Chapter III: Macroeconomic Aggregates and Economic Structure

Macroeconomic aggregates are related to economic structure which influences entrepreneurship. For this study, aggregates of new firm registration and liquidation, inflation both as GDP Deflator and CPI based, unemployment, Spending on R&D, lending rate and GDP are carefully chosen. These aggregates are collected from various secondary sources but majority of the data is collected from WB site.
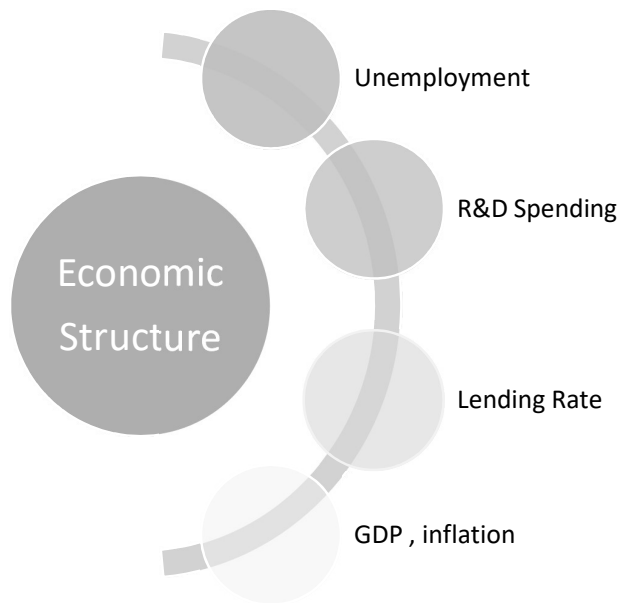

Figure 3: Macroeconomic aggregates

The indicator which would measure the activity of entrepreneurs is number birth of new firms.

New Firm registration and liquidation:

For this study, only non-government firms are studied to understand effects of macroeconomic factors on firm formation. Even for private form, it is the firms registered under companies Act of India and limited by shares are used for studying entrepreneurship. Other small firms are not considered for the study as the data and structure of such firms could not be verified.

This data for new firm registration and liquidation is taken from Annual Report of Ministry of Corporate Affairs (MCA) on performance of Companies Act. This data of registration and liquidation was available at Table 2.3 and Table 2.10 respectively of the annual reports. This data is in number of units registered and ceased per year. (data source: Ministry of Corporate Affairs, periodicity: annual)

Inflation

Inflation data is available in two main formats: Inflation based on Consumer Price Index (CPI) and as GDP deflator. Inflation is taken as GDP deflator because the GDP deflator (implicit price deflator) is a measure of the level of prices of all new, domestically produced, final goods and services in an economy. This measure is taken for this study because GDP Deflator reflects prices of all goods and services produced within the country, whereas Consumer Price Index (CPI) reflects the prices of a representative basket of goods and services purchased by the consumers. Furthermore, CPI uses a fixed basket of goods and services whereas the GDP deflator compared the price of currently produced goods

relative to price of goods in the base year. For a control variable for influence of inflation on firm formation, prices of all goods and services on within the country is a proper measure as compared to CPI. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency. Data for both measures were collected for the study. (method of aggregation: median and periodicity annual) (data source: http://data.worldbank.org)

Unemployment

The standard definition of unemployed persons is those individuals without work, seeking work in a recent past period, and currently available for work. Persons who did not look for work but have some arrangements for a future job are counted as unemployed. It is the labour force or the economically active portion of the population that serves as the base for this indicator, not the total population.

The data on unemployment is very critical to this study and is important to discuss the measure, relevance and limitations and exceptions of unemployment data used. As discussed earlier, unemployment measure in India is based on 4 yearly estimation and various sources have measured it differently. For consistencies and its comparability, World Bank data source is used internationally as parameters defined by International Labour Organization(ILO).

Unemployment and total employment are the broadest indicators of economic activity as reflected by the labour market. The International Labour Organization(ILO) defines the unemployed as members of the economically active population who are without work but available for and seeking work, including people who have lost their jobs or who have voluntarily left work. Some unemployment is unavoidable. At any time some workers are temporarily

unemployed - between jobs as employers look for the right workers and workers search for better jobs. Such unemployment, often called frictional unemployment, results from the normal operation of labour markets. Changes in unemployment over time may reflect changes in the demand for and supply of labour; they may also reflect changes in reporting practices.

Paradoxically, low unemployment rates can disguise substantial poverty in a country, while high unemployment rates can occur in countries with a high level of economic development and low rates of poverty. In countries without unemployment or welfare benefits people eke out a living in vulnerable employment. In countries with well-developed safety nets workers can afford to wait for suitable or desirable jobs. But high and sustained unemployment indicates serious inefficiencies in resource allocation. This paradox is critical for this study as it influences the firm creation.

As per World Bank data source it is mentioned that the unemployment rates are the ILO estimates from the ILO's Key Indicators of the Labour Market database. These are harmonized estimates calculated using strict data selection criteria and enhanced methods. This also ensures comparability across countries and over time.

In these estimates, women are considered to be employed when they are working part-time or in temporary jobs, despite the instability of these jobs or their active search for more secure employment. This is because women suffer more from discrimination and from structural, social, and cultural barriers that impede them from seeking work.

There may be persons not currently in the labour market who want to work but do not actively "seek" work because they view job opportunities as limited, or because they have restricted labour mobility, or face discrimination, or structural, social or cultural barriers. The exclusion of people who want to work but are not seeking work (often called the "hidden unemployed" or "discouraged workers") is a criterion that will affect the count of both women and men although women may have a higher probability of being excluded from the count of unemployed because they suffer more from social barriers overall that impede them from meeting this criterion. There are situations where the conventional means of seeking work are of limited relevance - for example, in developing economies where the informal economy is rampant and where the labour force is largely self-employed. In such cases, the standard definition of unemployment would greatly undercount the untapped human resources of a country and would give a picture of the labour market that was more positive than reality would warrant.

The unemployment rates understudy here are the ILO estimates from the ILO's Key Indicators of the Labour Market database. The ILO estimates are harmonized to account for inconsistencies resulting from data source, definition, reference period, coverage, age group, and collection methodologies. The adjusted rates are based on household labour force sample surveys and includes both nationally reported and imputed data. It is advised by the source that caution should be used when comparing the ILO estimates against other national estimates such as employment data.

Source :(data source: http://data.worldbank.org). International Labour Organization, Key Indicators of the Labour Market database. aggregation method: weighted average. periodicity: annual

Lending interest rate

Lending rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to creditworthiness of borrowers and objectives of financing. This relates to availability and constraints of financing in an economy which influence the firms.

Both banking and financial systems enhance growth, the main factor in poverty reduction. At low levels of economic development commercial banks tend to dominate the financial system, while at higher levels domestic stock markets tend to become more active and efficient. The size and mobility of international capital flows make it increasingly important to monitor the strength of financial systems. Robust financial systems can increase economic activity and welfare, but instability can disrupt financial activity and impose widespread costs on the economy.

Countries use a variety of reporting formats, sample designs, interest compounding formulas, averaging methods, and data presentations for indices and other data series on interest rates. The IMF's Monetary and Financial Statistics Manual does not provide guidelines beyond the general recommendation that such data should reflect market prices and effective (rather than nominal) interest rates and should be representative of the financial assets and markets to be covered.

Source: International Monetary Fund, International Financial Statistics and data files. Data Source : (http://data.worldbank.org)

Research and development expenditure (% of GDP)

Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development. This is a key driver of providing technology and innovation to augment creation of new firms.

Expenditure on research and development (R&D) is a key indicator of government and private sector efforts to obtain competitive advantage in science and technology. Estimates of the resources allocated to R&D are affected by national characteristics such as the periodicity and coverage of national R&D surveys across institutional sectors and industries; and the use of different sampling and estimation methods. R&D typically involves a few large performers, hence R&D surveys use various techniques to maintain up-to-date registers of known performers, while attempting to identify new or occasional performers. R&D expenditures include expenditures from all sources for R&D performed within a country, including capital expenditures and current costs (wages and associated costs of researchers, technicians, and other supporting staff and other current costs, including non-capital purchases of materials, supplies, and minor equipment to support R&D such as utilities, reference materials, subscriptions to libraries and scientific societies, and materials for laboratories). The gross domestic expenditure on R&D (GERD) indicator is used for international comparisons. This consists of the total expenditure (current and capital) on R&D by all resident companies, research institutes, university and

government laboratories, etc. It excludes R&D expenditures financed by domestic firms but performed abroad. GERD is here expressed as a share of GDP.

Research and development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, and the use of this knowledge to devise new applications. R&D covers three main activities: (1) Basic research - Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view (2) Applied research - Applied research is also original investigation undertaken in order to acquire new knowledge; it is, however, directed primarily towards a specific practical aim or objective. (3) Experimental development - Experimental development is systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

The OECD's Frascati Manual defines research and experimental development as "creative work undertaken on a systemic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications." R&D covers basic research, applied research, and experimental development. Data on researchers and technicians in R&D are measured in both full-time equivalent and headcount but are shown in full-time equivalent only. The data are obtained through statistical surveys which are regularly conducted at national level covering R & D performing entities in the private and public sectors.

GDP (current US$)

GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.

Gross domestic product (GDP), though widely tracked, may not always be the most relevant summary of aggregated economic performance for all economies, especially when production occurs at the expense of consuming capital stock. While GDP estimates based on the production approach are generally more reliable than estimates compiled from the income or expenditure side, different countries use different definitions, methods, and reporting standards. World Bank staff review the quality of national accounts data and sometimes make adjustments to improve consistency with international guidelines. Nevertheless, significant discrepancies remain between international standards and actual practice. Many statistical offices, especially those in developing countries, face severe limitations in the resources, time, training, and budgets required to produce

reliable and comprehensive series of national accounts statistics. Among the difficulties faced by compilers of national accounts is the extent of unreported economic activity in the informal or secondary economy. In developing countries a large share of agricultural output is either not exchanged (because it is consumed within the household) or not exchanged for money.

Gross domestic product (GDP) represents the sum of value added by all its producers. Value added is the value of the gross output of producers less the value of intermediate goods and services consumed in production, before accounting for consumption of fixed capital in production. The United Nations System of National Accounts calls for value added to be valued at either basic prices (excluding net taxes on products) or producer prices (including net taxes on products paid by producers but excluding sales or value added taxes). Both valuations exclude transport charges that are invoiced separately by producers. Total GDP is measured at purchaser prices. Value added by industry is normally measured at basic prices.

Source: World Bank national accounts data, and OECD National Accounts data files.

aggregation method: gap-filled total, periodicity: annual, data source: (http://data.worldbank.org)

This chapter restates the purpose and method of this research. The data collected on macroeconomic factors is to be analysed using statistical methods. To understand the influence, bivariate correlations measures is considered appropriate. New firm formation is considered as a dependent variable.

Independent variable are other factors of economic structure which influence firm creation, i.e. the dependent variable. These are: Unemployment (measure of labour force), Research and Development expenditure (% of GDP) (measure of technology factor), Lending interest rate (%) (measure of availability of finance) , inflation as GDP deflator (measure of price instability) and GDP (measure of general wealth in the country). The bivariate correlation matrix as a part of descriptive statistics is generated to further analyse and study each of the research questions. The results along with discussions of statistical analysis are presented in the following chapter.