Chapter 1: Background, Issues, and Objectives

1.1 Introduction

Economic globalization has compelled many countries to open borders and pursue liberal trade and investment policies to stay competitive. The expansions of trade boundaries are paving the way for new agreements for trade and investment between nations. International trade development and harmonization of technologies adoption have further made geographical boundaries irrelevant for trade and investment movement between the countries. In Sachs and Warner (1995) assessment, in the last decade of the 20th century, the world economy witnessed a significant harmonization of institutions and integration of economies across the countries. The international capital market started getting liberalized and gradually transformed into an efficient global capital market. The historically prevailing comparatively low-interest rates in the capital-rich (developed) countries encourage moveable investment funds to diversify into new territories for higher returns, leading to a high return to capital investment in developing and emerging economies. The proponents of capital efficiency also promote capital movement, which postulates that capital may not fetch the highest return available if it is immobile, i.e., not allowed to get invested in the geography having a high rate of return. Economic reforms (trade liberalization, price rationalization, budget restructuring, privatization, deregulation, etc.) are continuous in developing countries to integrate it with the world economy to attract global capital. Integration of economies worldwide would be a beneficial proposition for both capital surplus and deficient capital economies. Globally mobile money will tap the investment opportunities available across the globe to generate a high return leading to higher global economic growth in the host economy and high return for the capital-exporting country.

The theory of diminishing return of capital supports capital flow from high-income economies to low-income economies. In contrast, Lucas (1990), in his empirical study, observed a reverse trend, i.e., the high volume of capital flows from the South (developed economies) to the North (developing economies). This was a landmark finding of its time about the direction of capital flow as it was in sharp contrast to the widely perceived belief about the direction of the flow of capital.

The critical assumption was that capital flows should be steady and should not be detrimental to the stability of the host country's financial institutions. A robust financial system that should absorb the inflows of foreign capital is a critical consideration. Whether coming from public or private sources, the sources of foreign capital exhibit a distinct characteristic. They have different implications for determining their impact on the growth of the host economy. A cursory analysis of the sources of capital flows worldwide over the last two decades suggests that private flows are more generous. Private capital flows volumes have surpassed that of public capital flows. Developing countries primarily receiving capital aid are being replaced by commercial capital flows motivated by business interest and returns on capital.

International capital inflows can play an essential role in growth by supplementing the domestic savings of the host countries. Foreign capitals increase domestic savings to meet unfulfilled investment capital requirements. However, foreign inflows can also be detrimental to the growth of developing economies as it exposes them to disruptions and distortions in the form of high volatilities. The volatility of capital flows sometimes acts as a growth dampener by putting unnecessary strain on the host country's financial system. Motivations for international

capital movement are the pursuit of a high rate of return. Still, sometimes the financial markets' actual behavior appears irrational and cannot be supported by sound economic factors. This unpredictability of capital movement leads to instability or unreliable international capital flows.

A historical study of trends in capital movement across the world points that during the time frame of 1997 to 2001, the capital inflows to emerging and developing economies moderated but regained momentum from 2002 onwards. The rate of growth of capital inflows to developing economies was increasing with increasing rates. Many countries embraced favorable policies to attract foreign capital in this period which may explain the gained momentum of inflows in the developing economies. Developing economies were progressively doing away with many obstacles to capital account by allowing for disinvestment of public sector enterprises (privatization). They are also making substantial changes in the foreign investor shareholding ceiling restriction while opening up many more sectors for foreign investment, which were reserved for the domestic investors or government only etc. Foreign capitals were not merely attracted by the measures taken by the host country (Pull factor). Push factor may also come into play. Capital may be pushed into the country if the rates of return on capital between the host and investor economies are significant. Often, capital inflows into a country are not merely based on economic merits. It also gets into a market due to other factors such as the strategic interest of the investor countries, political factors, etc.

International money also follows herd or trend investment behavior, i.e., foreign investors start investing in a country through herd mentality and leave the country when the trend is reversed.

This behavior leads to a sudden capital flight, leaving a vacuum in the financial markets, particularly portfolio capital. The sudden and excessively high inflow of capital in a short time can be devastating for the host countries and put many challenges in management. It may put upward pressure on the rate of exchange for the domestic currency vis-à-vis foreign currency and necessitates intervention by the central bank in the currency market. Appreciation of domestic currency hampers export competitiveness at the same time also makes imports economical for the domestic consumers. It may also lead to a speculative boom in local assets like real estate and equity market prices, provided portfolio capital flows move in tandem with FDI. For example, during the time of the financial crisis in 1997, many south East-Asian countries experienced a boom-and-bust cycle in their real goods markets and financial markets. Before the crisis hit, these economies were widely admired as some of the most successful economies due to rapid economic growth achieved due to foreign capital inflows. Many other Asian and Latin American countries' experiences suggest that a sudden spurt in capital inflows causes more damage than benefits. The premature outflow of capital forced many countries to move away from fixed exchange rate regimes and adopt floating exchange rate regimes. Examples were Mexico in 1994, five East Asian countries in 1997, and Russia in 1998.

Foreign capital inflow for India is not a new concept altogether. India has a history of receiving foreign capital in many different forms such as add or assistance, grant to the public or private organization assistance, etc., since the 1950s, and investment since the 1960s. The tectonic policy change (widely known as liberalization policy introduced through the budget document of

1991-92) of 1991-92 is considered a watershed year. Much of India-focused research on foreign capital liberalization in India clearly distinguish year prior and post 1991 in their analysis. Post-liberalization capital inflows in the last two decades have increased substantially. Still, at the same time, the composition of capital has changed significantly, with a lower share of official and debt creating inflows to private and other non-debt-creating inflows in total inflow (Rakesh Mohan, 2008). The cherry on the cake is India's good ratings by international rating agencies that send a sound signal about the economy's health to the outside world. Country ratings given by rating agencies (such as Fitch, S&P, etc.) significantly influence the decision of investors to invest in any country. These changing dynamics of capital flows also expose the economy to the pros and cons of capital flows and necessitates focused research to minimize instability. A comprehensive understanding of the determinants of international capital flow and volatility is essential to comprehend the negative impact on the economy. It has even attracted considerable attention in the literature. However, this is very dynamic and changes rapidly with evolving global and domestic financial and policy settings.

Therefore, it is advisable to study the causal effects on economic growth generally over the long term rather than the short time. It may happen so that we may either overlook or not capture impact entirely in the short run. Under given settings, the present study explores the effects of foreign inflows on economic growth and other major macroeconomic indicators in India from 2000 to 2019. We deliberately want to exclude the East Asian crisis period and not capture the initial period of liberalization of the Indian economy. This study's hypothesis is formulated based on the review of many developing countries' experiences about capital

inflow and growth, discussed in detail in the subsequent section. After 1993, when India started working actively towards capital account liberalization, capital inflows continuously increased year on year. Domestic financial institutions' capabilities to effectively handle capital inflows have substantially improved. Hence, we want to understand its impact on growth and the conduct of macroeconomic and monetary policies.

1.2 Theoretical debate: role of capital inflows

In principle, foreign capital is beneficial for a developing economy if aggregate investment demand exceeds domestic savings. Investment and savings are two critical variables in the debate of economic growth. Capital accumulation drives output growth. Therefore, to understand the phenomenon of capital inflows theoretically, we first analyze the saving-investment-capital accumulation theories. These are essential basic economic variables whose determinants and dynamics affect the rate of economic growth. Moreover, the role of foreign capital in developing countries is inter-alia to bridge the saving-investment gap. The classical theory of growth by Adam Smith postulates that the investment rate is proportional to saving.

In contrast, the abilities to save and invest are constrained by income. Further, Smith’s theory assumes capital accumulation as a fundamental economic determinant of growth. With an increase in capital accumulations, the marginal efficiency of capital decreases. Ricardian theory suggests that capital accumulation depends on savings and profits, which are over and above consumption.

In the absence of any specifically designed model for economic policy on growth, one can look into either the neoclassical model or the endogenous growth model or a

combination of both that is compatible with the context under consideration. The neoclassical growth model pioneered by Solow (1956) and Swan (1956) has an underlying assumption of convergence of growth rates. The growth rate is the result of three factors of production labor, capital, and technology. The model predicts an inverse relationship between GDP per capita and returns on capital for developed countries. This implies that developed economies with higher per capita GDP, near-zero labors growth (low population growth rate), and limited technological innovation (follows technologically advanced practices) would experience lower growth than developing economies. The Law of diminishing return applies to the realized return from the capital for the developed economies. The neoclassical theory of growth postulates that the output depends on capital accumulation. FDI augments investment by supplying additional capital to the developing economies and enhances output per capita because of the level effect (low base), whereas the output growth rate remains unaffected. Technological progress will drive economic growth. Developing economies also have high population growth ensure a regular supply of labor proportional to the capital.

Unlike the neoclassical model, the new growth theory considered growth rate an endogenous parameter. Therefore, it is also called the endogenous growth theory. It follows the assumption of increasing returns to scale for capital - the 'innovation gap'- between developed and developing countries supports the theory of differences in growth rate. Technological innovation corners a lot of importance, explaining the differential economic growth rate between the economies. Finally, it argues in favor of the opening of capital accounts in a globalized world, which could be a free movement of capital, to enhance the growth rates of developing

countries. Capital inflows can meet the shortfall in domestic investment requirements when domestic savings are low. Foreign capital also brings new ideas along with capital. This helps bridge the ‘idea gap’ between economies as the flow of ideas is followed by capital from the investor country. The availability of surplus labor and productive demand requirements for foreign exchange are other significant preconditions. The growing popularity of new growth theories enhances the acceptance of the role of foreign capital in supporting growth rate influencers. It recognizes the effects of positive externalities of capital accumulation on growth. Lee, 1997 & Bailliu, 2000 studies found that growth attributed to capital inflows may be because of the many other factors that piggyback capital, such as new technology, managerial skill sets, the introduction of a new product. Simultaneously, the recipient economy also realizes other positive externalities such as high financial market efficiency and improvement in resource allocation.

Many analogies explain what drives cross-border capital flows. Still, the most prominent among them is the inverse relation between availability and marginal productivity of capital, i.e., higher productivity of capital in capital-scarce countries than in abundance. With this postulate, one may infer that capital will flow from a destination with plenty of capital to a destination deprived of capital, conditioned on the country's appetite to absorb it. A shortfall in domestic saving may not be a constrained investment given the free of capital across boundaries. Marginal productivity differential of capital would act as a stabilizer to even out any domestic shortfall. In steep contrast with these findings, the seminal result by Feldstein and Horika, 1980, states the high correlation between domestic saving and investment. His analysis

does not find a significant role of capital mobility in enhancing domestic investment. Lucas, 1990 & Sarno and Taylor, 1999, further corroborated his assertion using standard estimation of Cobb-Douglas production functions. They found a glaring gap (58 times) in the marginal productivity of capital in India and the United States in favor of the former. Even after this glaring gap in the marginal productivity of capital, India could not attract enough foreign capital from the United States, taking advantage of existing productivity differentials. Imperfection in the capital markets may act as a deterrent and undermine the country's capabilities to realize the potential of productivity differentials in attracting foreign capital. The absence of other supporting factors such as the presence of quality of physical infrastructure, quality skilled workforce undermines the investment productivities and act as a dampener in attracting incremental investment. Domestic growth supportive factors are essential for attracting foreign capital and realizing its growth-inducing effects (Lucas, 1990 & Lothian, 2006). Emerging economies have realized the importance of domestic growth. Supportive factors like the absence of a supportive environment are reflected in the lopsided pattern of capital inflows. These arguments are reasonably evident for 12 emerging economies, accounting for four-fifths of total global private flows. Given the theoretical background and analytical findings from different studies globally in this research, we understand capital inflows' implications in current Indian economic settings.

1.3. Perceived benefits of capital flows

We are living in a financially globalized world where cross-border capital flows are a reality. In this new world economy, irrespective of an economy's openness, it will be virtually impossible to control

capital flows in either direction for anything more than a brief period only. Globalization, financial integration, and modern-day advanced information technology have enabled smooth capital movement across the boundaries. It is a widely accepted view that capital is essential for growth irrespective of its origin. It has been argued that capital flows such as FDI also bring in advanced technology, skill formation, and sometimes access to a new market. Romer (1993) discussed the principle of "idea gaps" between countries. Foreign investment could fill these gaps through a transfer of technology and the latest development in business expertise. These transfers may not be limited only to the particular company to which it is transferred; instead, they have spillover effects on the other enterprises operating in the economy. Hence it may boost overall productivity in the host country by adopting new technology and business practices by many other enterprises (Rappaport, 2000). It could lead to more capital flows by enhancing the host country's investment climate. Therefore, it is argued that there is a two-way causal relationship between capital inflows and growth.

The realized benefit of capital inflows by a host country also depends on their domestic macroeconomic settings. For example, international capital flows may hurt the real exchange rate in economies under floating exchange rates. Capital inflows in the emerging economies are increasingly being used to finance current account deficits. Appreciation in the exchange rate could hurt the foreign trade competitiveness of the economy. Therefore, a reversal in capital inflows will also deteriorate the current account balance position and further change the real exchange rate. However, for an economy that is open to foreign trade, any artificial restriction to control the movement of capital either in or

out will not be helpful in the long run. Capital may sneak into the country through other disguised means, which will be difficult for policymakers to regulate or monitor.

The standard macro trade model postulates that the difference in interest rate in emerging market economies viz.-a-viz. Developed economies influence the rate of capital flow. Interest rate differential augments an economy's ability to attract international capital by encouraging investors to invest in the market, which offers a higher return. However, at the same time, the generally high level of real interest rate in the capital recipient country will be detrimental to the internal demand for investment, consequently hampering economic growth. Simultaneously, Short-term and speculative capital flows have made it more difficult for governments to manage their most important macroeconomic and monetary policy. Rapid movements have contributed to the economic and financial crises in many countries. Under certain circumstances, capital controls are justified as part of the policy toolkit to manage capital flows. Sometimes capital controls can be used to avoid adverse effects on the economy and domestic financial institutions. Emerging economies are not merely concerned about the inflows of capital but are equally worried by outflows, especially so in the time of crisis

International capital flows to India started gaining momentum post-economic reforms of 1991. Magnitude, the composition of capital, has also undergone a significant change. A surge in capital flows accelerate economic growth by covering up for the shortfall in domestic savings but at the same time may pose challenges to monetary policy management. Therefore, it becomes imperative to adopt appropriate policy measures to minimize the

undesirable implication for the economy, more specifically to economic policy management.

1.3.1Capital control measure and its implications for India

Free capital flows can benefit countries in a couple of different ways. One is when they add to the domestic resources for investment in the country concerned. It also helps in developing financial markets with greater variability liquidity. Many emerging economies, particularly in Asia, exhibit current account surpluses, so obviously, the capital flows from elsewhere are not adding to their investment resources. Therefore, it is debatable whether the greater availability of capital flows has aided these countries. In India, where we have had current account deficits, more significant capital flows add to an investible resource. Simultaneously, when these capital flows are excessive, they affect credit markets and greater volatility in the capital market. A volatile flow causes difficulties in macroeconomic management. It presents a very mixed picture, and one cannot say with certainty that the significant increase in global capital flows has indeed helped the emerging market economy all the time.

Experiences of many countries suggest that capital control measures are widely used tools to regulate capital inflow for various reasons. Some important among them best describing the Indian policy context are listed below.

a. Protecting infant industries or industries of strategic interest - foreign investment in some sectors is not allowed. The government of India regulates investment in these strategically identified sectors, and there is a prescribed ownership share limit (cap) by the foreign investors;
b. Increase the effectiveness of monetary policy or management of monetary policies– capital inflows are regulated by the central

bank to a limit best serves the country's interest. The decision to limit exposure to foreign capital inflows is governed by the consideration of many associated risks such as transfer, sovereign, etc.;

c. Avoid sterilization costs– many a time, inflows of foreign capital make it inevitable for the central bank to resort to sterilization which has a cost implication too;
d. Volatile capital - limit adverse effects of volatile capital flows;
e. The readiness of the domestic financial system – the weak domestic financial system is not receptive to large capital flows. Foreign flows put a lot of strain on the financial system, which may not be able to handle it smoothly;
f. Prioritization of capital- encourage or prioritize non-debt, creating longer-maturity funds over short-term debts or volatile funds.

Capital controls may limit the allocation of resources to the different sectors of the economy, adversely affecting the economy's overall productivity. Some economic sectors may have a specific advantage and attract more foreign capital, while others crave. Foreign capital may introduce an unwanted systemic wedge in substitutability between domestic and foreign funds. A control on the outward movement of foreign assets may put unwanted stress on capital availability in the economy and depress domestic interest rates, which may have adverse implications on household savings. The administrative costs incurred on capital controls add extra charges, making it costly and sometimes even pricier than domestic funds. At the same time, the accessibility of foreign capital is also tricky, especially for small firms. Countries do not have a sophisticated trained financial architect to efficiently manage foreign funds and resort to capital control as a soft policy option. Financial sector reforms prove beneficial in the long run,

but many emerging countries find it challenging to implement them and avoid normal circumstances. The subsisting gaps in international financial architecture make capital control and resolve capital account crises a costly proposition.

Earlier, the IMF was not favoring any country practicing capital controls; instead, they discouraged countries from placing any capital control measures, but the Asian and South east Asian financial crisis of 1997 has dramatically changed their perception. IMF also started advocating limited restrain (limited capital control measures) for emerging economies. The reason for the IMF to be complacent about foreign capital was their perception and belief about private sector capital markets' intelligence. The private sector usually makes the right decision on deciding the quantum and composition of foreign capital they raise. The financial crisis busted this myth, and accordingly, the IMF started advocating improvements in ongoing market disciplines while promoting private capital flows (Goldstein, 1995). At the same time, they recommend further liberalization of capital account and argue that large capital inflows are followed by rapid growth (World Economic Outlook-1997). Alternatively, IMF suggests to developing countries to manage foreign capital volatilities through greater exchange rate flexibilities. Rather than opting for capital controls.

In the recent past, many countries have undergone a progressive transformation. They realized that rules provide breathing space to implement many fundamental reforms (IMF, 2001). They recognized the importance of certain preconditions to be put in place on sequential liberalization. IMF acknowledges that market participants often may not appropriately assess the risks involved in investment in emerging markets. This inability leads to

sudden changes in their decision to enter into and exit from emerging market economies (IMF, 1998). Therefore, in weak financial systems, one should maintain partial restriction on private flows, especially during opening up. Allowing private capital inflows for emerging economies should be gradual while simultaneously strengthening the domestic financial system. Empirical studies exploring the relationship between capital account liberalization and growth does not provide an encouraging result, i.e., the former may not support later. It is suggested that the productivity gain due to technological spillovers and financial market integration might be offset by ensuring financial crises, which result in a considerable loss in output in the short run. Financial problems related to capital flows volatilities were evident for countries during the 1990s, which increased capital account liberalization quickly. At the same time, there is much evidence supporting the view that countries with more robust financial institutional systems reap an excellent benefit from capital inflows. It further helps that adequate financial regulation and supervision must be a prerequisite for open capital accounts. Domestic financial agencies should be encouraged to minimize their risk exposure to prevent looming crises that may lead to loss of output (Blomsrtom et al. 1992). It is cautioned that a country should not opt for capital control as a permanent solution. It cannot substitute the need for reforms and an excuse for undertaking measures to strengthen the domestic financial system for a long time. The ability to control foreign capital to contain volatility and avoid negative repercussions on growth is mixed. There is evidence of diverse experiences for the countries. A particular measure may not work for others.

In contrast, Russia's controls proved less useful because a priori did not accompany it with adequate structural reforms (Penalver, 2004). The above arguments support a gradual approach to the opening of capital accounts for emerging market economies. It also underlines the importance of certain preconditions to be must in place for effective liberalization. They are creating a robust financial system that encourages foreign capital flows. Therefore, managing it is essential to reap maximum benefits from capital account liberalization.

1.4 Capital Inflows into India

A study of global capital flows to developing economies over the 1990s shows an asymmetric distribution across geographies, i.e., the bulk of flows were concentrated in selected countries. The prevailing policy environment predominantly influences capital flows to India. India does not have a very long history of foreign capital inflows; hence, recognizing this constraint about foreign capital availability and its role in achieving perceived economic growth rate target our plans before 2000 deliberately considered its capital at the modest levels. The primary recourse to attract foreign capital was to perform import substitution. Hence, foreign capital was allowed in those sectors (Mazumdar, 2005). Until 1980 export-oriented sectors were not priorities for foreign capital inflows but later on post-1990s, focus on export became an essential element in the overall growth strategy. The composition of inflows also became a necessary consideration until 1980 commercial debt constituted the majority of foreign capital replaced in favor of non-debt flows in the1990s. Policy-driven capital flows have increased by many folds in recent years as the government is opening new sectors and increasing allowed investment limits for foreign investment to a higher level.

Opening an economy for foreign investors through policies and strengthening domestic financial institutions leads to a continuous surge in inflows. A study of foreign capital inflows and outflows pattern shows that the new foreign inflows in India continuously increase with a mere exception in 2008-09, which is primarily due to external factors. The global financial crisis of 2008 was behind the international FPI retreat from less secure markets- developing countries to a safer destination – developed countries. A quick scan of data shows that FDI inflows are more stable and smoother than FPI flows (table 1). Net FPI shows a very high volatilities year on year, whereas the FDI chart shows steadier and stable trends over the years.

India has become an attractive destination for international capital post-1991. Net capital flows start increasing with increasing rate year on year. If we look at the historical volume of flows, it was merely on average $ 4 billion in 1980 and grew to $ 9 billion per year during 1993-2000, increasing more than double. Then, the year-on-year rise in capital inflows into India enters another trajectory altogether. The annual rate of growth of capital inflows increases with increasing speeds. The capital inflow volume is rising, but the capital compositions are also transforming over time. Debt-creating capital is being replaced with non-debt capital creating flows such as FDI and FPI, reducing unexpected interest burden on the economy. FPI inflows gained momentum after a decade but have become important now. Gross FPI inflows into the country were $74 billion in 2019-20.

Table 1: Net Capital flows into India (Yearly) US $ million

Year	Net Foreign Direct Investment	Net Portfolio Investment
2000-01	**3272**	**2590**
2001-02	**4734**	**1952**

2002-03	**3217**	**944**
2003-04	**2388**	**11356**
2004-05	**3713**	**9287**
2005-06	**3034**	**12494**
2006-07	**7693**	**7060**
2007-08	**15893**	**27433**
2008-09	**22372**	**-14030**
2009-10	**17966**	**32396**
2010-11	**11834**	**30293**
2011-12	**22061**	**17170**
2012-13	**19819**	**26891**
2013-14	**21564**	**4822**
2014-15	**31251**	**42205**
2015-16	**36021**	**-4130**
2016-17	**35612**	**7612**
2017-18	**30286**	**22115**
2018-19	**30712**	**-618**
2019-20	**43013**	**1403**

Source: Hand Book of Statistics on Indian Economy, Reserve Bank of India (RBI)

1.4.1 Trends in FDI and FPI flows to India

Direct investment or debts were the only forms of capital flows at the beginning of this century. Later on, many other conditions such as portfolio flows were also included in it. The composition of capital flows to India has undergone significant changes in the last decades. The bank loans comprise substantially the bucket of total flows. FDI started pouring in at a snail pace in the early 1980s; however, in a short span of less than a decade started. In 1994, total foreign non-debt flows were more than net debt-creating flows. Portfolio flows, which were almost negligible until the 1980s, became significant contributors in total flows in the early 1990s. Integration with the global financial market and its dominance in the intermediation of foreign capital movement became necessary in the 1970s. The role of multilateral or bilateral international institutions as intermediaries for foreign capital

movement started diminishing while private financial institutions took it over. In a more recent development post-financial crisis of 2008-09, capital flows' global priorities went through tremendous change share of the emerging market. The total global flows of international capital started increasing substantially. Needless to say, that India is also a beneficiary of this change in global investor perception towards emerging economies.

The net FII flows to India increased many folds from merely $ 2.5 billion in 2000-01 to $ 30 billion in 2010-11 and increased to $ 40 billion in 2014-15. Net FII flows to India have been positive every year except in 2008-09, which had more to do with external factors such as the global subprime crisis, which led to the collapse of investment bank behemoth Lehman brother in the USA. The problem is not confined to the USA but spread across the world as a financial crisis caused severe damage to the financial institutions in many countries. In the subsequent years, the volume of FIIs portfolio flows to India recovered from temporary shortfall, and net investment became positive. Like the FII flow, net FDI flows also followed the same trajectories and have been positive for many years. FDI inflow increased from merely US $ 3 billion at the beginning of centuries to the US $12 billion in 2010-11, rising more than four times in a decade.

Further, at the end of 2014-15, it increased to the US $32 billion. In the recent past, FDI into the country has increased significantly. According to DPIIT, FDI equity inflow stood at $ 529.63 billion between April 2000 and March 2021, indicating that the governments' policy changes have yielded results.

Changes in capital flow structure are also reflected in the shift in the market discipline observed in the capital market. Short-term flows are generally used to finance the temporary trend in the

flow of goods and services. Short-term transfers many a time also affect the long-term FDI (Chitre, 1996). However, temporary disequilibrium in the long-term flows often induces short-term inflows to meet the immediate funds' requirements.

1.5 Rationale for capital flows through available studies

Foreign capital inflows and macroeconomic importance are widely researched areas but are primarily multi-country studies. The institutional dynamics and foreign inflow readiness of the capital recipient country dictate capital inflow implications for the particular country. To this aspect, this study attempts to quantitatively investigate the role of capital flows in India's economic growth in light of many developing countries' experiences. Impacts of capital inflow on a country depend on evolving parameters such as financial institution structure and maturity, technological progress, policy settings, etc. All these dynamic factors keep changing; hence, a study of this nature regularly needs to be updated to understand the current context. The literature review will help ensure a thorough understanding of the topic to identify potential research areas. Establishing consistency in information and connection with the past investigation is equally essential to avoid duplicity. It will help in distinguishing the present study place within the schema of the sphere.

1.6 Effects of Capital Flows on monetary aggregates and policy

The conduct of monetary policy is a complex dynamic process depending on external factors such as the economy's structure (open or close economy). Monetary policies are important for asset price inflation, exchange rates, interest rates, etc. For example, in the post-crisis period, so-called safe-haven currencies look a lot different from other advanced economies. Another advanced

economy currency is moving a lot more in tandem with the currencies of emerging markets.

The prevailing macroeconomic situation in the host country determines the level of international capital flows in an economy. In contrast, capital inflows may trigger appreciation in the exchange rate, expansion in the monetary base, bank lending rate, etc. Both internal and external factor influences the capital flows, FDI and FPI, into India. The government undertakes the simultaneous opening up of different sectors of economies. The benefits of foreign capital flows are also realized in improved industrial productivity and growth.

1.6.1 Capital Flows and Exchange Rate

Foreign capital flows encompass money moving in and out of countries in search of better investment opportunities. The technological development, inter-country integration of financial institutions and capital, flows friendly policies adopted by countries have reduced the barriers to investment in foreign countries. The fund's movement in and out of countries influences the demand and supply of foreign currencies vis-à-vis local currency. The demand and supply situation of foreign currencies in a country's currency market determines the exchange rate in the long run.

To offset the impact on the exchange rate, the policy responses were directed towards promoting capital outflows through several ways, such as by early servicing of external debt, allowing foreign companies' acquisition by Indian companies, allowing offshore investment for domestic investors, etc. Positive bi-variate relation between foreign flows and the rupee-US dollar exchange rate was observed in an analytical study using time series data for India (Kohli, 2000).

1.6.2 Capital Flows and Reserve Accumulation

There are many reasons why central banks need to hold foreign reserves. Foreign reserves add a lot of flexibility and credibility to the government's financial dealings. The country can use it to finance the current account deficit, meet external sector obligations by the government and private sector, etc. In a country following a pegged or managed exchange rate regime, the central bank may use an accumulated foreign reserve to control the exchange rate. Foreign reserve is vital from the external sector resilience standpoint. The stock of foreign reserves provides comfort to the foreign investor about putting investment in a country. In a way, it acts as insurance for foreign investors. They feel comfortable that whenever they have to pull their money back, they would be able to do so without much difficulty while not being concerned about the exchange rate. A country holding a huge reserve may pull more foreign exchange. A substantial foreign reserve may become counterproductive for which capital control measures are not in place. It may attract many short-term debts, which may strain the external sector's resilience. When the global interest rate rises unexpectedly or from a period of extended accommodation led to the reversal of foreign flows, a country with reasonably good reserves would be able to withstand the situation without much difficulty.

When the exchange rate is under undue pressure due to a surge in capital inflows, the central bank directly intervenes in the currency market to stabilize the exchange rate to avoid undesirable consequences on the domestic economy. If a country follows a pure float exchange rate regime, then there is no central bank intervention. In that case, an increase in capital inflows would lead to higher imports. Alternatively, if under a fixed exchange rate

regime, it becomes inevitable for the central bank to intervene to mitigate appreciation pressures on the domestic currency. The choice of tool for intervention, time for intervention, and size of the intervention all depend on the central bank's objectives, in essence, a policy choice. In India, we have observed that RBI was very aggressively absorbing the surge in net capital inflows during the initial period of liberalization to build and stabilize heavily deteriorated reserves position. Indian experience suggests that an increase in capital inflows improves the foreign exchange reserve of the country.

1.6.3 Capital Flows and money supply

Capital inflows bring foreign currency, which needs to be converted into domestic currency to fructify investment. Hence, it is likely to influence the domestic money supply. The central bank issues domestic currency against the net accumulation of forex reserves. However, this relation between the capital inflows and the money supply is not straightforward. Any change in monetary base depends on what action the central bank is undertaking in case of inflows, whether it intervenes in the foreign exchange market or lets it go. If the central bank intervenes, it will accumulate international reserves, increasing the bank net forex assets. India follows direct monetary control, limiting the bank's ability to optimally utilize Open Market Operation (OMO).

1.7 Foreign capital inflow and growth rate

India still follows a cautious approach to the liberalization of foreign capital and prioritizes FDI and FPI flows. This approach is working towards giving a necessary fillip to economic growth and minimizing associated risk. Does capital flow precede growth, or what is the relation between these two? Many such questions need an answer in the context of India’s capital liberalization. India has

been open for foreign capital inflows for more than three decades now we have realized the expected benefits. With the numerous episodes of massive capital outflows and their economic implications, the world has learned that the country must first have an open capital account policy. Else any episode of sudden and massive capital outflow may outweigh all the gains a country has had from following an open capital account policy.

1.8 Objectives of the study

The nature, volatility, and perceived implication of capital flow on the recipient countries' economic growth and significant monetary indicators still need further research. Many references in the literature suggest that a developing economy going through a phase of a high economic growth rate may attract capital from outside in the short run. However, the collapse of the growth rate also invites a financial crisis due to a sudden reversal of capital flows. It is observed that a quantum surge in capital flows in a short period over the absorptive capacity of the recipient country will pose a challenge to the macroeconomic policies and management of monetary policy in the host country. On the contrary, Prasad et al. (2006) analysis has shown that capital flows are unsuitable for developing countries. They found a negative correlation between growth and capital flows and growth. Finally, they concluded that foreign capital rather than helping the developing economy supplement growth might hurt the pace of economic growth.

Post-liberalization, India experienced a significant surge in quantum and change in capital flow mix. Constantly prevailing higher interest rates in India accelerated capital flows more than the current account deficit. The increased inflow of capital makes the conduct of monetary policy, especially exchange rate

management, a difficult task. At the same time, foreign capital inflow also helps develop and deepen financial markets and encourages the restructuring of financial institutions. The role of foreign capital for India's macroeconomic and monetary policies is analytically examined to provide evidence-based policy suggestions. The different chapters examine the broad objectives, and related questions set out in this thesis. However, the fundamental questions addressed in the various chapters can be summarized in the following:

Hypothesis

- The notable trend in the macroeconomic variable is evident over the sample period.
- There is a well-established causal relationship between capital inflows and economic growth.
- There is an inbuilt dynamism between macroeconomic variables and the indicators with particular respect to foreign capital flows
- Foreign exchange management, variation in the foreign exchange rate, and foreign capital flows are interlinked.
- Macroeconomic management of capital flows is inter-temporal and not instantaneous.

Accordingly, the research focuses on causality and cointegration analysis of selected significant macroeconomic variables of the Indian economy. We examine pair-wise and multivariate relationships, short-run or long-run causality, and linkages among the variables. To further explain my research's rationale and implications, let us explore a hypothetical example of macroeconomic scenarios to illustrate a critical point. Therefore, supposedly, FDI is integrated with GDP growth in the long run and combined with inflation in the short run. This implies that inflows of the foreign fund will benefit the economy as they will induce

GDP growth in the long run. In contrast, in the short run, it will generate inflationary pressure on the economy.

1.9 Nature and sources of data

We have used simple diagnostic statistics and structural econometric models to study the impact of capital flows on selected macroeconomic indicators and their implications for economic growth. The study uses quarterly estimates of the following macroeconomic variables for Q1 2000-01 to Q1 2019-20. The unavailability of readily available quarterly series data for many macroeconomic variables included in the study also constrained the period considered for the study. The study uses variables such as Call money rate (CMR) to measure domestic interest rate. Call money rates are short-term rates that reflect the market dynamics of short-term demand and supply situations for the funds in the money market. Foreign exchange reserves (FEX) by reserve bank of India, FDI, and FPI received by the country and reported by Reserve bank of India. GDP all sectors as reported by CSO. Money supply (M3) is also called broad money, which includes hard cash in the system and deposits in the bank. Wholesale Price Index (WPI) all commodities taken for the inflation rate, the Exchange rate (EXR) which is rupees against U.S. dollar reported by Reserve bank of India. Export (EXP) and Import (IMP) of goods and services measured in US dollar as a set practice.

The quarterly estimates of GDP: The Central Statistical Organization (CSO) introduced Gross Domestic Product (GDP) quarterly estimate in June 1999. The June 1999 estimates released wereQ4 (January-March) of preceding FY 1998-99. The CSO releases quarterly GDP estimates on the last working day post two months of the quarter-end. GDP estimates are calculated through

two methods – by production approach and by expenditure approach. The production approach was used to compile the quarterly GDP estimate released in June 1999. From May 2007, quarterly GDP estimate collected using the expenditure approach become available. The assessment used new series of national accounts 2004-05 as the base year.

The production approach to GDP uses the benchmark-indicator method to estimate the GDP. For each industry group, a key indicator or a set of critical indicators are selected first. While choosing the indicators or set of indicators, volume or quantity terms data should be available for every quarter. To obtain previous year estimates of data for output/value-added, each indicator/set of indicators are extrapolated to the current quarter's value. Estimates of gross value addition of different sectors at constant prices are compiled by two methods:1) estimate the value of output and material inputs to derive gross value added, 2) estimate gross value addition using physical indicators. To obtain the estimates at current prices, implicit price deflators are calculated. To calculate deflator WPI or CPI indexes, data for the respective industry groups may be used depending upon the purpose. Using price deflator, industry-wise estimates at current prices are calculated. The expenditure approach of GDP estimates uses aggregate final consumption expenditure for different economic agents. Household expenditure, GFCF, change in stocks, government final consumption expenditure, and net exports are accounted for in the estimation. The quarterly estimates of GDP use market price estimates for each quarter of final expenditure categories separately to arrive at constant price estimates by applying appropriate deflators. We have used the quarterly

estimates for our analysis by obtaining data from the RBI database for the Indian economy, which sources these data from CSO.

Call money rate (CMR) is measured as a proxy for our analysis's short-run domestic interest rate. Call money is an instrument in the money market available to banks or other financial institutions to meet short-term fund requirements, especially statutory obligations. It fulfills the need to meet short-term mismatches and fund positions, and fund managers use the instruments to tide over their temporary fund surplus and shortages. An institution participating in money markets lends or borrows as per the requirement of funds having a maturity period that varies from one day to a fortnight. Call money rate (CMR), a rate interest charged on the funds raised, depends upon the market condition on that particular day. In fact, on that specific instance when a borrower borrows.

Money Supply (M3): The Reserve Bank of India has been traditionally compiling and disseminating monetary statistics almost since its inception. Presently economic statistics data are collected from the banking and postal sector on a balance sheet framework and published regularly in different reports. Monetary aggregates data are compiled from Commercial Banks, Cooperative Banks, Post offices, MFI, etc. Reserve Bank is also responsible for setting up policies and guidelines for the compilation of monetary aggregates. For example, since March 1978, savings deposits were apportioned into 1) demand and 2) time deposits components. Similarly, other classifications are introduced from time to time for treatment and apportionment of deposits in synchronization with domestic and international requirements.

Monetary aggregates include a) compilation of four measures of monetary aggregates (M1, M2, M3, and M4), and b) three measures of liquidity aggregates (L1, L2, and L3). In our study, we are concerned with monetary aggregates only. M1 includes: a) hard currency with the public, b) demand deposits with the banking system, and c) other RBI deposits. For analysis, we have considered monetary aggregates M3 as a measure of money supply, which includes M1 and time deposits.

FDI and FPI are investments made by non-resident persons or institutions outside India into Indian companies or organizations. An investment made into an unlisted Indian company through any prescribed capital instruments or 10 percent or more in a listed company is termed as foreign direct investment. If the investment made is less than 10 percent of the post-issue paid-up equity capital of a listed Indian company or less than 10 percent of each series of capital instruments' paid-up value. An FPI may become FDI if the level of investment proportion qualifies to become an FDI, but once an FDI is always an FDI, even if the level of investment falls below the minimum threshold of FDI.

As per the IMF definition of FDI, equity capital, earnings which are reinvested, and any other direct capital investment are classified as FDI. Many countries, including developing ones, also follow and report data as per IMF specifications. RBI definition of FDI defers with the IMF definition. Any investment from non-residents through the capital instrument in a not-listed Indian company is classified as FDI. There is a threshold of a minimum of 10 percent of the post-issue paid-up equity capital of the entity that will be eligible to classify as FDI. Our analysis has considered quarterly FDI and FPI print made available by RBI through its report bulletin.

Exchange rate (EXR): exchange rate policy followed by India is dynamic and has undergone many changes in the recent past. From a par value system followed until 1975, it matured and started following a basket-peg (exchange rate pegged against a basket of international currencies) until 1990. Gradually it moved to begin following managed floats exchange rate system. The post-independence Indian rupee was linked to a single currency. The pound sterling may be because the UK was the only major trade partner. This system was abolished, favoring a new exchange rate policy under which Indian currency exchange was determined with the exchange rate with a basket of currency to overcome challenges in exchange rate management. As part of broad liberalization reform, India adopted managed float systems that paved the way for transition favoring the market-determined exchange rate system. In the transitory period, for a short span dual exchange rate system was kept in place. The system was later transitioned into a unified exchange rate system.

The exchange rate is a crucial indicator affecting many domestic and foreign traders, investors, travelers, etc. It determines investible portfolios value, trade balance (export and import), international reserves, external debt servicing, etc. The exchange rate affects all those above at the same time. It also gets affected by all of them. This implies exchange rate exhibits bi-directional causality with external flows and other macroeconomic indicators listed above. We have considered the rupee-dollar exchange rate reported by the RBI for analysis.

Foreign Exchange Reserve (FEX): conceptually, there is no unique and definite forex reserves definition. There is no unanimity on what all types of assets should be considered under foreign exchange reserve accounting. However, following the

widely accepted definition by many countries, India has adopted a definition suggested by the IMF in BoP Manual. The definition emphasizes the liquidity feature of the asset. The important feature of the asset should be discussed in the subsequent paragraph.

It should be readily available to monetary authorities. It should be in their direct control. It should be universally accepted as direct finance for external payments imbalances. In this analysis, we have considered the foreign exchange reported by India's reserve bank, which considers the above definition of foreign exchange reserve.

Export and Import: trade is an essential driver for economic growth. Many empirical studies are studying the development pathway that suggests export is a significant source of growth. Export and import are directly related to capital flow. Inflows of investable foreign capital follow requirements for the import of capital goods. DGFT is the nodal agency that acts as a data repository for foreign trade in India. Whereas for the analysis, I have collected EXIM (export and import) data compiled and made available by RBI.

Wholesale Price Index (WPI): in a dynamic world, prices keep changing; WPI monitors the dynamic movement of prices with time dimension at the aggregate level. Our analysis Wholesale Price Index (WPI) is considered a proxy for inflation. It gives a reasonably good idea of how the prices are moving over time. WPI is compiled and released monthly. Our analysis has converted monthly data into quarterly data by considering the arithmetic average of indexes for the months falling in the quarter. Economies undergo structural changes in the available product and their specifications over time, both in content, quality, and packaging changes. WPI changes its base year at regular intervals to capture

these dynamic changes in the economy. We have used base splicing to have continuous data for the study period.

For GDP, the base year was 1999-00, 2004-05, and 2011-12, whereas, for WPI, the base year was 1993-94 and 2004-05. We have applied the widely used growth rate methodology for splicing the series and bringing it to a typical base year. Variables are in the natural logarithmic form used in the analysis, but only the base form of variables is used for the descriptive statistics analysis in chapter 2.

The data are collected from the Handbook of Statistics in the Indian Economy (RBI) and International Financial Statistics (IMF). The quarterly is for the period Q1, 2000-01 to Q1, 2019-20. Variables measured in value terms are calculated in a million USD. The study period is constrained by the unavailability of readily available quarterly series data.

1.10 Limitations of the study

The presence of vital financial institutions and their policies supporting foreign capital inflows are prerequisites for a country to realize the true benefit of capital. Capital inflows also depend on the prevailing sociocultural factors, and political stability in the recipient country is beyond the current study's scope. The role of foreign capital flows on growth and monetary indicators depend on several domestic and international factors. Political measures, human capital endowment, government expenditures, investment risks, etc., are beyond the scope of this study. The study is focused on the economic implications of capital flows on crucial macroeconomic variables. Government policies and political changes can influence macroeconomic variables. Quantification of political and systemic risks is a complex process, and many a time, there is a shortage of data for suitable quantified surrogate

variables. Hence, the inclusion of this information in the framework of quantitative analysis is challenging. Many available studies indicate that political threats can deter the inflows of foreign capital in developing countries[1].

We collected data from various sources that contained different definitions and restrictions as per their predefined guidelines that may not support our analysis framework. However, synchronization, smoothing, and harmonization of data have been carried out meticulously. The outcome of this study will also depend on the availability of secondary data published from various sources. Accordingly, data are taken from many sources subject to some conversion and manipulation.

1.11Organization of thesis

In the last two decades, the Indian economy has grown steadily, and the country has avoided any major Balance of Payment (BoP) crisis. Over the period Indian economy has undergone many changes. The domestic financial institutions have also matured to manage the inflow of foreign capital effectively. The inflows of foreign capital into the country have been increasing with increasing rates over the years. Given the changes in the economy's structure and openness to foreign capital, this thesis attempts to understand the impact of capital inflow on growth and other macroeconomic and monetary parameters.

The thesis is organized into five chapters. Chapter 1 elaborates on the introduction of the topic and studies the relevant theoretical background for the analyses. It further set the research questions that need to be analyzed in the subsequent chapters. It also reviews available theoretical and empirical literature examining the impact of capital flow on macroeconomic and monetary variables, including economic growth. Chapter 2

extensively studies significant macroeconomic variables and their trends in the last two decades. This chapter delves into the role of each of the macroeconomic drivers responsible for inflow in India. In Chapter 3, causality between foreign inflows and macroeconomic indicators using the Granger causality test in the frequency domain. Analysis diagnoses the short-run and long-run impact on individual variables. A VECM framework is developed to interpret capital flows and the macroeconomy in Chapter 4. Chapter 5 concludes and discusses the policy implications within the study framework.