



International Seminar on Early Warning and Business Cycle Indicators

**14 to 16 December 2009
Scheveningen, The Netherlands**

Use of early warning and business cycle indicators in analytical frameworks

**Thierno Balde
Ralf Becker
Ivo Havinga**

Use of Early Warning and Business Cycle Indicators in Analytical Frameworks

**Thierno Balde
Ralf Becker
Ivo Havinga**

Summary

The present paper is a first step in an effort to harmonize analytical indicators and improve the availability of underlying country data for the production of these indicators. The paper compares a number of major international publications from the International Labour Organization (ILO), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the United Nations, the World Bank and the World Trade Organization (WTO) that draw conclusions from existing high-frequency and annual data sets and compares the high frequency indicators used in their analyses with those recommended for data collection in the proposed data template for high-frequency indicators. In addition, the paper identifies commonly used analytical indicators that can be derived from the high frequency indicators in the data template. It also compares lists, by way of example, of analytical indicators used in national publications to establish commonalities and differences in the use of the indicators at the individual country level and the regional or world level. The paper also indicates options for grouping the analytical indicators according to common themes.

Further harmonization of the analytical indicators (and underlying data) between countries should lead to greater availability and comparability of such derived indicators at the regional and world-wide level. A commonly agreed set of analytical indicators for country analysis would not only allow more detailed analysis at the aggregated world level, but also facilitate comparison of individual country analysis.

Further work to assess common use of analytical indicators at country level and further discussion of groupings of analytical indicators will be undertaken.

Contents

1.	Introduction.....	2
2.	Indicators used in macroeconomic analysis.....	2
2.1	General observations.....	2
2.2	Composite indicators.....	3
2.3	List of indicators observed.....	4
3.	Grouping of analytical indicators.....	5
Annex 1	Indicators used in major / selected analytical publications.....	8
Annex 2	Proposed Data template for high-frequency indicators.....	23
Annex 3	Additional composite indicators.....	25
Annex 4	Publications considered.....	27

1. Introduction

This document summarizes a review undertaken to identify indicators related to the proposed data template for high-frequency indicators and derived analytical indicators that are used in analytical publications on economic and financial development.

For this purpose, a number of publications analyzing economic and financial development and trends have been reviewed and the indicators used in their analysis have been listed and compared to the high frequency indicators shown in the proposed data template. In addition, information on specific breakdowns of the indicators used has been collected. This would for instance indicate if high frequency indicators currently available in the template would be used for analytical purposes only as a world total or possibly broken down by region, by type of economy around the globe, by country, by type of contributing sources (such as industries), by population characteristics (such as gender or age group) or by others or a combination thereof.

Given the main purpose of the data template as a set of high frequency indicators for monitoring economic and financial trends and business cycles at international and country level, this comparative review includes publications from international organizations (i.e. from BIS, OECD, ILO, IMF, United Nations, World Bank and WTO) and selected countries. The original proposed data template, as well as a list of sources consulted for this review, is shown in Annex 2 and 4 of this document.

Information from this review can be used to identify areas where the current data template provides more information than what is currently used, essentially giving economists/analysts additional tools, as well as to identify high frequency indicators that should be reviewed for possible modification (or precision) to satisfy the current needs of economists/analysts and the business community as a whole.

This document also discusses briefly ways to group analytical indicators according to their application in thematic reviews. The groupings listed and indicators assigned have not been widely discussed yet, but this approach should be considered for an extension of the work on high-frequency indicators to promote a consistent and comprehensive use of the indicators defined (and recommended for data collection) in the proposed data template for high-frequency indicators.

2. Analytical indicators used in macroeconomic analysis

2.1 General Observations

Not surprisingly, indicators tend to be more detailed, i.e. showing more of the breakdowns mentioned above, for publications with a narrower geographic focus. For instance, the reviewed international publications may use and publish real GDP growth at world and regional aggregates as an analytical indicator, while national publications show in addition Real GDP by industry and Real GDP by income and expenditure.

Among the international publications, the international agencies with a global remit may use and show indicators aggregated at the regional level (e.g. by geographic region or by type of economy), while international agencies with a more selective remit use a more detailed breakdown, such as for smaller regions or individual countries. For example, many indicators in OECD publications are compared for the US, Japan and the Euro area, a distinction that is not made in the international publications of the IMF, United Nations or World Bank at that detail.

The aggregation by region (no matter how defined) has however no impact on the indicators in the data template. All information will still be collected at the country level and subsequently aggregated. On the other hand, more detailed indicators that are being used at national or multinational level could be also used for comparison at the international level. However, this would require the ability of all countries to produce this type of more detailed information and the ability to produce them within the given timeframes that the data template stipulates for high-frequency indicators.

What could be observed is also that tables and graphs produced for individual countries (whether produced by the countries themselves or others that analyze them) tend to show a larger number of indicators, while many of these indicators are not being compiled for international or multinational aggregates. This could be interpreted as the existence of two sets of relevant indicators: (a) a comprehensive set that is produced for each country and (b) a smaller set that is produced for regional or world aggregations. The summary table shown in Annex 1 relates to the latter scenario, being drawn from publications that analyze trends largely from world or regional aggregated data, rather than from a comparison of individual countries. The set of indicators used in the first scenario is closer to the proposed data template for high-frequency indicators, but their availability will vary for most, especially smaller countries. This larger set of indicators is applied to tables and graphs showing time series for individual countries, but even in cases where the information exists for multiple countries, it is not used for direct comparative purposes and analysis. However, it is worth reviewing this comprehensive set of analytical indicators available at country level in order to complement and inform the present analysis based on analytical indicators at international and regional level.

2.2 Composite indicators

While most analytical indicators encountered in the publications reflect the use of a single high frequency indicator of the proposed data template, additional derived indicators (such as in the form of ratios) have been identified in the review of the publications. Some examples for simple derived indicators are:

a) The inventory over sales (or inventory over shipment) ratio

This ratio can be helpful in assessing the deviations from the trend in inventories levels to meet liquidity requirements.

b) The ratio of the value of housing to household disposable income

This ratio can be helpful in assessing the sustainability of financing of residential property by the households. For instance, the average trend of this ratio is close to 1 (e.g. 1.1 for U.S.). Just before the crisis, the ratio was around 1.4 due to sharp increases in house prices.

c) Household leverage, i.e. the ratio of the household total liabilities to the household disposable income

This ratio can be helpful in recognizing the size and extent of a housing bubble.

d) Ratio of household net worth to disposable income

This ratio helps to understand households' willingness to take on incremental debt.

e) Growth in equity prices relative to GDP and domestic profits

Ideally, equity prices should rise at approximately the same rate as the GDP. In fact, growth from stock prices must come from growth in the economy or at a higher rate of return to capital investments.

In the United States for example, for most of the post-WWII era, the S&P stock price index rose at roughly the same rate as GDP and corporate profits. However, after the mid-1990s, stock prices - even after accounting for the cyclical drop in profits in 2000 - soared relative to GDP and corporate profits. Part of the rise was based on the perception that the United States had entered a period of higher economic growth driven by technology.

Other more complex examples are:

f) Some new employment indicators used by the ILO

These indicators are represented also through simple ratios. However, they require also indicators outside of the proposed data template for their compilation, such as demographic data. These indicators are also aimed at measuring progress for the MDG Goal 1.

g) The Financial Conditions Index shown in the OECD Economic Outlook

This index measures the impact of monetary policy on the economy by weighting together changes in the exchange rate and short-term interest rates according to their relative effects on economic activity.

Annex 3 provides a more detailed description of these indicators.

2.3 List of indicators observed

The table in Annex 1 shows the indicators observed in the publications considered grouped according to the indicators and indicator sets shown in the data template.

Additional indicators observed in the publications, but not included in the proposed data template, are shown as "OTHER" under the appropriate heading in the table.

The columns in the table indicate which organization/publication uses what form of breakdown and what measurement is being used for the data presentation. In case of multiple options for measurement, the appropriate reference is given by the numbers adjacent to each data source.

In addition to indicators used by international/multinational organizations, the table lists, by way of example, indicators used in national analytical publications. This indicates that the set of indicators used at the country level is much broader than those currently used for world-wide aggregations. While the lack of coverage, i.e. availability for a large enough set of countries, is typically the reason for their absence from aggregated analysis, further discussion of the reasons needs to be conducted.

The final goal should be a commonly accepted set of analytical indicators that allow for a consistent and comparable approach to economic analysis. The availability of this comparable set of analytical indicators at country level at agreed periodicity would significantly enrich the analysis of the regional and global aggregates, because of its supplementary and more detailed information content.

3. Grouping of analytical indicators

The proposed data template for high-frequency indicators lists indicators in 12 sets, using the nature of the indicators and their primary statistical sources. For analytical purposes, it is sometimes useful to consider several indicators for the monitoring of a specific, often policy-related, subject. The selection of such indicators will be driven by their specific application, possibly in combination with other indicators, and may be quite different from the groupings in the proposed data template. Such selection of indicators could be considered as analytical groupings. In these analytical groupings, individual indicators of the template can have multiple applications and therefore appear in multiple categories.

The following provides a proposal for a set of analytical groupings and the indicators that would be associated with these groupings.

This is initially based on groupings that are used by the OECD for the presentation and analysis of related indicators, but should be further reviewed for their general applicability. Additional groupings with a relevant selection of indicators contained in the proposed data template can be developed.

In the publications reviewed, not all of these indicators have been used or grouped according to the listing below. However, thematic discussions on the topics listed use the indicators shown here to a large degree. Further discussion of a standardized set for each topical grouping may improve consistency of analytical results.

The current use of these indicators can be referenced in the table shown in Annex 1, while the current availability of these indicators is discussed in detail in the separate

document *Global Assessment on the Availability, Periodicity, Timeliness and Dissemination of High Frequency Indicators*.

	Demand and output
1.1	Quarterly national accounts: Flash GDP estimate
1.2	Quarterly national accounts: GDP full release
1.3	Quarterly sector accounts
2.1	Production index for industry, by major division (mining, manufacturing, electricity, water, etc.)
2.2	Production index for construction
2.3	Turnover index for retail trade by major division
2.4	Turnover index for industry by major division
2.5	Turnover index for other services by major division (excluding financial services and non-commercial services)
2.6	New orders index for industry by major ISIC division (for those that work on order)
2.7	New orders index for construction (building permits or housing starts)
2.8	Commodity production (as relevant at country level data on commodity productions and other indicators of economic activity)
5.1	Exports and imports (of goods and services)
11.2	New house sales
12.3	Composite Business Cycle Indicators
	Wages, costs, unemployment and inflation
4.1	Unemployment
4.2	Unemployment rate
4.3	Employment total and by economic activity
4.4	Hourly wage rate
4.5	Hours of work
3.1	Consumer price index (CPI)
	External trade and payments
5.1	Exports and imports (of goods and services)
5.2	International investment position (IIP), specify balances and components
5.3	Official reserve assets
5.4	External debt (by sector, maturity and foreign currency)
3.3	Import price index
3.4	Export price index
	Financial developments
6.1	Central Bank net foreign assets
6.2	Central Bank domestic lending
6.3	Central Bank reserve money
6.4	Depository corporations net foreign assets
6.5	Depository corporations domestic lending
6.6	Depository corporations broad money liabilities
6.7	Other financial corporations balance sheet, assets and liabilities by sector.
6.8	Financial corporate profits
6.9	Financial corporate debt
6.10	Others as relevant: nonperforming loans of depository corporations, capital adequacy ratios, other financial stability indicators, etc.
10.4	Stock market indicators
10.5	Others as relevant : spreads between lending and deposit rates, highest-lowest interbank rate; etc.
	Fiscal balances and public indebtedness
5.2	International investment position (IIP), specify balances and components
5.3	Official reserve assets

5.4	External debt (by sector, maturity and foreign currency)
7.1	Revenue
7.2	Expense
7.3	Net operating balance (= Revenue – Expense)
7.4	Net acquisition of non-financial assets
7.5	Expenditure
7.6	Net lending/net borrowing (= Revenue - Expenditure)
7.7	Gross debt
	Non-financial sector
1.2	Quarterly national accounts: GDP full release
2.1	Production index for industry, by major division (mining, manufacturing, electricity, water, etc.)
2.2	Production index for construction
2.3	Turnover index for retail trade by major division
2.4	Turnover index for industry by major division
2.5	Turnover index for other services by major division (excluding financial services and non-commercial services)
2.6	New orders index for industry by major ISIC division (for those that work on order)
2.7	New orders index for construction (building permits or housing starts)
2.8	Commodity production (as relevant at country level data on commodity productions and other indicators of economic activity)
3.1	Consumer price index
3.2	Producer price index
4.3	Employment total and by economic activity
4.4	Hourly wage rate
4.5	Hours of work
9.1	Non-financial corporate profits
9.2	Non-financial corporate debt
9.3	Other as relevant
12.2	Business confidence
12.3	Composite Business Cycle Indicators
	Household sector
3.1	Consumer price index
8.1	Household disposable income
8.2	Household saving
8.3	Household debt
8.4	Other as relevant: disposable income, debt service and principal payments, household debt, etc.
12.1	Consumer confidence
1.2.1	Quarterly national accounts: GDP full release, by expenditure
	Market development: interest rates and exchanges rates
10.1	Interest rates, as relevant short and long term money and bond market rates
10.2	Exchange rates, as relevant spot and forward markets
10.3	Nominal and real effective exchange rate
10.5	Others as relevant : spreads between lending and deposit rates, highest-lowest interbank rate; etc.
	Other

Annex 1 – Indicators used in major / selected analytical publications

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown				
					By type of economy	By geographical region	By country	By Gender	
Set 1 National accounts									
1.2	Q	Gross domestic product, volume	Real GDP growth	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	IMF(1,2,3,4), WB(1,2) OECD(1,2,3,4), WTO(1,2), UN(1,2) U.S (1,2,3,4,5), Japan (1,2,3,4,5)	IMF	IMF, OECD	IMF, WB, OECD, WTO, UN	
	Q	Household consumption expenditure, government consumption expenditure, gross fixed capital formation, exports of goods and services, imports of goods and services	Real GDP by expenditure	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	Country level only: U.S. (1,2,3,5), Japan (1,2,3,5),				

High Frequency Indicators

		Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown			
						By type of economy	By geographical region	By country	By Gender
	Gross domestic products by industry	Q		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	Country level only: U.S. (1,2,3,5),				
	Gross domestic product by income	Q		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	Country level only: U.S. (1,2,3,5)				
Set 2 Production and turnover									
2.1	Industrial production by major division	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	IMF (1,2) OECD (1,2,3,4)	IMF	IMF		IMF, OECD

High Frequency Indicators

		Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown			
						By type of economy	By geographical region	By country	By Gender
2.2	Production for construction by major division	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	OECD (1,2,3)				
2.3	Retail trade by major division	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth 6. inventories/sales ratio	OECD (1,2,3)				
2.4	Turnover for industry by major division	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth 6. inventories/sales ratio					

High Frequency Indicators

			Breakdown						
		Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	By type of economy	By geographical region	By country	By Gender
2.5	Turnover for other services by major division (excluding financial services and non-commercial services)	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth 6. inventories/sales ratio					
2.6	New orders for industry by major ISIC division (for those that work on order)	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index					
2.7	New orders for construction (building permits or housing starts)	Q		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	None (country level only)				

High Frequency Indicators

	Indicator	Periodicity	Measurement	Used by which organization or country (indicating measurement type)	By type of economy	Breakdown			
						By geographical region	By country	By Gender	
2.8	Commodity production (as relevant at country level data on commodity productions and other indicators of economic activity) Agricultural products Minerals New car registrations/sales New commercial vehicle registrations/sales Tourist arrivals	M							
Set 3: Price Indicators									
3.1	Consumer prices	M	Consumer prices	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth	IMF (1,2,4), WB (1,2), WTO (1,2)	IMF			

High Frequency Indicators

		Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	By type of economy	Breakdown		
							By geographical region	By country	By Gender
3.2	Producer prices	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth 6. USD/barrel (per barrel)	IMF (1,2,3), WB (1,2), OECD(1,2,3,4), WTO (1,2)	IMF	IMF, WB, OECD, WTO		
3.3	Import prices	M		1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth 6. USD/barrel (per barrel)					

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown				
					By type of economy	By geographical region	By country	By Gender	
3.4	M	Export prices	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. index 5. contributions to growth 6. USD/barrel (per barrel)						
Set 4: Labour market indicators									
4.1	M	Unemployment							
4.2	M	Unemployment	Unemployment rate	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. rate	ILO (1,2,3,4), IMF (1,2,4), OECD (1,2,4) U.S. (1,2,3,4) Japan (1,2,3,4)	IMF	IMF		ILO

High Frequency Indicators

	Indicator	Periodicity	Measurement	Used by which organization or country (indicating measurement type)	Breakdown			
					By type of economy	By geographical region	By country	By Gender
4.3	Employment total and by economic activity	M	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. rate 5 labour force participation rate 6. employment to population ratio 7. proportion of employed below poverty line 8. proportion of vulnerable employment 9. output per employee 10. growth rate of labour productivity	ILO(1,2,3,4,5,6,7,8,9,10), IMF (1,2,4), OECD (1,2,4) U.S. (1,2,4), Japan (1,2,4)	IMF	IMF		ILO
4.4	Hourly wage	M	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. rate	U.S (1,2,3), Japan (1,2,3)				

High Frequency Indicators

	Indicator	Periodicity	Measurement	Used by which organization or country (indicating measurement type)	Breakdown				
					By type of economy	By geographical region	By country	By Gender	
4.5	Hours of work	M	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. rate	U.S. (1,3),					
Set 5: External sector indicators									
5.1	Goods: Exports and Goods: Imports	M	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	WB (1,2), IMF (1,2), WTO (1,2), OECD (1,2,3)	IMF	IMF	IMF		
5.2	International investment position (IIP) net, IIP assets, IIP liabilities		1. percent of GDP	Country level only: U.S.					
5.3	Gross official reserve assets								
5.4	External debt total, external debt short term		1. percent of GDP						
Set 6: Financial sector indicators									
	Current Account		Current Account positions	IMF, U.S., Japan	IMF	IMF			

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown			
					By type of economy	By geographical region	By country	By Gender
6.1		Central Bank net foreign assets	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	Country level only: U.S. (1,2)				
6.2		Central Bank domestic lending	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP					
6.3		Central Bank reserve money	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	IMF (1,2)	IMF	IMF	IMF	
6.4		Depository corporations net foreign assets	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	Country level only: U.S. (1,2), Japan (1,2)				

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown			
					By type of economy	By geographical region	By country	By Gender
6.5		Depository corporations domestic lending	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	IMF(1,2), OECD (1,2), Japan (1,2)				
		Net percentage of banks tightening credit (separate for Loans to large and medium sized firms vs. loans to small firms)		OECD		OECD		
6.6		Depository corporations broad money liabilities	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP					
6.7		Other financial corporations balance sheet, assets and liabilities by sector.	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP					

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	By type of economy	Breakdown		
						By geographical region	By country	By Gender
6.8		Financial corporate profits	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP					
6.9		Financial corporate debt	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP 5. percent of financial corporate profit					
6.1		Others as relevant: nonperforming loans of depository corporations, capital adequacy ratios, other financial stability indicators, etc.						
Set 7: General government sector indicators								
7.1		Revenue	1. percent of GDP					
7.2		Expense	1. percent of GDP					
7.3		Net operating balance (= Revenue – Expense)	1. percent of GDP					
7.4		Net acquisition of non-financial assets	1. percent of GDP					
7.5		Expenditure	1. percent of GDP					

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown				
					By type of economy	By geographical region	By country	By Gender	
7.6		Net lending/net borrowing (= Revenue - Expenditure)	1. percent of GDP						
7.7		Gross debt	1. percent of GDP						
Set 8: Household sector indicators									
8.1		Household disposable income	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	Country level only: U.S.					
8.2		Household saving	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	U.S.					
8.3		Household debt	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP	U.S.					

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	Breakdown			
					By type of economy	By geographical region	By country	By Gender
8.4		Other as relevant: disposable income, debt service and principal payments, household debt, etc.		U.S.				
Set 9: Non-financial corporations sector indicators								
9.1		Non-financial corporate profits	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP					
9.2		Non-financial corporate debt	1. growth rate on previous period 2. growth rate on previous period, annualized 3. growth rate on corresponding period of previous year 4. percent of GDP					
9.3		Other as relevant.						
Set 10: Financial market indicators								
10.1		Interest rates, as relevant short and long term money and bond market rates	Interest rates	WB, WTO				
10.2		Exchange rates, as relevant spot and forward markets	Policy rates Exchange rates	OECD IMF	IMF	OECD IMF		

High Frequency Indicators

	Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	By type of economy	Breakdown		
						By geographical region	By country	By Gender
10.3		Nominal and real effective exchange rate						
10.4		Stock market indicators	Equity markets		IMF, U.S., Japan, Australia	IMF	IMF	
			Share prices (financial vs. non-financial sector)	index (fixed base)	OECD U.S., Japan, Australia		OECD	
		Bonds Market	Corporate bond spreads	(percentage)percentage for high yield/BBB/AAA bonds)	OECD, U.S., Japan, Australia		OECD	
10.5		Others as relevant : spreads between lending and deposit rates, highest-lowest interbank rate; etc.	LIBOR, Spreads, Swaps		IMF, OECD	IMF	IMF	
		OTHER						
			Financial conditions (FCI)	Derived indicator (see description)	OECD		OECD	
			Corporate bond spreads	(percentage)percentage for high yield/BBB/AAA bonds)	OECD		OECD	
			Money market stress	(spread between 3-month LIBOR and 3-month overnight); percentage for Euro and USD	OECD		OECD	

High Frequency Indicators

		Periodicity	Indicator	Measurement	Used by which organization or country (indicating measurement type)	By type of economy	Breakdown		
							By geographical region	By country	By Gender
Set 11: Real estate market indicators									
11.1	Residential property price index		Housing prices	Index (federal agency index; composite of large areas)	OECD, U.S.				
11.2	New house sales		Sales of new houses (one family); new houses for sale (one family, at end of period)	annualized counts	OECD, U.S.				
11.3	Existing house sales				U.S.				
Set 12: Economic sentiment									
12.1	Consumer confidence		Consumer confidence index	annualized, shown in units of standard deviation	IMF, OECD	IMF	IMF, OECD		
12.2	Business confidence		Business confidence index	annualized, shown in units of standard deviation	IMF, OECD, Japan	IMF	IMF, OECD		
12.3	Composite Business Cycle Indicators								
12.3.1	Leading Indicator								
12.3.2	Coincident Indicator								
12.3.3	Lagging Indicator								
	Purchasing managers index				IMF	IMF	IMF		

Annex 2 – Proposed Data template for high-frequency indicators

High Frequency Indicators

Set 1 National accounts	
1.1	Quarterly national accounts: Flash GDP estimate
1.2	Quarterly national accounts: GDP full release
	by expenditure
	by production
	by income
1.3	Quarterly sector accounts
Set 2 Production and turnover	
2.1	Production index for industry, by major division (mining, manufacturing, electricity, water, etc.)
2.2	Production index for construction
2.3	Turnover index for retail trade by major division
2.4	Turnover index for industry by major division
2.5	Turnover index for other services by major division (excluding financial services and non-commercial services)
2.6	New orders index for industry by major ISIC division (for those that work on order)
2.7	New orders index for construction (building permits or housing starts)
2.8	Commodity production (as relevant at country level data on commodity productions and other indicators of economic activity)
	Agricultural products
	Minerals
	New car registrations/sales
	New commercial vehicle registrations/sales
	Tourist arrivals
Set 3: Price Indicators	
3.1	Consumer price index
3.2	Producer price index
3.3	Import price index
3.4	Export price index
Set 4: Labour market indicators	
4.1	Unemployment
4.2	Unemployment rate
4.3	Employment total and by economic activity
4.4	Hourly wage rate
4.5	Hours of work
Set 5: External sector indicators	
5.1	Exports and imports (of goods and services)
5.2	International investment position (IIP), specify balances and components
5.3	Official reserve assets
5.4	External debt (by sector, maturity and foreign currency)

Set 6: Financial sector indicators	
6.1	Central Bank net foreign assets
6.2	Central Bank domestic lending
6.3	Central Bank reserve money
6.4	Depository corporations net foreign assets
6.5	Depository corporations domestic lending
6.6	Depository corporations broad money liabilities
6.7	Other financial corporations balance sheet, assets and liabilities by sector.
6.8	Financial corporate profits
6.9	Financial corporate debt
6.10	Others as relevant: nonperforming loans of depository corporations, capital adequacy ratios, other financial stability indicators, etc.
Set 7: General government sector indicators	
7.1	Revenue
7.2	Expense
7.3	Net operating balance (= Revenue – Expense)
7.4	Net acquisition of non-financial assets
7.5	Expenditure
7.6	Net lending/net borrowing (= Revenue - Expenditure)
7.7	Gross debt
Set 8: Household sector indicators	
8.1	Household disposable income
8.2	Household saving
8.3	Household debt
8.4	Other as relevant: disposable income, debt service and principal payments, household debt, etc.
Set 9: Non-financial corporations sector indicators	
9.1	Non-financial corporate profits
9.2	Non-financial corporate debt
9.3	Other as relevant.
Set 10: Financial market indicators	
10.1	Interest rates, as relevant short and long term money and bond market rates
10.2	Exchange rates, as relevant spot and forward markets
10.3	Nominal and real effective exchange rate
10.4	Stock market indicators
10.5	Others as relevant : spreads between lending and deposit rates, highest-lowest interbank rate; etc.
Set 11: Real estate market indicators	
11.1	Residential property price index
11.2	New house sales
11.3	Existing house sales
Set 12: Economic sentiment	
12.1	Consumer confidence
12.2	Business confidence
12.3	Composite Business Cycle Indicators
12.3.1	Leading Indicator
12.3.2	Coincident Indicator
12.3.3	Lagging Indicator

Annex 3 – Additional Composite indicators

1. Financial Conditions Indices

Financial conditions indices (FCIs) are broadly an extension of monetary condition indices which are computed to measure the impact of monetary policy on the economy by weighting together changes in the exchange rate and short-term interest rates according to their relative effects on economic activity. FCIs are augmented with a broader set of variables, most usually equity prices and sometimes house prices, although there is no clear theoretical basis for which variables should be included and the choice is often empirically guided. Corporate bonds yields, or their spread with more risk-free government bond yields, are also included to better reflect a market measure of the cost of finance.

The OECD financial conditions indicator summarizes the effects of a wide range of financial variables and asset prices on economic activity, including corporate bond spreads, bank lending standards, housing and financial wealth, policy interest rates, government bond yields and exchange rates. One of main advantages of the indicator is that it provides a measure of the net effect of these often opposing influences on overall financial conditions. Changes in the FCI can be used for example, to compare the impact of financial conditions on future GDP growth across countries. Also, estimated relationships between the FCI and the economic activity can be used to illustrate the effect of different assumptions concerning financial conditions.

A typical FCI for a given country includes among others, real short-term interest rates, real long-term interest rates, the real effective exchange rate, bond spreads, stock market capitalization and credit standards. The weight of each variable in the FCI is based on the estimated relative effect of a one-unit change in that variable on the GDP during a specific reference period. In practice, the computation of FCIs for OECD countries uses the United States FCI as a benchmark. The weights are derived from econometric analysis, and in some cases supplemented with coefficients calibrated from large-scale macroeconomic model simulations. For example, regarding the policy rates and interest rates on long-term government bonds, the model suggests that activity in the United States is more interest rate sensitive than in other main OECD countries/regions, while differences among the latter are smaller. The model assumes also that the first-year effects on activity of a change in short-term policy rates are similar for the United States and the Euro area.

The FCIs are computed and published by OECD for each of its member countries.

2. Derived employment indicators

A new target and related indicators have been agreed upon in 2008 for MDG1 (eradication of poverty and hunger). The target is to achieve full and productive employment and decent work for all, including women and young people. The four indicators are specifically and directly related to employment issues and they are designed to: i) provide relevant and robust measures of progress towards the new target

of MDGs; ii) be clear and straightforward to interpret and provide a basis for international comparison; iii) be relevant and link to national-level country monitoring systems; iv) be based on ILO international standards, recommendations and best practice in labour statistics; and v) be constructed from well-established data sources which enable consistent measurement over time.

The four indicators are defined as follows:

- Growth rate of labour productivity (GDP per person employed): it is measured as the annual change in Gross Domestic Product (GDP) per person employed;
- Employment-to-population ratio: it is the proportion of a country's working-age population that is employed. The indicator is computed by dividing the total number of employed person above a certain age (typically 15 years and over) by the population of the same age group;
- Working poor rate: it is the proportion of employed people living below the poverty line which is defined as the minimum level of income deemed necessary to achieve an adequate standard of living in a given country;
- Vulnerable employment rate: it is the proportion of own-account and contributing family workers in total employment. This indicator is a measure of what are deemed to be the more vulnerable statuses of employment, namely own-account workers and contributing family workers.

These indicators are computed and published by ILO for each country with a breakdown by gender.

Annex 4 – Publications considered

OECD

OECD Economic Outlook:

http://www.oecd.org/document/18/0,3343,en_2649_34109_20347538_1_1_1_37443,00.html

IMF

World Economic Outlook <http://www.imf.org/external/pubs/ft/weo/2009/02/index.htm>

Global Financial Stability Report

<http://www.imf.org/external/pubs/ft/gfsr/2009/02/index.htm>

Global economic policies and prospects:

<http://www.imf.org/external/np/g20/pdf/031909a.pdf>

World Bank

Global Economic Prospect:

<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/EXTGDF/EXTGDF2009/0,,menuPK:5924239~pagePK:64168427~piPK:64168435~theSitePK:5924232,00.html>

DESA

World Economic Situation and Prospects: <http://www.un.org/esa/policy/wess/wesp.html>

BIS

Annual report <http://www.bis.org/publ/arpdf/ar2009e.htm>

ILO

Global employment trend: <http://www.ilo.org/empelm/lang--en/index.htm>

WTO

World Trade report: http://www.wto.org/english/res_e/publications_e/wtr09_e.htm

Statistics Canada:

<http://unstats.un.org/unsd/nationalaccount/workshops/2009/ottawa/AC188-S317.PDF>

http://www.cabe.ca/jmv1/index.php?option=com_docman&task=doc_details&gid=592&Itemid=38

Reserve Bank of Australia

http://www.rba.gov.au/ChartPack/graphical_summary.pdf

Federal Reserve Bank of New York

http://www.newyorkfed.org/research/national_economy/nationalindicators.html

Bureau of Economic Analysis

NIPA data, selections referenced in J.S. Landefeld, S.M Villones, *GDP and beyond: Measuring Economic Progress and Sustainability*, Nov. 2009.