Purchasing Managers Index	Dallas Fed Manf. Activity, Chicago Fed Nat Activity Index, ISM Composite, Manufacturing and Services, US Manufacturing and US Services PMI, Chicago Purchasing Manager and Bloomberg Economic Expectations, NFIB Small Business Optimism, Chicago PMI, US Redbook Index	ZEW Survey Expectations, IFO Business Confidence Index, ZEW Survey Current Situation, BME Germany Composite and Manfct. & Services PMI, Expectations and Current Assessment, GfK Consumer Confidence, Germany Composite, Services, Construction, Retail and Services PMI	ZEW Survey Expectations and ZEW Survey Current Situation, CBI Business Optimism index, UK Manufacturing and Services PMI, CBI Small Business Optimism Index	The Richard Ivey School of Business Canada Business Confidence Index (The Ivey PMI Index), Manufacturing PMI	NAB Business Confidence Index, Australia Man. PMI, Australia Serv. PMI, NAB Small Business Optimism Index
Consumer confidence indicies					
2. Consumer Confidence Indicies compiled by Globes, the Central Bureau of Statistics, and Bank Hapoalim	Univ. of Michigan Consumer Confidence Index, US IBD/ TIPP Economic Personal Optimism Index	German GfK Consumer Confidence	UK GfK Consumer Confidence	Canada Consumer Confidence	Westpac Consumer Confidence Index