

DISCUSSION PAPER SERIES

IZA DP No. 12197

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A Review of the Literature**

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## ABSTRACT

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# Monetary Policy, Growth and Employment in Developing Areas: A Review of the Literature

In this paper we review the literature on the impact that monetary policy has on growth and employment in developing countries. Much of the literature focusses on the impact of monetary policy on inflation levels and inflation volatility, and sometimes on output (GDP) levels and volatility of output. This survey of the literature on Monetary policy and growth shows that money plays a small role in developing countries and that monetary policy is not a very important influence on growth but may have some impact on inflation. Although there is much discussion about the merits of keeping inflation levels and volatility low, there is very little literature on studying the impact of low rates of steady inflation on the levels of private investment and technological change and hence on economic growth and on employment. There is very little research about the direct links between monetary policy and employment. The impact of growth on employment depends on what are the main drivers of economic growth and the initial state of the economy. Although growth may lead to increasing employment (formal and informal) there is little evidence showing that growth leads to an increase in “decent employment”.

**JEL Classification:** E52, J4, O11, O17, O47

**Keywords:** monetary policy, role of money, growth, employment, development

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# Monetary Policy, Growth and Employment in Developing Areas: A Review of the Literature<sup>1</sup>

**P.N. (Raja) Junankar**

*“More generally, nothing in the empirical growth literature suggests that issues of long-term economic development can be disassociated from the historical and cultural factors that fascinated commentators such as Max Weber.”*

(Durlauf et al., 2005)

## **1. Introduction**

In this paper we review the literature on the impact that monetary policy has on growth and employment in developing countries. Much of the literature focusses on the impact of monetary policy on inflation levels and inflation volatility, and sometimes on output (GDP) levels and volatility of output. Although there is little research about the links between monetary policy and employment directly, some literature focusses on monetary policy and growth. As such, the paper studies the links between growth and employment, independently of monetary policy. It is worth emphasising at the outset that growth is not a sufficient condition for economic development.<sup>2</sup> The Commission on Growth and Development (World\_Bank, 2008) stated that the common characteristics of economies that enjoyed sustained growth were: (i) openness to the global economy; (ii) macroeconomic stability; (iii) high rates of private and public investment (iv) respect for market signals but not absolute deference to markets; and (v)

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<sup>1</sup> Paper prepared for the International Monetary Fund. The views expressed in this paper are those of the author and do not represent the views of the IMF.

<sup>2</sup> This is not the place to discuss the determinants of growth or the policies that are necessary for growth and/or economic development. However, the oft-quoted injunction “stabilize, privatize and liberalize” (Commission on Growth and Development, 2008, p. 5) is a facile statement. Economic development requires significant changes in society and a structural transformation of an economy with policies that lead to a decrease in poverty and inequality. Each economy has a different history and culture which limits and influences its development. See for example, BANERJEE, A. & DUFLO, E. 2005. Growth Theory through the Lens of Development Economics. *In: AGHION, P. & DURLAUF, S. N. (eds.) Handbook of Economic Growth*. Amsterdam: Elsevier Science.. *Appendix 1 provides our working definition of developing countries following the World Bank’s definition*. We define developing economies as those belonging to the Low Income and Lower Middle Income countries as defined by the World Bank.

governments committed to trying out country-specific growth strategies; and (v) government provision of public goods, (p. 13). Although this does not explicitly specify monetary policies as an essential requirement for growth, macroeconomic stability is to some extent linked to appropriate monetary and fiscal policies. Growth clearly requires a movement of production from low productivity sectors to high productivity sectors, see the discussion below on the Lewis dual economy model. Further, growth requires a growth of investment in fixed capital that embodies new technology: increasing productivity growth via technological change is the key to economic growth.<sup>3</sup>

It is interesting to note that since the Global Crisis there have been several leading economists who have questioned the orthodoxy of the role of monetary policy. The continuing low inflation rates in the context of loose monetary policy (low interest rates and quantitative easing) in many of the OECD countries have led some economists to suggest that economic policies should attempt to *increase* the rates of inflation.<sup>4</sup> However, there has not been a similar attempt to review the role of monetary policy for developing countries.

The review begins with a survey of the role of money in developing countries and then studies the instruments of monetary policy that are available to policy makers. It then studies the extent to which monetary policy is used to influence the macroeconomy of developing countries. Our review finds that as much of inflation in developing countries is imported via commodity (or food) prices and that money plays a very limited role, monetary policy has a very limited impact on growth<sup>5</sup>. IMF (2015a Evolving Monetary Policy Frameworks in Low-Income and other Developing Countries) states “low- and lower-middle income countries (LLMICs) face frequent large shocks (domestic supply shocks, global food and fuel price shocks) that raise the volatility of inflation and can pose complex trade-offs. They are also subject to several constraints including relatively low financial depth, and lack of adequate and timely data.” (p.6). Also note that footnote 1 (p. 6) states “Monetary policy framework issues discussed in

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<sup>3</sup> *Economic growth is a study of the productive potential of an economy*, it does not refer to cyclical increases in GDP as it moves out of a recession.

<sup>4</sup> See Blanchard and Summers (2017), BLANCHARD, O. & SUMMERS, L. 2017. Rethinking Stabilization Policy. Back to the Future. *Rethinking Macro Policy*. Peterson Institute for International Economics., FILHO, G. M. M.-F. 2010. Inflation Targeting and the Crisis: An Empirical Assessment. Washington DC: International Monetary Fund.

<sup>5</sup> IMF (2015b) Country Experiences “Food inflation has often been singled out as a key driver of India’s high and persistent inflation in the past few years...food inflation presents a challenge for monetary policy management.” (p. 19). IMF (2015a) states “Headline inflation is much more volatile in LLMICs given the high CPI food shares and more volatile food prices, due in large part to shocks to agricultural production.” (p. 20)

this paper do not apply to all LLMICs *as countries have different structural characteristics.*”(IMF, 2015a).

IMF (2015a) also argues that “a majority of central banks do not have a well-articulated forward-looking framework for assessing how policy should respond to shocks ...” (p. 6) “It aims to help LLMICs with some scope for independent monetary policy strengthen their monetary frameworks, and provide guidance on how the process can be managed.” (p. 7)

Although IMF (2015a) in Para 8 (p. 7) claims it is “not intended to provide policy prescriptions in any particular situation”, the Staff Report is a clear set of recommendations for the LLMICs to follow including stating that “price stability should be the primary or overriding objective of monetary policy over the medium term.” However, it qualifies this later by stating that it “should also consider the level and volatility of output, unemployment, and the exchange rate.” (p. 8) It also states in Para 10, “These principles are consistent with inflation-targeting frameworks (IT) but is emphasised that IT frameworks are not the only way to implement them. The principles stated stress...the primacy of a medium term inflation objective but do not require an unduly narrow focus on inflation at the expense of considering the impact on the real economy and the financial system.” (p. 10)

“While most LLMIC central banks place price stability as the primary objective of monetary policy, its role in the policy framework varies widely.” (p. 11)

“The rise and size of capital flows complicates monetary policy and macroeconomic stabilization more generally.” (p. 21)

In our paper we also argue that the conditions of developing countries are very different from advanced economies. They have a different history that has often led to a very unbalanced and distorted economy. As argued later, many of these countries have a very primitive monetary and financial system that makes limited impact of monetary policy on macroeconomic variables like inflation, investment, and growth<sup>6</sup>. The literature discusses the impact of monetary policy on inflation rates and volatility of inflation, and sometimes on the level of output (GDP), only a few study the impact on economic growth. Curiously, we could not find

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<sup>6</sup> See the discussion in MISHRA, P. & MONTIEL, P. 2012. How effective is monetary transmission in low-income countries? A survey of the empirical evidence. *Economic Systems*, 37, 187-216.

any econometric research that demonstrated the impact of monetary policy on investment in fixed capital or on technological change.

Some research, as mentioned above link monetary policy and economic growth. There is a very limited literature on monetary policy leading *directly* to employment growth. Our study argues that the concept of “employment” for developing countries is not very meaningful as everyone must eke a living by whatever means possible, hence growth of employment simply follows population (or labour force) growth. As such, we then study the impact of growth on employment by distinguishing its different components: by sector, and whether it is formal or informal employment. The review suggests that most of the growth of employment in developing countries has been in informal employment/vulnerable employment. Growth would help “development” if it leads to increased wage employment, lower vulnerable employment, more decent work, and a move from low productivity sectors (agriculture) to higher productivity sectors (manufacturing and industry). An issue that we do not discuss in detail is whether the Global Crisis has led to a significant change in the process of development and employment.<sup>7</sup>

There is a significant literature that regards controlling inflation as a necessary condition for a country to have stable and high growth. It assumes that inflation is mainly due to “too much money chasing too few goods” or due to excess aggregate demand. Much of the literature argues that controlling inflation levels and volatility would lead to a more stable and growing economy. It is argued that providing a low and stable inflation rate provides the private sector with an appropriate environment to encourage private sector investment and hence technological change. Further it is argued that tight monetary policy helps to control inflation and hence is necessary for economic growth. It is suggested that this growth would lead to better employment conditions via the “trickle down” effect. In recent years this concept of trickle down has been rejected <sup>8</sup>.

The reason we are concerned with economic growth is because we are interested in whether developing countries are getting better off in terms of: food and nutrition, employment, housing, health, lower poverty, and lower inequality. It is important to remember that different

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<sup>7</sup> A recent paper by Nomaan and Nayantara (2018) discusses the Indonesian employment and growth after the Crisis.

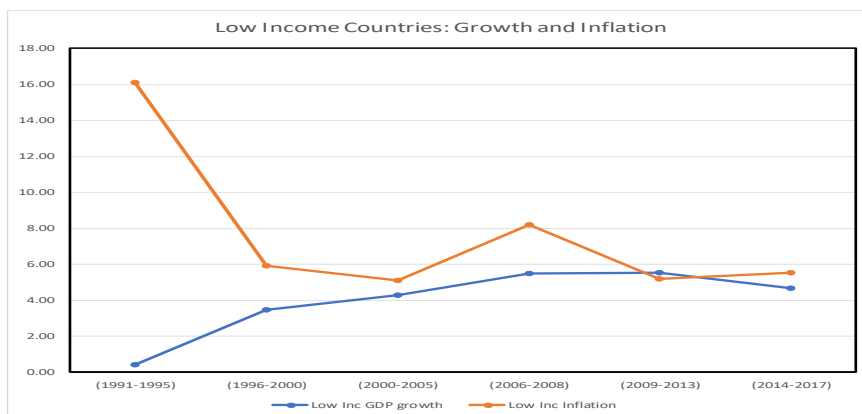
<sup>8</sup> See Dabla Norris et al DABLA-NORRIS, E., KOCHHAR, K., SUPHAPHIPHAT, N., RICKA, F. & TSOUNTA, E. 2015. *Causes and Consequences of Inequality: A Global Perspective*, Washington DC, International Monetary Fund.

countries have a different history (many are ex-colonised countries) and culture and where some of them have gone through major political shocks that have changed the course of their development. As such, there are no simple remedies that can be applied without considering this historical background.

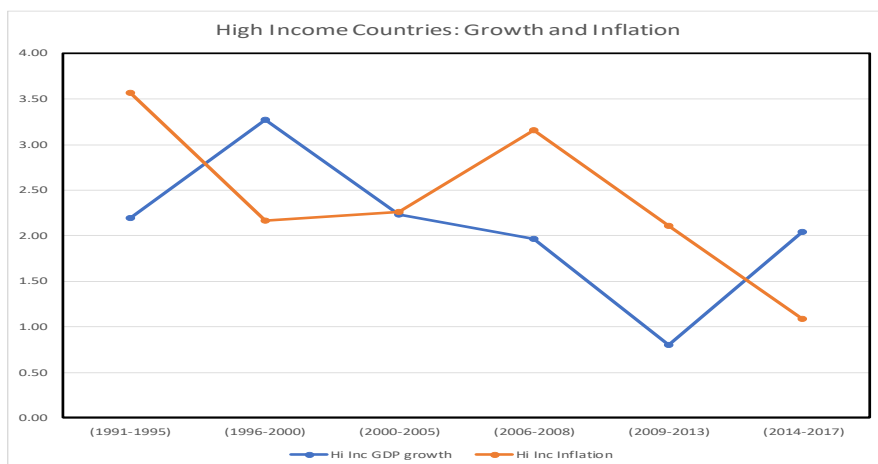
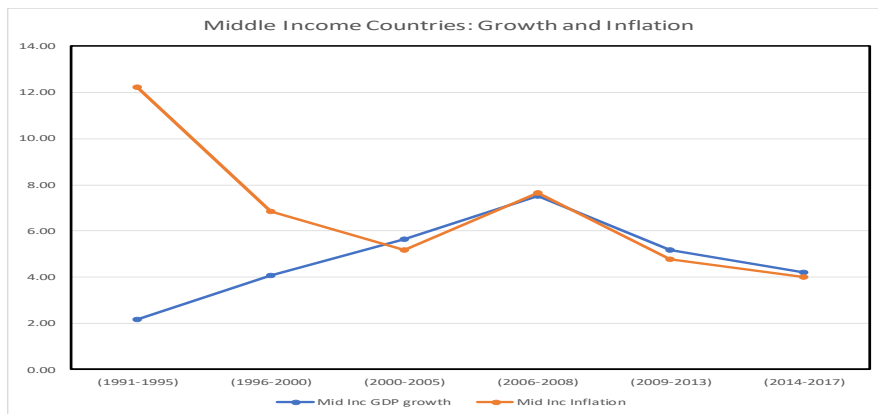
Does this growth come about through more rapid private sector growth via higher private investment and technological change? Or does it come from improvements in public infrastructure, public education, and public health? To what extent do government policies lead to “pro-poor” (inclusive) growth? Although much of the earlier literature emphasised the importance of the private sector in generating growth, in recent years many economists have argued that public investment in infrastructure, education, and health are critical for more inclusive growth.

As the set of graphs in Figure 1 show there is no obvious link between the growth rates of GDP and inflation rates for countries grouped by Income levels. They all show that the growth rates fell after the Global Crisis, but so did inflation rates. Obviously, there is more to it than a simple relation between growth and inflation. The rest of this paper will discuss whether monetary policy can control inflation and whether this helps growth and employment in poor countries.

**Figure 1: Growth and Inflation by Income Groups**







Source: World Development Indicators

## 2. Money in Developing Countries

Whether monetary policy has a significant impact on the economy of LDCs depends on whether the country has a well-developed financial system. In developing economies agriculture plays a large and significant role in the economy and a large part of this sector has limited contact with the monetary system. Many transactions are based on bilateral trade, money lenders provide informal credit, and hence the banking system is relatively unimportant. Table 1 illustrates the importance of the agricultural sector in terms of its share in GDP and in terms of its share in employment. It also shows the relatively small role of money and finance for Low Income and Lower Middle Income countries.

**Table 1: Role of Agriculture**

	<b>Means Low Income (1993- 2017)</b>	<b>Means Lower Middle Income (1993- 2017)</b>	<b>Means Upper Middle Income (1993-2017)</b>	<b>Means High Income (1993-2017)</b>
Agriculture, forestry, and fishing, value added (% of GDP)	29.41	18.99	9.05	1.56
Agriculture, forestry, and fishing, value added (annual % growth)	3.29	3.38	3.02	1.45
Employment in agriculture (% of total employment) (modeled ILO estimate)	72.11	49.54	30.02	4.19
Broad money (% of GDP)	31.11	54.36	91.98	109.70
Domestic credit to private sector by banks (% of GDP)	12.86	34.02	70.47	87.42
GDP growth (annual %)	4.19	5.20	4.92	2.13
Inflation, consumer prices (annual %)	7.20	6.58	6.30	2.23

*Source:* World Development Indicators

Does a majority of the population have a bank account? Is money used in all (or most) transactions? Or does a significant amount of trade take place on the basis of exchange of services (barter trade)? The data suggest that the number of people who have bank accounts is very low as are the number of bank branches. Summary statistics for 2015 shows this very clearly, see Table 2a and averages for the period 2001-2015 are shown in Table 2b.

**Table 2a: Financial Characteristics, Averages for 2015**

	Bank Accounts per 1000 adults	Bank Branches per 100,000 adults
Mean Low Income	125.06	4.01
Mean Lower Middle Income	617.80	13.85
Mean Upper Middle Income	863.28	24.67
Mean High Income	1352.81	31.34

*Source: World Bank Global Financial Data Base, May 2017*

**Table 2b: Financial Characteristics, Averages for 2001- 2015**

	Bank Accounts per 1000 Adults	Bank Branches per 100,000 Adults
Mean Low Income	101.11	2.55
Mean Lower-Middle Income	493.27	11.15
Mean Upper-Middle Income	611.99	19.21
Mean High Income	1180.95	35.87

*Source: World Bank Global Financial Data Base, May 2017*

For further details, see Appendix Table 2, Table of Means of Financial Variables

Again, there is unambiguous evidence that private credit plays a relatively small role in developing countries, see Appendix Table 2. For example, only 13 % of firms used banks to finance investments and only 19 % of firms used banks to finance working capital (data averaged over 2001-2015). Given such low ratios for private credit in developing areas it is difficult to see how monetary policies that use an interest rate mechanism would influence private sector investment.

In a country with a large informal sector do changes in the interest rate have any impact on the economy? If much of the trade in an informal economy takes place with cash transactions, any

borrowing that takes place is probably from money lenders, not banks. With the recent demonetisation of high denomination notes in India (Rs. 500 and Rs. 1000) there was a sudden fall in transactions and the informal economy suffered a set-back. This suggests that a large proportion of trade in India was based on cash transactions in the informal economy. Do firms that invest use their own profits to finance investment or do they borrow from banks, or do they sell shares to get outside funding? It appears that they are mainly self-funded and hence changes in bank's lending policies or interest rates have little effect on investment, except for investment by large industrialists. Do changes of the interest rate by Central Banks lead to changing interest rates by Commercial banks? According to (Ghazanchyan, 2014 p. 12) there is little evidence to support this, at least in Sri Lanka, although it may be significant for some other developing countries.

### **3. Monetary Transmission Mechanisms (Theory)<sup>9</sup>**

First, we examine the existing literature on monetary policy and monetary transmission mechanisms in developing countries with a view to assess the impact of monetary policy on growth and employment in these countries. Since the Great Inflation of the 1970s and the debt crisis of the 1980s, impacting mostly the developing world, monetary policy has taken a centre stage in macroeconomic policymaking. This happens against the backdrop of persistent fiscal deficits leading to greater debt burdens, resulting from political systems manipulating the tax and spending patterns to serve vested political interests. The other concern is high inflation which is also regarded as an outcome of running persistent fiscal deficits. Therefore, policymakers and economists alike, seem to have reservations about the potency of fiscal policy and have come to a general agreement, culminating in what is known as the *Washington Consensus* of the 1980s, about the effectiveness of monetary policy in stabilizing output and inflation. In short, it is believed that low single digit inflation, low fiscal and current account deficits, flexible exchange rate system and free flow of capital, and a flexible labour market would ensure stable long-run economic conditions which in turn would be beneficial for economic growth.

Founded on this belief, international financial institutions such as the World Bank and the International Monetary Fund (IMF) strongly advocate this mainstream macroeconomic policy

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<sup>9</sup> The preliminary draft of Section 3 was jointly authored by Ahmed Taneem Muzaffar but he withdrew from working on this project and is no longer responsible for this revised section. This revised section is authored by Raja Junankar.

management to the developing countries. As a result, central to the economic management of some of these developing countries, following the IMF's suggested economic reforms, has been to restrain inflation at low levels in the medium term and to maintain a low budget deficit, targeted at near zero primary deficit. Typically, as seen from the IMF Article IV Country Consultations Reports, the IMF prescribed policies include using monetary policy to control inflation and reining in fiscal deficits. The mainstream argument in favour of *fighting inflation first* even at the expense of immediate adverse effect on growth is that this would foster sustained economic growth in the long-run by removing economic uncertainty.<sup>10</sup> Recently, the IMF has argued that although control of inflation in developing countries is important, some attention should be paid to any output consequences. It is suggested that countries could follow a Taylor-rule giving some weight to inflation and output consequences of monetary policies.

### **3.1 Monetary Transmission Mechanism in developing countries**

If monetary policy is playing a central role in the economic policy management of the developing countries, it is crucial to understand how monetary policy can affect the economy, i.e. the process of monetary transmission mechanism (MTM). Bernanke and Gertler (1995) note that the different channels through which transmission mechanism affects aggregate output and prices remain a *black box* because of continuous monetary innovations and financial market integrations. Ireland (2005) mentions that any model or theory of MTM is based on the assumption that there exists some degree of friction in the economy so that nominal prices cannot adjust immediately and proportionally following changes in the monetary base of the economy. More complexity arises because the channels of MTM are not *mutually exclusive*, that is the combined influence of a variety of channels would determine the overall response of the economy to a monetary policy action (Kuttner and Mosser, 2002) (for instance, see Figure 2). In the following paragraphs, we would outline the key types of channels of monetary transmission mechanisms as discussed in the literature.<sup>11</sup>

It is important to note that most of the theoretical discussion below is in the context of developed OECD economies where policies were meant to help to *stabilise short term fluctuations in output and inflation*. There is very little evidence provided about the effects of these short term stabilisation policies on long term economic growth and development.

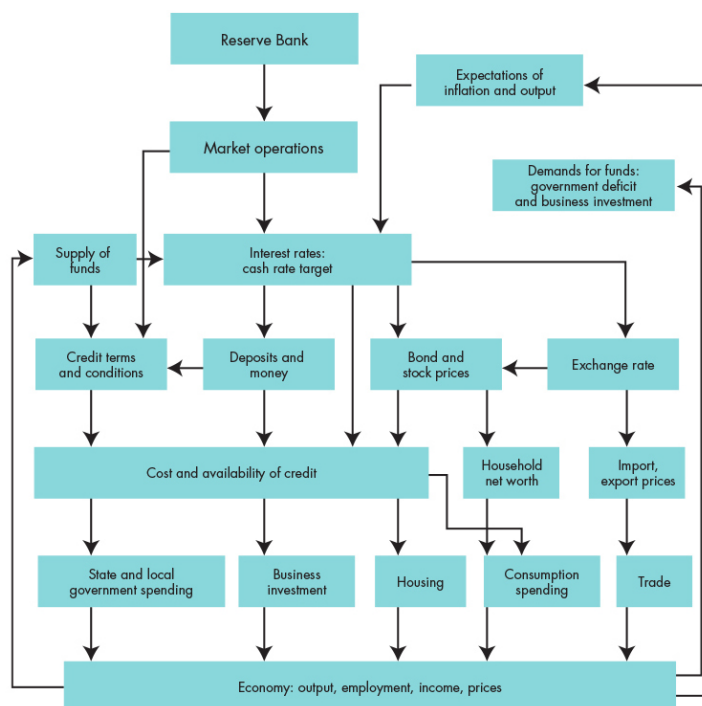
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<sup>10</sup> This is supposedly in view of "short term pain for long-run gain".

<sup>11</sup> This part is heavily drawn on Mishkin (1996 and 2004)

The traditional channels of MTM (mostly of *Keynesian* persuasion) include the *interest rate channel*, the *credit channel* (that is bank lending, balance sheet, cash flow, unanticipated price level, and household balance sheet channels), the *exchange rate channel*, and the *asset price channel* (that is equity price, wealth, housing and land price channels).

**Figure 2: A flow chart of basic monetary transmission mechanism**



Source: Viney and Phillips (2015)

The *interest rate channel* explains that tight monetary policy would lead to an increase in the real interest rate which in turn would raise the cost of capital. This, therefore, would cause a decline in the investment spending and since investment is a component of aggregate expenditure, it would reduce aggregate demand, leading to a fall in output and prices. In addition to firms' investment decision, it would also affect consumers' decision about housing and durable expenditure. Taken together, the interest rate channel is seen as one of the strongest channels through which MTM works. This is suggested in the Taylor type rule which advocates that the rise in short-term nominal interest rate as a result of contractionary monetary policy would affect the real long-term interest rate through a combination of sticky prices and rational expectations. This then reduces the firms' investment, consumers' expenditure on housing and durables, ultimately causing a decline in aggregate output and inflation. Obviously, this would lead to a short run fall in output. Whether there would be a longer run impact that would lead to higher investment in the future depends on the extent to which firms respond to the lower

(and less volatile) inflation rate. This is an area (the long run impact of lower rates of inflation) that needs further investigation, see below.

However, this discussion is about tightening monetary policy to restrain inflation. Would a lowering of interest rates lead to an increase in private sector investment and an increase in aggregate demand? Would firms respond symmetrically to upwards and downwards movements in interest rates? The recent Global Crisis has led to most OECD countries lowering interest rates to almost zero but with little effects on private investment. Sometimes this is referred to as problems of “pushing on a string”!

The *exchange rate channel* has perhaps gained importance in recent decades because of the spread of globalisation of goods and financial markets and more and more countries adopting flexible exchange rate systems, thus making “monetary policy inherently international in scope” (Mishkin, 1995, p. 5). This channel explains that appreciation of domestic currency makes domestic goods more expensive than foreign goods. Therefore, domestic market would lose competitiveness and net exports would fall, leading to a fall in aggregate output. The interest rate channel also has an influence in making the domestic currency appreciate or depreciate in this case. For instance, a rise in the domestic interest rate would attract more capital inflow into the domestic country for higher return, provided a flexible flow of capital is present. This can raise the demand for the domestic currency in the foreign exchange market and thus causing an appreciation of domestic currency which in turn makes domestic country’s export less competitive in the international market. It should be noted, as IMF (2015a) states “The rise and size of capital flows complicates monetary policy and macroeconomic stabilization more generally.” (p. 21)

The *asset price channel* argues that monetary policy can affect a host of relative asset prices and real wealth which would ultimately affect aggregate expenditure and output. The transmission mechanism in this case can take place through stock prices and might impact investment and consumption. Tobin (1969) provides an explanation via his *q theory* on how monetary policy can affect the economy through its effects on value of stocks. Tobin defines  $q$  as the market value of firms divided by the replacement cost of capital. When  $q$  is high firms would find replacement cost of capital cheaper relative to its value. Thus, it would help them acquire new equity funds, with a higher price for it, relative to buying the equipment. Therefore, investment spending would go up leading to an increase in aggregate output. Now monetary policy can affect stock prices in two ways. The Monetarist explanation is that contractionary

monetary policy would cause the public to decrease spending on stocks as they are short of money and require to reduce their expenditure. Thus, stock prices would fall, and business investment would go down via Tobin's q theory of investment. On the other hand, the Keynesian argument explains that contractionary monetary policy would attract more spending on bonds due to higher interest rate returns compared to stocks. The substitution effect would cause demand for stocks to go down and stock prices would fall. This again helps explain why investment would fall via Tobin's q theory.

The *wealth effect channel* affecting consumption is based on the seminal work of Modigliani (1971) which states that the life-time resources of consumers determine consumption spending. One such resource is financial wealth which is comprised of common stocks. When stock prices fall, due to tight monetary policy as explained above, consumers' financial wealth decreases which in turn reduces consumption spending. As a result, output would fall. Similar to the effects on stocks, tight monetary policy can reduce the value of land and property, causing households' wealth to fall and thus consumption expenditure may fall, leading to reduction in output and inflationary pressure.

The *credit channel* is understood via two ways – the bank lending channel and the balance sheet channel. In this connection, Bernanke and Gertler (1995) point out the role asymmetric information plays in explaining the MTM. The bank lending channel explains that contractionary monetary policy leading to a credit crunch would cause bank deposits to go down and thus banks would be able to provide less loans to businesses. This may lead to fall in investment and therefore, both output and inflation may go down. The credit crunch and fewer number, and amount of bank loans, would affect mostly small businesses as big businesses have alternative sources of funds via issuing stocks and bonds. Besides, banks are specialised in dealing with small firms where information asymmetry is more prominent.

The *balance sheet channel* explains that when tight monetary policy is pursued, prices of equity fall (as explained earlier), leading to a decline in firms' net worth. Lower net worth would raise both adverse selection (pre-transaction information asymmetry) and moral hazard (post-transaction information asymmetry) problems. Lenders would be reluctant to lend money to businesses as they would be concerned about the default risk associated with low net worth firms (adverse selection problem). Besides, lower net worth firms might engage in risky investment projects with the loan, thus potential lenders might think that they may not get their money back (moral hazard problem). Taken together, this would cause lending to fall, leading



to a decline in investment and output. Higher interest rate can also have an adverse effect on firm's balance sheet by lowering net cash flow, thus lowering its ability to acquire loans and make investments.

The above discussion explains the lending effect of the balance sheet channel. It may also have a spending effect (liquidity view). This effect focuses on the consumers' interest to spend rather than lenders' interest to lend. It explains that during tight monetary control, financial assets decline (as explained above) and the likelihood of financial distress increases. Under such circumstances, consumers would be less willing to hold illiquid assets such as durables and housing. Therefore, consumption spending would fall leading to a fall in output.

Finally, one would observe communication and expectations channel in a market-oriented economy (Mohan and Patra, 2009). The idea is that well-informed market participants can improve and ensure well-functioning of the markets. This is believed to be best achieved by central bank conveying the useful information to the market participants. The credibility of the central bank increases when it is independent, devoid of any adverse influence from the political parties and governments.

Mohsin Khan (Khan, 2010) argues that the credit channel is more important for developing countries and central banks can use monetary policy via changes to the credit restrictions forcing banks to reduce their loans and securities.

The above discussion presents the arguments for how restrictive monetary policy would lead to a fall in aggregate demand and hence lead to lower rates of inflation. However, would agents respond to a stimulus in an asymmetric fashion to monetary policy? Would a loose monetary policy lead to increasing aggregate demand and hence increasing levels of investment? If so, that could lead to faster growth in the economy. Of course, the policy makers argue that restrictive monetary policy would lead to a lower and less volatile inflation rate that would eventually encourage more confidence and hence higher rates of investment. This would require a study of investment behaviour that permits long lags between the changes in interest rates and inflation rates. In our view, this has not been demonstrated in the literature. Even the IMF (2015) states that "monetary policy is ultimately limited in its ability to directly influence real variables in the long-term (such as output growth) and is instead most effective in providing a nominal anchor." (p. 8)

### 3.2 Monetary Policy and Growth in Developing Countries

Developing countries have followed different types of monetary policies to help growth and development. Some have targeted money supply variables but increasingly this has been abandoned, as it was realised that money supply was often an endogenous variable and hence difficult to control. Some countries have followed inflation targeting (IT) policies, usually in combination with an independent central bank. With flexible exchange rates a country has the ability to have an independent monetary policy. Some countries have manipulated the nominal exchange rate with an aim to target aggregate demand via its external sector. Increasingly, the external sector has become more significant in helping economic development in a globalised world economy.<sup>12</sup> It is becoming increasingly common for countries to use as a nominal anchor the inflation rate.

The above theoretical explanations on how well MTM works depend on a number of factors in practice. A key to a successful monetary transmission mechanism is the existence of a well-functioning monetary economy with money being used as a means of exchange for transactions, an asset for saving, a vibrant banking sector with most consumers, producers and firms with banking accounts. Other important factors include a strong institutional environment to ensure that loan contracts are protected, existence of a formal financial system, an independent central bank, well-functioning and very liquid interbank market for reserves as well as secondary markets for government securities and equities and real estate, limited control on international capital movements, and a flexible exchange rate regime. Since the effectiveness of monetary policy in influencing output via the transmission mechanism is dependent on these assumptions, a valid question is to ask whether these conditions are met in developing countries. Mishra et al. (2012, p. 278-279) show that “these conditions are rarely satisfied in [developing countries]...[raising] doubts about the relevance of the standard description of monetary transmission for such countries.” Published by the IMF, this article identifies a number of characteristics which deviate from the assumptions stated above.

In developing countries, a significant number of transactions may be made outside the formal financial system via informal finances involving transactions between related parties, through money-lenders or through informal credit cooperatives. Indeed, the fact that formal financial sector is small and comprises a minor fraction of total domestic financial intermediation in the

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<sup>12</sup> See Chapter 2, World Economic Outlook 2017 (p. 88).

developing countries is evident from small ratios of deposit money bank assets to GDP and of nonbank financial intermediary assets to GDP, as listed above in Tables 2a and 2b. Therefore, one can expect that effects of monetary policy on formal financial sector variables (such as bank loan rates) would have a weaker impact on aggregate demand and thus on output and inflation as opposed to a case where a formal financial sector is dominant.

Central banks face more problems in developing countries as they have less access to timely data and deal with economies where money plays a smaller role in the economy. Hence monetary policy has a limited role (i.e. communications and expectations channel) in line with the mainstream prescription which states central banks should have credibility and transparency<sup>13</sup>. As discussed in IMF (2015) *Evolving Monetary Policy Frameworks in Low-Income and Other Countries*, “[T]he policy horizon in most LLMICs [Low income and Lower Middle Income Countries] is often very short.” (p. 11) “[T]he presence of fiscal dominance undermines the central bank’s control of inflation.” (p. 19). Further, “money demand shocks can create noisy and uninformative interest rate movements” (p. 16). It is also argued that “[S]ome central banks are constrained by a weak balance sheet, potentially posing a challenge to their operational independence.” (p. 18). It is also argued that “most LLMIC central banks do not have an effective framework for formulating and implementing policy.” (p. 15) *In other words, Central Bank Independence is limited*, and its operation is not always well managed.

Recent developments in India where the Governor of the Reserve Bank of India, Dr. Raghuram Rajan, left and has criticised the Indian Government for “interfering” with the Bank’s policies (Mundy, 2018). His governorship came to a sudden end due to a conflict with the government. A subsequent appointee, Dr. Urjit Patel has also resigned because of a conflict with the Government. This raises a question about the independence of the Reserve Bank of India.

Mishra et al. (2012) recognise a number of other impediments whereby MTM may not work effectively as theory explains. For instance, the complete absence or poor development of domestic securities markets which indicates that the interest rate channel is weak; the asset channels are weak because of small and illiquid markets for equity and real estate markets; the exchange rate channel is weak due to reliance on fixed exchange rate regime and domestic

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<sup>13</sup> Mohsin Khan states “will address the issue of dynamic inconsistency, which is especially important for low-income countries because of the existence of weak institutions and low credibility of central banks.” KHAN, M. S. 2010. *The Design and Effects of Monetary Policy in Sub-Saharan African Countries*. In: ECONOMICS, P. I. O. I. (ed.). Washington DC.

market is imperfectly integrated with international financial markets leading to imperfect mobility of capital flow. The paper suggests that bank lending channel is “the most viable general mode for monetary transmission in [developing countries].” (ibid p. 288). One limitation of this article is that it relies on correlation analysis to determine the transmission channel which provides little evidence on the direction of causality. Besides, the regression analyses do not seem to take endogeneity or reverse causality issues into consideration.

In IMF (2015b), various country experiences are listed showing the role of monetary policy in controlling inflation, but not necessarily on its effect on output, employment, or economic growth (IMF, 2015b). For example, it discusses monetary policy and inflation for Ghana, a Sub-Saharan African (SSA) large economy, and finds that Inflation Targeting (which commenced in 2007) had a mixed result (and inflation rates were often above target levels). In particular, in the early stages of implementing IT there was a huge surge in commodity prices raising inflation that only came down after the Global Financial Crisis and the IMF supported program. This report also suggests that the Bank of Ghana needs further strengthening of its independence from fiscal pressures. In Uganda, another SSA, monetary policy evolved from a strict monetary targeting regime to a more flexible form until it transitioned to an IT system in 2011 but also intervened in the foreign exchange markets. Inflation rate volatility was the result of a “passthrough from the exchange rate, agricultural supply shocks, and domestic demand factors”, (p. 36). As mentioned earlier, these studies focussed simply on monetary policy and inflation, but not about the link between monetary policy and *growth* of GDP or employment.

In an interesting “narrative” paper (Berg et al., 2013) on Transmission Mechanism in the Tropics (Kenya, Uganda, Tanzania, and Rwanda) argue that a tightening of the interest rate led to other interest rate increases and appreciation of the exchange rate which led to a fall in output and hence inflation. They argue that the degree of the transmission mechanism does not depend on the level of financial development (which is surprising)! The paper states that all four countries policy objective was price stability and had a common IT of 5 %. (p. 17). (Berg et al., 2013). It argues that the transmission mechanism is alive and well in the Tropics. Although this narrative approach may provide suggestions to applied econometric researchers, these results are simply suggestive. Formal econometric models are required to analyse such relationships.

### 3.2.1 Econometric studies of monetary policy in developing countries

We now turn our attention to investigate some of the empirical literature to find out whether indeed the effectiveness of various channels of MTM is weak in cross-country and country-specific context which would help us shed some light on the potency of monetary policy in influencing output of the developing countries. We notice that empirical literature also pays attention to methodological issues such as how best to capture the evidence related to the effectiveness of monetary policy innovations including the identification of shocks and exploring the transmission channels.

While studying the interest rate channel through which policy innovations affect output and prices, empirical literature relies on IS-LM and Vector Autoregressive (VAR) models originally proposed by Sims (1972) and Christiano et al. (1999). Debates exist as to what factor or a combination of factors such as sticky prices, sticky wages, and imperfect competition, explain the real effect on output. Studies such as Cecchetti (1995) and Grilli and Roubini (1995) note that changes in policy rates are important only when they affect aggregate outcomes through private investment and with no distributional effects on economic agents. Moreover, the credit view, i.e. the bank lending channel, pays attention to the distributional effects of monetary policy, differentiating the impact on individual agents' creditworthiness from the feasibility of investment projects. Studies investigating exchange rate channel in the context of developing countries include Cushman and Zha (1995). On the other hand, asset prices in the monetary policy reaction function are examined in studies such as Bernanke, Gertler, and Gilchrist (1994), Carlstrom and Fuerst (1997), and Gilchrist and Saito (2006).

One important characteristic of the developing countries is that its banks are dominant formal financial intermediaries (suggesting that bank lending channel should be the main vehicle for MTM as identified by Mishra et al. (2012), although the formal financial system appears to be relatively small compared to the size of the economy. The rigidities may limit the effectiveness of bank lending in servicing the economy's demand for capital. Moreover, there exist tight controls over capital flows and central bank intervention on foreign exchange markets. As a result, these countries have imperfect links with the private international capital markets<sup>14</sup> as investigated by the studies such as (Mishra et al., 2012), (Mishra and Montiel, 2012). The decision-making process by private agents is restricted by imperfect signals in the term

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<sup>14</sup> Highlighted as the core problem by the monetary authorities and empirical studies.

structure of interest rates and in the money and capital markets. In addition, a lack of competition hinders the effectiveness of the bank lending channel.

In a country-specific context, Ghazanchyan (2014) examines the channels through which innovations to policy variables – policy rates or monetary aggregates – affect macroeconomic variables such as output and inflation in Sri Lanka. Within a VAR framework and using impulse response functions, the effectiveness of monetary policy is assessed through conventional policy channels, i.e. money/interest rate, bank lending, exchange rate, and asset price channels. The author uses quarterly seasonally adjusted data from 2000Q1 to 2013Q3, taking advantage of producing reasonable sample sizes based on relatively short time spans. The findings of the study suggest that the interest rate channel has the strongest Granger effect on output with a 0.6 per cent decrease in output after the second quarter and a cumulative 0.5 per cent decline within a three-year period in response to innovations in the policy rate. It also finds that bank lending channel has a significant contribution in affecting both output and prices but with a lag of about five quarters for output and longer for prices. Finally, there is no empirical evidence of exchange rate and asset price channels having a Granger effect on output and prices in Sri Lanka.

The above study reveals a number of stylised facts in the case of Sri Lanka which could be relevant for countries with similar development characteristics. A summary of this is as follows. The presence of “excess liquidity can interfere with monetary policy transmission. Excess liquidity inhibits the pass-through from policy rate adjustments to bank lending because the marginal increase in the policy rate may not be effective in forcing banks to raise their lending rate. For instance, in Sri Lanka the ratio of bank loans to GDP has not changed significantly during the period 1999-2014.

Bank’s asset composition is also an important factor. Its shift from loans to liquid assets (securities) impedes an effective response from the banking sector to monetary policy signals. The lack of private sector demand for loans is a contributing factor for banks not choosing lending at higher rates and instead maintaining higher levels of government securities and thus leading to a situation of “excess liquidity”.

The correlation between central bank policy actions and money market and bank lending and deposit rates in Sri Lanka is weak. High volatility in call money market rates can be a contributing factor for this. Evidence suggests that both money market and lending and deposits rates react slowly to policy changes, thus impeding an effective MTM. For example, an

increase in the policy rate by one percentage point increases the money market rate by only 0.35 percentage point, and an increase in the money market rate by one percentage point increases lending and deposit rates by only 0.68 and 0.19 percentage point, respectively.

To address the weakness of the bank lending channel as well as to increase the short-run pass-through between the policy rates and market and lending rates, the study Ghazanchayan (2014) recommends a more competitive banking system. In order to ensure this, a more developed capital market is required which would ensure an alternative source of financing. The role of state banks in the financial system should be reduced to avoid any fallout associated with state banking including lack of trust in transparency. The study also suggests ways to link bank financing with the real economy.

To address the ineffectiveness of exchange rate channel, the suggestion is to create a more flexible foreign exchange market, limiting the intervention to focus on smoothing excessive fluctuations in the currency. A greater degree of capital mobility and greater foreign participation in domestic secondary securities and deposits markets are suggested. A competitive export base would also increase the value added of the exchange rate channel.

In order to make the asset channel more operational, institutional reforms are required to increase transparency and entry into equity and property markets for both residents and non-residents. This would help decrease the dependency on bank financing since more active participation of economic agents in the asset markets would help grow non-banking assets as a proportion of their total wealth. The market allocation of wealth would be more efficient as asset price channel works better and it would help sustain the efficiency of the transmission mechanism.

The significant real effect of bank lending in developing countries is supported by (Abuka et al., 2015) which carries out its investigation in Uganda using quarterly data between 2010Q3 and 2014Q2 and within a panel regression framework. It examines the hypothesis that the transmission of monetary policy to credit aggregates and the real economy can be impaired by weaknesses in the contracting environment, shallow financial markets, and a concentrated banking system. Their findings suggest that an increase in interest rates reduces the supply of bank credit both on the extensive and intensive margins, and there is significant pass-through to retail lending rates.

In the context of Morocco, Benlamine et al. (2018) test impulse responses to three positive monetary policy relevant shocks: to aggregate demand, prices, and exchange rate (devaluation).

Their results show a positive shock to household consumption stimulates aggregate demand and creates inflationary pressure.

Monetary policy affects both credit supply and bank soundness thus affecting the entire environment in which the regulator operates. In a theoretical article, Agur and Demertzis (2015) posit that the policy rate affects bank risk taking incentives in two ways: directly through profits (profit effects) and indirectly through debt (leverage effect). An empirical study investigating the credit channel of monetary policy transmission is Das (2015) which finds significant but slow pass-through of policy rate changes to bank interest rates in India. The author uses a stepwise vector error correction model using monthly data for the period 2002:m3-2014:m10. The study also finds that adjustments to monetary policy is also asymmetric i.e. lending rate adjusts more quickly to monetary tightening than to loosening. Moreover, the speed of adjustment of deposit and lending rates to changes in the policy rate has increased in recent years, the study suggests.

Within a small New-Keynesian FPAS (forecasting and policy analysis system) model Dizioli and Schmittmann (2015) derive an optimal monetary policy rule that minimises variability of output, inflation, and exchange rates in Vietnam. Empirical method of the study includes Bayesian estimation techniques using annual data between 2000 and 2014. An important finding is that its optimal rule model places a larger weight on output stabilization as the intermediate target to achieve inflation stability (in addition to allowing greater exchange rate flexibility). Currently in Vietnam as the paper suggests, monetary policy is anchored around exchange rate stability as the intermediate target to achieve price stability. Under cases of shock, the authors suggest that this model of monetary policy rule delivers greater macroeconomic stability for the country. In addition, the baseline parameterization fits the actual data closely and performs well in within-sample forecasts.

Ahmed and Islam (2004) empirically investigate whether bank lending and exchange rate channels exist in Bangladesh through which monetary policy changes can influence aggregate output and prices. Using VAR approach and quarterly data for the period between July-September 1979 and April-June 2005, the authors show that both channels are weak in Bangladesh. The results are not surprising particularly for the period investigated as impact of openness of Bangladesh economy and development of financial sector is felt at a much later period of time. One methodological problem with the article is that application of VAR creates possible losses of degrees of freedom when more lagged variables are included in the



regressions. Besides, most of the impulse responses depicted in the paper suffer from a lack of significance as noted from the confidence intervals.

In a cross-country setting Primus (2016) examines the relative effectiveness of the use of indirect and direct monetary policy instruments in Barbados, Jamaica, and Trinidad and Tobago. The study employs a restricted Vector Autoregressive model with Exogenous variables (VARX). The underlying assumption of the paper is that the central bank conducts monetary policy using a Taylor-type rule and it evaluates the effects of a reserve requirement policy. The results show that although a positive shock to the policy interest rate has a direct effect on commercial banks' interest rates, there is weak transmission to the real variables. Moreover, an increase in the required reserve ratio is successful in reducing private sector credit and excess reserves, while at the same time alleviating pressures on the exchange rate. The findings, therefore, indicate that central banks in small open economies should consider using reserve requirements as a complement to interest rate policy, to achieve their macroeconomic objectives.

In a recent panel study, Choi et al. (2018) test the claim that low inflation and anchoring of inflation expectations are good for economic growth. Their empirical investigation employs panel IV estimations technique using panel data on sectoral growth for 22 manufacturing industries for 36 advanced and emerging market economies over the period 1990-2014. The paper uses as a dependent variable the average industry growth rate over the period 1990-2014 as a function of the share of each industry in total manufacturing output in 1990, and a measure of "inflation anchoring". The findings from the research reveal that credit constrained industries – those characterised by high external financial dependence and R&D intensity and low asset tangibility – tend to grow faster in countries with well-anchored inflation expectations. *The authors suggest that it is inflation anchoring and not the level of inflation, itself, which has a significant effect on average industry growth.*

The above paper in line with Levin et al. (2004) defines inflation anchoring in each country as the response of inflation expectations to inflation surprises. Although the main focus of the inquiry is that "volatility in the economic environment-caused by policies or shocks – is particularly harmful to growth for those firms and industries that are credit constrained..." (p.4), the paper only focuses on inflation expectations as capturing this volatility. This poses a limitation on the measure of inflation anchor since the data include the period of the Great Recession. Besides, uncertainty affects different industries differently, for example, traded

versus non-traded goods. The paper also assumes that the firms form expectations about inflation based on the Consensus Economics forecasts. Perhaps this is applicable for large manufacturing firms, but one may doubt if small corporations would have that knowledge. We suspect that the results might differ if we split the sample into manufacturing industries that are highly concentrated versus the rest.

We recognise a few issues while critically reviewing the methodology used by the empirical literature. One important aspect is that sampling frequency is of great importance while studying the co-movement between macroeconomic variables. In fact, in a seminal work Robert Lucas Jr (1980) highlights the importance of the sampling frequency when examining the relationship between money growth and inflation. Results may vary if one changes the frequency within a time domain. None of the empirical studies investigated above seems to have addressed this issue well. The other important issue is the use of fixed effects (FE) panel regression models. It is a static model and cannot capture the dynamic effects which can be achieved by incorporating a lagged dependent variable as a regressor. FE models provide biased estimates if a lagged dependent variable is included in the regression. Besides, dynamic models such as System Generalised Method of Moment (GMM) are better equipped to take care of endogeneity issues.

In sum, we notice that the empirical literature investigating the different channels of monetary transmission mechanism in developing countries is scant. Given the empirical studies we have examined, we find some evidence of interest rate channel and bank lending channel being effective. It is no surprise that overall the monetary transmission mechanism is not very strong due to the characteristics and the structure of economies in the developing world. For instance, the existence of a large informal financial sector and underdeveloped financial markets are responsible for weak interest rate and bank lending channel effects.

Inevitably, the lack of presence of a strong private sector including a formal financial system requires government to use its fiscal policy to carry out necessary development programmes in these countries. Under such circumstances, targeting too low an inflation rate may increase the real cost of government borrowing. Moderate inflation in the developing countries, therefore, may ease the debt burden of the government and help continue with its pro-poor programmes. We would examine the experiences of inflation targeting in developing countries in the following section. In addition, the mainstream view suggests that developing countries should pursue policies towards more openness, allowing more integration with foreign financial

markets thus ensure more free flow of capital, and a flexible exchange rate system. However, Obstfeld (2009, p.63) argues that this stance on openness and states that there is “strikingly little convincing documentation of direct positive impacts of financial opening on the economic welfare levels or growth rates of developing countries...[as well as] little systematic evidence that financial opening raises welfare indirectly by promoting collateral reforms of economic institutions or policies.” The author notes that opening of financial accounts appears to increase the frequency and severity of economic crisis. Evidence from the Asian currency crisis of 1996-1997 shows that there can be a capital flight from the developing countries in the event of a crisis. It can have dire consequences on poverty and income inequality in developing countries.<sup>15</sup>

*The above discussion sheds doubt about the effectiveness of monetary policy in generating output growth and thus employment in the developing areas.* Theoretically the evidence is weak because of the structural reasons that persist in these countries. Empirical evidence also does not provide strong support on this.

### **3.3. Inflation Targeting and Growth in Developing Countries**

In recent years there has been a significant controversy about the role of Inflation Targeting (IT) and economic growth in developing countries. Inflation targeting by Central Banks has been suggested by international bodies as a means to helping economic growth and development. However, as discussed above monetary policy may help in reducing fluctuations in output (stabilisation policy) but may not help long term economic growth. As (Svensson, 2002) argues:

*“In the long term, monetary policy can only control nominal variables such as inflation and the exchange rate. In the long term, monetary policy cannot increase the average level or growth rate of real variables such as GDP and employment, or affect the average level of the real exchange rate...Nevertheless, monetary policy can affect the variability of real variables...”*

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<sup>15</sup> See Basu and Stiglitz (2016a) and (2016b)

**Table 3: Inflation targeting in developing and transition economies**

Country	Year of IT adoption	Inflation rate at the time of adoption (%)	Inflation target for 2018 (%)
1. Czech Republic	1997	8.57	2.0 (+/- 1.0)
2. Poland	1998	11.65	2.5 (+/- 1.0)
3. Brazil	1999	953.4	4.5 (+/- 1.5)
4. Colombia	1999	24.1	3.0 (+/- 1.0)
5. Romania	2000	46.1	2.5 (+/- 1.0)
6. South Africa	2000	9.9	3.0-6.0
7. Thailand	2000	5.0	2.5 (+/- 1.5)
8. Hungary	2001	20.3	3.0 (+/- 1.0)
9. Mexico	2001	19.7	3.0 (+/- 1.0)
10. Peru	2002	19.4	2.0 (+/- 1.0)
11. Guatemala	2005	7.5	4.0 (+/- 1.0)
12. Indonesia	2005	14.2	4.0 (+/- 1.0)
13. Philippines	2005	6.8	3.0 (+/- 1.0)
14. Armenia	2006	5.8	4.0 (+/- 1.5)
15. Turkey	2006	51.6	5.0 (+/- 2.0)
16. Ghana	2007	19.3	8.0 (+/- 2.0)
17. Albania	2009	3.0	3.0 (+/-1.0)
18. Georgia	2009	-2.5	5.0
19. Paraguay	2011	8.2	4.0 (+/-2.0)
20. Uganda	2011	15.0	5.0 (+/-2.0)
21. Moldova	2012	4.6	5.0 (+/- 1.5)
22. Argentina	2016	41.2	0*
23. India	2016	5.1	4.0 (+/- 2.0)

Source: (Chowdhury, 2018)

Inflation targeting has become more common since New Zealand was the first to introduce this system of monetary policy in 1990. Since then many developing countries have taken up Inflation Targeting usually with an Independent Central Bank. Inflation rates in the some of the Latin American countries were at exceptionally high levels when IT was introduced, suggesting that the policy was endogenous, a response to the high inflation rates.

Inflation targeting is defined by Svensson (2008) as:

*“[Inflation targeting] is characterised by an announced numerical inflation target, an implementation of monetary policy that gives a major role to an inflation forecast that has been called ‘inflation-forecast targeting’ and a high degree of transparency and accountability.”*

(Svensson, 2008)

As mentioned at the beginning that the tendency of macroeconomic policies in developing countries is to emphasise keeping inflation at a low single digit level and decrease its volatility. As explained in the previous discussion, the focus of policy on reining in inflation is based on the assumption that stabilisation will ultimately result in long term sustainable economic growth, employment generation, and poverty alleviation. As mentioned earlier, the IMF argues that “price stability should be the primary or overriding objective of monetary policy over the medium term” and it used to suggest an inflation target of 5 % per annum, but it has become more flexible in recent years about the inflation target.

For instance, an inflation target of 5 per cent or less was suggested to 22 out of 32 programme countries between 1995 and early 2007 (Goldsbrough et al., 2007, Table 1, p. 5). According to IMF’s Independent Evaluation Office (IEO, 2007) an inflation target of less than 5 per cent was suggested to 29 Sub-Saharan African countries during the 2000s. Generally, one would expect that the threshold levels of inflation beyond which inflation negatively affects growth vary according to the level of development. Poorer countries tend to have a higher threshold level. In an earlier study, Khan and Senhadji (2001) find that for industrial countries the threshold level is between 1 and 3 %, while for developing countries the threshold is between 11 and 12 % (Khan and Senhadji, 2001). Chowdhury and Ham (2009) (Chowdhury and Ham, 2009) show using a short time series of data for Indonesia there was a non-linear relation between inflation and economic growth: positive below about 10 % inflation and negative thereafter. In a cross-country panel study, Bick (2010) finds that the threshold is about 12% with a positive influence below that threshold and negative after the threshold.

In the wake of the Global Financial Crisis of 2007-2008 and the subsequent Great Recession of 2009-2010 it led to, we observe a rethinking about this stereotypical policy suggestion.<sup>16</sup> A former Managing Director of the IMF argued the need for a “wholesale re-examination of macroeconomic policy principles” and questioned the pre-crisis advice of “keeping inflation low and stable was the best way to secure optimal economic performance”.<sup>17</sup> In addition, a former Director of Research at the IMF points out that the crisis “has exposed flaws in the pre-crisis policy framework”—particularly about *one target*, that is low and stable inflation, and *one instrument*, the policy rate, to achieve it (Blanchard et al., 2010). In short, the orthodox approach sponsored by the IMF, that has narrowed the goals and tools of macroeconomic policy, has been questioned by its own key figures within the organisation.<sup>18</sup>

We now investigate the empirical literature to find out the evidence in relation to inflation targeting (IT) monetary policy in developing countries. We start by looking at some country-specific studies to evaluate the case of IT. For instance, Jha (2008) states that in the presence of widespread poverty the objective of monetary policy cannot be exclusively inflation control. The article evaluates the case for IT in India. Jha argues that poverty and its alleviation should be the “cornerstone of success of any policy” in a country which has a long-standing problem of poverty. He believes “higher economic growth along with some supporting redistribution measures” can play a crucial role in reducing poverty. Crucially, Jha (2008) notes that the rate of poverty reduction was higher in the 1980s compared to the reform period of post 1991.<sup>19</sup>

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<sup>16</sup> There has been in fact a triple crises, energy and food price shocks included, as noted by Chowdhury and Islam CHOWDHURY, A. & ISLAM, I. 2010. Rethinking Macroeconomics from the Perspective of the Millennium Development Goals in the Post-Crisis Era. *A commentary in the Vox-EU Debate on the Global Crisis - Development and the Crisis.*, due to oil price shock of 2007 and international food price hike around that time. As developing countries are particularly prone to such supply shocks it is important to take this into consideration as well.

<sup>17</sup> See the opening remarks by Dominique Strauss-Kahn, at the IMF conference on ‘Macro and Growth Policies in the Wake of the Crisis’, Washington D.C., March 7, 2011, available via the internet at <http://www.imf.org/external>

<sup>18</sup> In fact, raising the concern about the IMF’s international monetarism approach that is not explicitly concerned about economic growth (see Fischer FISCHER, S. 1987. Economic growth and economic policy. *In: CORBO, V., GOLDSTEIN, M. & KHAN, M. (eds.) Growth-Oriented Adjustment Programs.* Washington DC: The International Monetary Fund and the World Bank. and Fasano-Filho FASANO-FILHO, U. 1996. Economic policy making in Sub-Saharan Africa and IMF involvement. *The Quarterly Review of Economics and Finance*, 36, 115 - 151.), is not new. In the mid-1990s the then Managing Director urged that the IMF should help its member countries to achieve conditions for high quality growth that brings lasting full employment and poverty reduction *ibid.*. In 1999, the IMF launched the Poverty Reduction and Growth Facility (PRGF) the objective of which was to make poverty reduction and growth more central to lending operations in its poorest member countries SELASSIE, A. A., CLEMENTS, B., TAREQ, S., MARTIJN, J. K. & DI BELLA, G. 2006. Designing monetary and fiscal policy in low-income countries. *IMF Occasional Paper*, i - 69.. Nevertheless, the basic assumption that stable and low single digit inflation is both necessary and sufficient conditions persisted in the IMF’s policy advice.

<sup>19</sup> India suffered a balance of payment crisis in 1991.

Although the trend has been reversed later, he believes that there exists enough scope for poverty reduction through higher growth. A rapid reduction in poverty in India is attainable through a sustained economic growth of 8 per cent (Jha, 2008, p. 260). The two important issues that monetary policy should address in this regard are interest rate and exchange rates. Jha (2008) suggests that low interest rate, to generate investment, and a slightly undervalued exchange rate with low volatility, to boost exports, are critical to sustaining high growth rates (p. 260).

Jha (2008) also argues that the rationale for IT is incomplete in India. There is evidence of sacrifice in terms of output loss resulting from pursuing IT. Output movements in transition countries adopting IT have been higher than in developed market economies, Jha notes. Therefore, following the footsteps of the developed countries in pursuing IT cannot be justified. In addition, he argues that although IT may have been responsible for maintaining a low inflation regime, it has not brought down the inflation rate itself substantially or changed the volatility of the exchange rate.

The potency of monetary policy in targeting inflation is also questioned by Jha (2008). He identifies price level stabilisation as an overriding short-term concern of monetary policy in India. However, the causality tests show that short term interest rate – the key instrument with which monetary policy targets inflation – does not have a significant effect on inflation.<sup>20</sup> Therefore, Jha (2008) concludes that the central bank of India could not implement IT effectively even if it wants to. The reason behind this result, Jha (2008) argues, is that monetary policy in India is constrained by a number of issues, such as incomplete liberalisation of financial markets. The interest rate transmission channel is incomplete due to these limitations. Because financial market liberalisation is not complete strong monopoly elements still exist in the banking system. Mishra and Mishra (2012a, p. 1053) also point out that financial markets in India are still not sufficiently integrated to ensure quick transmission of interest rate impulses (supported by low sensitivity of demand) and there are still rigidities in the economy, as indicated by a flat Phillips curve. In the presence of such anomalies Jha (2008) supports the multiple indicator approach of monetary policy adopted by the Reserve Bank of India in April

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<sup>20</sup> Granger causality tests indicate a weak relation between call money rate and measures of inflation. Empirical investigation of the paper raises a question though. Call money rate is found to be I(1), a non-stationary series possessing unit root. In a finite sample (April, 1992 – March, 1998) it is unusual that the rate has unit root.

1998.<sup>21</sup> Such policy direction, as he suggests, would help maintain stable interest and inflation rates and a slightly undervalued currency in order to promote higher export led growth.

The above discussion reveals why rule-based interest rate policy, particularly of Taylor type, may not be efficient to stabilise a developing economy. This is also supported by Mishra and Mishra (2012a). The study attempts to answer the question of the probable consequences of shifting to an inflation targeting framework of monetary policy and how different shocks will affect the economy under such framework. It uses a general linear model of the economy with a quadratic loss function to be minimised by the central bank for India. The results of the study indicate a short run trade-off between inflation and output because of the presence of rigidities in the price setting behaviour. Considering the above results, they suggest that flexible domestic inflation targeting and discretionary optimisation in monetary policy would work better for economic stabilisation in India.

However, in another study, Mishra and Mishra (2012b) suggest that the IT framework helps achieve better monetary management. They build a short run comprehensive VAR model of monetary policy for the Indian economy to examine a hypothetical inflation targeting monetary policy regime.<sup>22</sup> The authors note that the multiple indicator approach of monetary policy is not efficient because “the multiplicity of objectives leads to inherent conflict among such objectives ... in particular between exchange rate stabilization and inflation stabilization” (p. 87). It creates confusion in the market which remains unsure of which variable the central bank will choose to defend.

The empirical estimation of Mishra and Mishra (2012b) is based on two models. First a benchmark case is constructed in line with the multiple indicator approach currently practised by the central bank of India. In this case, the monetary policy instrument is set after looking at current values of inflation, output, and exchange rate. The second model is a pure inflation targeting case. Here, monetary policy instruments are allowed to react to inflation only contemporaneously. The results suggest that demand effects of changes in interest rate are

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<sup>21</sup> The key objectives of this policy include (1) a stable inflation environment, (2) appropriate liquidity condition to support higher economic growth, (3) orderly conditions in the exchange rate market to avoid excessive volatility in exchange rate, and (4) stable interest rates RBI 2002. *Reserve Bank of India Bulletin*, Mumbai, Reserve Bank of India..

<sup>22</sup> The study is an extension of their work, Mishra and Mishra MISHRA, A. & MISHRA, V. 2009. Preconditions for inflation targeting in an emerging economy: the case of India. *Monash University Development Research Unit Discussion Paper*, 1-32., in which they suggest that the Indian economy satisfies the preconditions for inflation targeting.



stronger than exchange rate effects. The increase in interest rate (or negative monetary shocks) does not appreciate the exchange rate as much in the inflation targeting scenario as in the benchmark case. This helps mitigate the potential conflict between exchange rate and interest rate, one of the main monetary policy dilemmas in inflation targeting, as the study suggests. However, the interpretation is not consistent with the results presented in their study. The impulse response functions under both baseline and inflation targeting models (see Figure 1 and 2, p. 93 and p. 95, respectively) show an important fact. Of the five variables – inflation, output gap, nominal effective exchange rate, growth in bank credit, and money supply growth – on which response of call money rate shock is tested, only the response in growth in bank credit appears to be significant. None of the responses in other variables appear significant. In short, interest rate does not appear to be effective in controlling inflation. This is consistent with the conclusion drawn by Jha (2008) which also finds interest rate being ineffective in creating a response to inflation in India.

Monetary policy in developing countries grapples with the dilemma relating to inflation, interest rate, and exchange rate, as mentioned above. This is evident in the case of Indonesia and Thailand as noted in Siregar and Goo (2010). In the case of Thailand, the monetary authority shifted to a *full IT rule* from the *IT framework* – defined as a flexible approach to the IT policy, during the volatile period. As for Indonesia, managing exchange rate volatility continues to be one of the objectives of interest rate policy in addition to anchoring inflationary expectation. Siregar and Goo (2010) evaluate the overall performance of the IT regime adopted by Indonesia and Thailand after the Asian Currency Crisis 1997-98. The results demonstrate that the IT regime in these two economies has had some success, but not during the immediate aftermath of the Lehman Brothers' collapse in 2008, in the run up to the global financial crisis and the Great Recession. Their test results seem to suggest that during the volatile period, covering the era of Asian Currency Crisis 1997-98 and its aftermath and the Global Financial Crisis 2007-08, the output gap did not significantly influence the interest rate policy of both Bank of Indonesia and Bank of Thailand.

Siregar and Goo (2010) also note that there seems to be no trade-off between inflation and economic growth, covering monthly data for the two periods – two years before and after the implementation of IT. The average GDP growth rates as they note of Indonesia and Thailand after two years of implementing IT were significantly higher and less volatile (smaller standard deviations) than the rates in two years prior to IT. These results, however, do not seem to be consistent with the descriptive statistics using annual data presented in Table 3. To test the

validity of the claims made by Siregar and Goo (2010), Table 3 presents some descriptive statistics (5-year averages) from two periods. The two periods are 1992–96 and 2002–06, pre and post IT-start in the two countries.<sup>23</sup> A five-year period average is considered, assuming that it will reasonably capture the effects. The turbulent periods of Asian Currency Crisis (1997-98), Global Financial Crisis (2007-08) and the Great Recession (2008-09) are omitted to avoid any outlier effects.

**Table 4: Inflation and Growth Statistics in Indonesia and Thailand Pre and Post IT Implementation**

Country	Statistics	1992 – 1996 (5 year average)		2002 – 2006 (5 year average)	
		Inflation	Growth	Inflation	Growth
Indonesia	Mean	8.63	7.33	9.65	4.97
	SD	0.92	0.44	3.11	0.47
	CV	0.11	0.06	0.32	0.09
Thailand	Mean	4.82	7.78	2.89	5.54
	SD	1.09	1.23	1.72	0.97
	CV	0.23	0.16	0.60	0.18

Source: Muzaffar (2013).

The superior growth performance after the implementation of IT in Indonesia and Thailand as claimed by Siregar and Goo (2010) does not seem to be valid when we analyse the growth averages using annual data.<sup>24</sup> Growth rates in both countries are less in the post IT period. In Indonesia, it has gone down from 7.33 per cent to 4.97 per cent while in Thailand, the figure drops from 7.78 per cent to 5.54 per cent (Table 4). Coefficient of variation, which is a better measure of volatility in variables compared to standard deviation, shows similar results. Output growth volatility has gone up in both countries in the post IT era (see Table 4). Although the mean inflation has dropped in Thailand in the post IT era, the same did not happen in Indonesia. Perhaps a stricter IT rule followed by Thailand is responsible for the decline in average inflation.<sup>25</sup> Interestingly enough, IT does not seem to cause inflation volatility to go down. In

<sup>23</sup> Both countries started implementing IT in the year 2000.

<sup>24</sup> Siregar and Goo (2010) use monthly data set.

<sup>25</sup> As Siregar and Goo (2010) note that Indonesia pursued a less strict IT rule, paying attention to managing its exchange rate volatility also. Developing countries do so to maintain its competitiveness in export market. The figures of inflation target in the two countries reveal that Thailand followed a strict IT compared to Indonesia.

fact, the volatility, as measured by the coefficient of variation, has risen in both countries after the implementation of IT. In short, the statistics presented in Table 4 show a considerable loss in output (evident from declining growth rate and higher output growth volatility) after pursuing a narrow IT based policy.

Similar to Siregar and Goo (2010) a cross country study by Gerlach and Tillmann (2012) suggests that inflation persistence has declined in the economies using IT but not elsewhere. They explore how successful monetary policy incorporating inflation targeting is, in terms of bringing down persistent inflation shocks, in a sample of economies in Asia-Pacific. For the purposes of comparison, the sample includes countries practising IT, such as Indonesia, Philippines, and Thailand (among others), and countries without IT, including China and Malaysia (among others). The study is motivated by the observation that the introduction of monetary policy strategies focused on achieving low and stable inflation is associated in many countries with a sharp decline in the persistence of inflation shocks. The important conclusion is that inflation targeting outperforms alternative strategies, such as exchange rate pegs and 'eclectic' strategies, when performance of monetary policy is measured in terms of inflation persistence rather than the level of inflation. Gerlach and Tillmann (2012), therefore, support that IT can successfully be adopted by emerging market economies. A significant innovation of the study is that it measures inflation persistence by the sum of the coefficients in an autoregressive representation of inflation using the median unbiased estimator developed by Hansen (1999). Thus far, as they argue, the literature on inflation persistence in emerging market countries mostly relies on OLS estimates of the AR(1) coefficient. The least squares estimate suffers from a bias as the sum of the autoregressive coefficients approaches unity. Moreover, confidence bands based on a normally distributed estimator do not have correct coverage. Gerlach and Tillmann (2012) underscore the importance of reliable confidence bands to check whether persistence falls over time. The use of Hansen's (1999) grid-bootstrap estimator solves these issues.

In the sample Asian economies, after the Asian Financial Crisis of 1997 – 1998, the drop in the persistence is particularly large in those economies that formally adopted IT as a monetary policy strategy. It is important to note from the findings of Gerlach and Tillmann (2012) that the fall in the inflation persistence is not synchronised across IT countries. Inflation persistence

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According to Table 2 (p. 115) of the paper inflation target level during the 2000s was set between 3 per cent and 10 per cent in Indonesia and between 0 and 3.5 per cent in Thailand.

in Thailand falls immediately after the new monetary regime became effective. For the Philippines, however, a substantial reduction occurs only at the end of the sample period. Likewise, persistence in inflation in Indonesia falls much later than in other countries. These facts raise a number of questions about the conclusion drawn by Gerlach and Tillmann (2012). First, even if a country follows IT the fall in persistence may take time. In that sense policies, such as higher interest rate and tighter credit control aimed at reducing the persistence, may involve a high sacrifice ratio in terms of loss in output. Secondly, one may ask how important this result is in a general macroeconomic perspective. Even though inflation has come down more rapidly in the IT countries (for instance Indonesia, Thailand, and The Philippines) their economic performance is less impressive compared to non-IT counterparts (for example China and Malaysia).<sup>26</sup> So reducing inflation persistence cannot be an end in itself. It should be a means to reach the objective of growth and economic development.

Studies also record the IT experience in Latin America. For instance, Barbosa-Filho (2008), while examining the inflation targeting experience of Brazil over the period 1999 – 2006, explains that IT was responsible for reducing inflation in the country after its 1999 and 2002 currency crises. However, this was aided by appreciating the domestic currency. Although output volatility was lower, the paper finds that economic growth was slower under inflation targeting than under exchange rate targeting. The impact of IT on growth in Mexico shows a similar experience as revealed by Galindo and Ros (2008). The study uses VAR models, using quarterly data for the period 1980-2003, and finds that although IT managed to bring down inflation, the growth performance was disappointing. Between 2001 and 2003, growth rate declined sharply and was below or slightly above the rate of population growth – a reduction in per capita income. The authors regarded the growth performance between 1994 and 2004 as unsatisfactory since the rate was below 3% which was well below the historical rates of the period 1940-1980 (6-6.5%).

In sum, the above discussion provides insights on a number of issues. There is much evidence that countries trying to keep inflation at a very low level have to make a sacrifice in terms of output growth. This is evident from higher growth volatility. Monetary policy also faces a dilemma in controlling inflation and maintaining export led growth. Tight monetary policy using higher interest rate trying to curb inflation is likely to cause appreciation of the domestic

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<sup>26</sup> Malaysia is ranked highest amongst these Asian countries according to the Human Development Index (HDI) 2011.

currency with flexible exchange rates. This negatively affects competitiveness in the international market and hampers export led growth.

The cross-country evidence on the performance of IT policy is also inconclusive. In summarising previous studies of the impact of IT on Inflation and GDP, Ayres et al (2014) provide the following table:

**Table 5: Summary of Some Previous Studies on IT**

Table 1  
Survey analysis.

Author	Methodology	Time span	Frequency	Size of sample	Impact on inflation	Impact on GDP	R <sup>2</sup> of GDP regressions
Angeriz and Arestis (2006)	SURE	1980–2004	Quarterly	10 IT	No impact	N/A	N/A
Ball and Sheridan (2005)	Diff-in-diff	1960–2000	Quarterly	7 IT, 13 non-IT	Small decline	Weak increase	.02–.23 depending on sample
Batini and Laxton (2007)	Diff-in-diff	1985–2004	Quarterly	31 countries, 21 IT, 10 non-IT	Strong decline	N/A	N/A
Brito and Bystedt (2006)	Diff-in-diff	1994–2005	Quarterly	5 IT, 8 non-IT	Strong decline	Strong increase	.12 and .28
Brito and Bystedt (2010)	OLS, fixed effects	1980–2006	3 year periods	13 IT, 33 non-IT	Weak decline	Weak increase	.15, .18, .20
Goncalves and Salles (2008)	Diff-in-diff	1980–2005	Annual	13 IT, 23, non-IT	Strong decline	N/A	N/A
Lin and Ye (2009)	Probit propensity scores	1985–2005	Annual	52 countries, 13 IT	Strong decline	N/A	N/A
Mishkin and Schmidt-Hebbel (2007)	OLS, IV	1989–2004	Quarterly	13 non-IT, 21 IT	Decline	N/A	N/A
Levin et al. (2004)	Impulse responses	1994–2003	Quarterly	5 IT, 7 non-IT	Reduces inflation persistence	N/A	N/A
Neumann and von Hagen (2002)	VARs, impulse responses	1978–2001	Monthly, quarterly	7 IT, 3 non-IT	Decline	N/A	N/A

Source: Ayres et al (2014)

This summary clearly shows that the impact of IT on Inflation is often contradictory with some studies showing that IT does lower the inflation rate but others showing a weak or negligible impact. The impact of IT on GDP is sometimes an increase but often not studied. Note that the impact is usually on the *level* of GDP not on a long run growth rate.

In more recent studies using panel data from a cross-section of developing countries we find that the impact of IT on inflation is mixed, with many studies findings that IT did not help to lower inflation rates. Some of these studies do look at the impact on output (GDP) and a few do study the impact of IT on economic growth.

In one of the few papers on IT to study the impact on economic growth, Ayres et al. (Ayres et al., 2014) estimate models to explain growth rates of real GDP in terms of a vector of lagged inflation targeting, interest rates, and lagged growth rates on a panel of data for fifty-one developing countries. Interestingly, they allow for differences between different geographic

regions. They find that inflation targeting is helpful in reducing inflation but does not stimulate economic growth. Interestingly, they find significant regional differences.

Brito and Bystedt (2010) (Brito and Bystedt, 2010) provide empirical evidence that inflation targeting regime (IT) does not improve economic performance both in terms of inflation and output growth in developing countries. Based on a panel sample of 46 developing countries, between 1980 and 2006 (curiously missing out the data from the Global Crisis even though the paper was published in 2010), the paper employs System GMM estimations and attempts to isolate the improvement in performance exclusively due to the adoption of IT from other sources, such as common time-varying effects, country fixed effects and endogeneity. Once controlled for common time effects, the authors argue that the impact of IT on inflation, inflation volatility and output growth is less negative and less significant compared to what is claimed in previous literature. *Moreover, the paper shows a reduction in output growth during adoption of IT* and costs of disinflation are not lower than that of under other monetary regimes. Some of the earlier studies such as Angeriz and Arestis (2006), Ball and Sheridan (2005), provide weak or no evidence of impact of IT on the behaviour of inflation.

Contrary to the pessimistic claims made by the above panel studies, an optimistic view, that is, IT lowers the level and volatility of inflation in developing countries, is expressed by studies such as Batini and Laxton (2007), De Mendonça and de Souza (2012), Gonçalves and Salles(2008), International Monetary Fund (IMF) (2006), Lin and Ye (2009), Mishkin and Schmidt-Hebbel (2007), Samarina and De Haan (2014), and Vega and Winkelried (2005). In a smaller sample of 8 Asian countries, Valera et al. (2017) investigate inflation behaviour through a three way approach by defining inflation target as perfect, imperfect and zero credibility over the period 1987:M1 – 2013:M11. Using quantile unit root estimations technique, the study shows that the credibility of inflation targeting and the alternative monetary policy frameworks in Asia are imperfect, except for Malaysia and South Korea under a fully-fledged adoption of inflation targeting. The authors conclude that Asian inflation targeting countries have managed to create greater monetary policy credibility than the non-inflation targeting countries in terms of faster rate of decline in inflation rate changes.

In a study to see whether IT countries fared better than non-IT countries after the Global Financial Crisis, Filho (2010) runs a series of Ordinary Least Squares (OLS) regressions using fixed and time effects to see whether there was a statistically significant difference between inflation rates, real exchange rates, interest rate spreads, unemployment rates, industrial

production, and GDP growth rates. These regressions are, in effect, simply descriptive regressions and in most cases, differences are not statistically significant. In any case the period after the GFC is very short as the data period ends in 2009 (Filho, 2010).

To summarise, some of the econometric studies of the influence of IT on inflation find that inflation rates are lower than for non-IT countries, but others find no significant impact. A few studies find that IT leads to increased volatility of output. There are a few studies that find that IT helps to increase the level of GDP and occasionally the growth rate, but others contradict this finding. Some of the contradictory results are perhaps due to differences in the samples selected (countries, time periods, frequency of observations), methods of estimation, allowing for lags since IT, and perhaps most importantly, whether the introduction of IT was treated as an exogenous or endogenous variable. As discussed earlier, as many developing countries face significant shocks from commodity prices that lead to changes in inflation rates, it is not surprising that monetary policies (including IT) are likely to have limited influence on inflation rates. In other words, panel estimation studies should control for the impact of commodity price changes<sup>27</sup>. From the perspective of this survey of monetary policy and growth it should be noted that many of these studies concentrated on the impact of IT on inflation, and sometimes on output fluctuations, but usually not on long term economic growth.

### **3.4 Inflation: Demand or Supply?**

We now turn our attention to the cause of inflation – whether it arises from demand or supply side factors – since it is important in determining monetary policy stance. In the event of a supply shock inflation which also causes a fall in output, a tight monetary policy to fight inflation may have unwarranted consequences. It may cause output to fall further, leading to rise in unemployment and poverty. With reference to India’s attempt to address recent food price inflation, a former World Bank economist Surjit Bhalla says “Let’s kill GDP, inflation will fall.”<sup>28</sup>

Lim (2008) supports the view that the inflation experience in the Philippines has been mostly a supply led and cost push phenomenon. He argues this just by using two types of supply side shocks – currency depreciation and oil price shock – one can explain practically all the above-10 per cent inflation in modern Philippine history. High inflation periods are not triggered by

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<sup>27</sup> Some studies control for only oil prices.

<sup>28</sup> Source: The Financial Express, 15 October 2011; available via the internet at <http://www.financialexpress.com/news/column-let-s-kill-gdp-inflation-will-fall/860148>

high domestic demand but by supply shocks. Lim (2008) also argues that if one uses monthly or quarterly data on inflation one will also see that agricultural price shocks make their impact on price inflation due to weather disturbances leading to food shortages. He documents that even with a lax monetary policy, lending to the private sector has not increased adequately amid fiscal difficulties; this contributes to lagging investment and employment creation. Monetary policy is not independent from the other macro sectors as well as the real and external sectors of the economy. Lim (2008) therefore proposes alternative monetary policies to IT that take into consideration the bigger and more complex role of monetary policy in an economy that requires a more development promoting programme. He argues that high liquidity and large monetary expansion in the mid-1990s did not have any impact on inflation (which remained below double digits and continued to decline until the Asian Currency Crisis 1997-98) because of the financial liberalisation. As a result of financial liberalisation the link between quantitative monetary targets and inflation had weakened. This is because of the structural breaks in the income velocity of money and volatilities and instabilities in the money multiplier.

A contrasting view of the cause of inflation is expressed by Jongwanich and Park (2009). They test whether inflation surge in developing Asia during 2007 – 2008 was primarily the result of external price factors such as oil and food shocks. Their empirical result suggests that inflation is largely home-grown and has arisen because of excess aggregate demand and inflationary expectations, rather than external price shocks. They, therefore, suggest that the monetary policy is a powerful tool in fighting inflation in Asia. This argument is based on the premise that monetary policy is potent in controlling inflation expectation regardless of the cause of it, demand pull or cost push factors. Jongwanich and Park (2009) divide the inflation drivers into cost push factors, mainly international oil and food prices, and demand-pull factors, mainly excess aggregate demand and inflation expectations proxied by output gap and lagged domestic inflation respectively. Using variance decomposition analysis they show that excess aggregate demand and inflation expectations account for much of the consumer price inflation in the nine Asian countries studied.<sup>29</sup> For instance over a year more than 20 per cent consumer price inflation variation in Indonesia and Malaysia resulted from demand pressure. Inflationary expectations explain around 60 per cent of consumer price variations in Malaysia. On average the two non-external factors jointly explain about 60 per cent of consumer price inflation in the

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<sup>29</sup> The phenomenon has a rationale which the authors have not mentioned. The rising aggregate demand makes sense since these economies are growing as they are trying to come out of the adversities of the crisis.



region as a whole. The external cost push factors, oil and food prices, on the other hand explain only around 20 per cent of the variation in consumer price inflation.

Jongwanich and Park (2009) note that the emergence of excess demand during this period was in part caused by lax monetary policy and sustained balance of payments surplus in many Asian countries. The resulting expansion of domestic liquidity helped fuel both the growth of aggregate demand and an increase in the output gap ratio. Just as importantly easy monetary policy, as evident from declining nominal lending rates, has eroded the anti-inflationary credibility of monetary authorities and thus contributed to the formation of higher inflationary expectations.

Empirical evidence on the relative importance of aggregate demand shocks over aggregate supply shocks in affecting macroeconomic fluctuations is also found in Siregar and Ward(2002). Based on an open economy model, they investigate the issue in the case of Indonesia. In an earlier study, Siregar and Ward (2001), based on a closed economy model, noted the opposite result. In Siregar and Ward (2001) the fluctuations are predominantly explained by shocks to aggregate supply with aggregate demand shocks playing a lesser role. The drawback of this study, as their later study notes, is the failure to capture the explicit transmission mechanisms for foreign shocks to affect the economy. The later study also suggests that monetary policy would not be totally effective as a measure for targeting output levels or economic growth. The results show that output effects of monetary policy shocks are small and statistically significant only in the short run. It may however, be useful in stabilising demand side variables, particularly inflation rate. The limited role of aggregate supply shocks in determining fluctuations in the variables may be a reflection of serious supply side bottlenecks in the economy. Besides, due to data limitations the study does not cover the two major oil price shocks (1973 and 1979) which had been favourable to the Indonesian economy to some extent.

Although the findings of the above studies do not put much emphasis on the impact of food and oil prices, they may have considerable effects on inflation in food and oil importing developing countries. Naranpanawa and Bandara (2012) note that oil and net food importing developing countries were severely affected by food and oil price shocks in 2007 and 2008 creating negative impact on poverty, growth, and inflation. Using simulated results they find that high oil price in Sri Lanka has led to a decline in demand for imported and domestic commodities and a fall in investment, leading to a reduction of real GDP by 3.14 per cent.

Higher oil prices in combination with associated higher import prices tend to increase cost of production leading to reduction of business profitability. In addition, this will unavoidably lead to higher inflation which will in turn lower the purchasing power of consumers. Change of prices of basic needs commodities are given by the percentage change in the poverty line which shows an increase of 1.05 per cent, thus affecting low income households adversely. Hence, reduction of business profitability, together with a sharp decline in aggregate demand results in a massive drop in employment by 5.8 per cent. Higher oil prices have fed into significant increase in domestic prices in oil importing developing countries. Therefore, many developing countries are vulnerable to the oil price shock. The results suggest that in the short run high oil prices would have an overall negative impact on Sri Lanka's economic growth and also exacerbate poverty.

In support of supply side causes of inflation, Islam (2008) notes that supply side constraints in the commodity markets in Bangladesh have instigated price hikes. He also notes that as a result of undervalued currency Bangladesh is suffering from currency induced inflation particularly in the presence of high international oil and food prices. Islam (2008) identifies the difficulty in allowing appreciation of the currency as the export sector might lose its competitiveness as a result of this. According to this study, there are both monetary and structural reasons for inflation in Bangladesh.

Siregar and Rajaguru (2005) explain that in the case of Indonesia their results robustly confirm the significant roles of expected depreciation of currency, money supply, and domestic interest rate in explaining inflation rate in the country. Among these significant factors, the test results also suggest that the base money is the most significant and persistent contributor to the substantial increase in the overall price level in Indonesia during the post crisis period. The test results also indicate that the role of money supply is the most significant one for the Indonesian case, contributing as much as 37 per cent of the variation in the inflation rate. In Thailand the role of exchange rate variable clearly dominates contributing around 9 – 23 per cent of the variation in the inflation rate. Preceding findings have suggested that while the loose management of the base money in Indonesia has been the primary cause of high and persistent inflation, the volatility of the local currency contributed the most to the price changes in Thailand during the post 1997 crisis. For example, from December 1997 to December 1998, Indonesia had expanded (year on year) its monthly base money by an average of about 75 per cent. For the same 12-month period, Thailand on the other hand had successfully tightened their monetary policy and reported a monthly average year on year contraction of base money

by around 0.35 per cent. As for Thailand weak and volatile local currency contributed significantly more to the price fluctuations than the base money.

The case of Indonesia requires some more explanation from the events that took place around that time. Excess liquidity was created in order to provide substantial support to the troubled banks. The day after the first post crisis agreement was signed with the IMF, the government of Indonesia announced the liquidation of 16 banks. It created a shock wave that resulted in a total loss of confidence in the banking system. Within a month after the announcement of the closures of 16 banks, the level of base money has grown by more than 36 per cent largely due to Bank Indonesia Liquidity Supports to troubled banks and to lessen the impact of depositor runs on banks. So, the rise in the base money was in effect an attempt to stop bank run which could have led to another crisis. One questionable issue relating to empirical investigation of the study is that it finds interest rate, both domestic and foreign, to be non-stationary. The rate variables having unit roots in a finite sample is a very unlikely case. In a finite sample such series should show mean reversion process.

There are other studies which support the view that expansionary monetary policy through rise in aggregate demand causes inflationary situation in developing countries. Ramayandi and Rosario (2010) argue that the lack of discipline in monetary policy in Indonesia is responsible for the surge in inflation rate. The expansionary monetary policy, the authors argue, led to rise in aggregate demand with a growing and unchecked private credit, all proving to be unproductive in stabilising the economy. They suggest a need for monetary policy discipline to safeguard the country's economic stability. The authors present a comparison between the actual policy rate and its benchmark path derived from an estimated policy reaction function. They notice two episodes – between 2005Q2 and 2006Q3 and between 2007Q4 and end of 2008 – when huge deviations are observed, and the actual policy rate remains below the benchmark rate. Notably inflation peaked in both cases. Output gap behaved differently in the two episodes. Within episodes 1, inflation surged about 17 per cent while there was no significant pressure observed in the output gap. In contrast, episode 2 shows that a peak in inflation was accompanied by a systematic pressure in the output gap. The authors suggest that the actual policy rate should have been increased in response to a rise in inflation expectation and or output gap. In the case of episode 1, this argument does not seem to be valid. The inflation rate came down in the subsequent quarters even though there was a difference between the actual and benchmark rates. So, the difference cannot be held responsible for creating a problem of inflation. It is also important to note that during this period the output gap was

below zero, perhaps the reason why the authorities were reluctant to raise interest rate. In the case of the second episode, inflation seems to be a lag variable – output gap has an increasing trend followed by a similar trend in inflation. Considering that inflation is rising and the output gap is also positive there is perhaps some justification for raising the interest rate (as reflected by a greater increase in the benchmark rate). However, one notices that both variables, inflation and output gap, dipped in the last quarter of 2008. Whether a rise in the actual policy rate (in line with the benchmark rate) – a single instrument – would have managed to curb the rise in inflation rate in the midst of the global financial crisis remains a question. The authors’ suggestion seems to follow the “one target one instrument” and strict rule based monetary policy which has received criticism in the face of the crisis.

Svensson (2002), p. 269 argues that “with only one instrument, monetary policy can still have several goals, as long as these goals are weighted together into a single objective function...”. This is still a controversial area.

An interesting departure from these conventional studies to find the causes of inflation is the study by Khan and Saqib (2011). It investigates the effects of political instability on inflation in Pakistan. Applying the GMM technique and using data from 1951 to 2007, they have examined this link through two different models. The results of the monetary model suggest that the effects of monetary determinants are rather marginal and inflation depends on the political environment of Pakistan. They have discarded monetary growth as a potential cause of high inflation in Pakistan (high inflation is defined as inflation rate more than 7 per cent – average annual inflation rate in the period 1951 – 2007) on the grounds that the effect of money growth on inflation is dependent on the political environment. The nonmonetary model’s findings explicitly establish a positive association between political instability and inflation. This is further confirmed through an analysis based on interactive dummies that reveal political instability significantly leading to high (above average) inflation.

Khan and Saqib (2011) argue that political instability undermines the competence of a government and diminishes its ability to deal with shocks that eventually result in macroeconomic disequilibrium such as inflation. The authors note that the conventional view that political instability leads to high inflation due to government’s excessive reliance on *seignorage* may not hold in a low to moderately high inflation country such as Pakistan. It finds that a government crisis is likely to be more important than an oil price increase to explain changes in inflation. It shows that a government crisis has a larger effect on inflation at times

of high inflation. At times when inflation is above average, a government crisis leads to an increase in average inflation by 0.715 percentage points. The study suggests that unless political reforms aimed at mitigating government crises and cabinet changes are not undertaken, inflation stabilization efforts by the technocrats would fail to yield long term price stability.

IMF *World Economic Outlook 2018* Chapter 3,(IMF, 2018) studies Inflation in emerging markets and developing economies since the mid-2000s and finds that although there is overall stability, there is significant heterogeneity in inflation performance and in the variability of long-term inflation expectations. It finds that longer-term inflation expectations are the main determinant of inflation suggesting that domestic not global factors are the main contributor to the recent gains in inflation performance. These findings are based mainly on an econometric exploration of 19 emerging economies (spread over Asia, Europe, Latin America, and Africa). Curiously, the sample ignores Venezuela. The time-period used for the econometric analysis begins in the first quarter of 2004 and ends in the first quarter of 2018. The estimated equations are called hybrid Phillips curves. These long-term inflation expectations are based on surveys of “professional forecasters”. It is not clear to what extent people in developing countries form such long-term expectations (given the level of literacy, limited access to internet services, the importance of informal markets etc.) and to what extent professional forecasters are providing estimates of dominant firms in oligopolistic markets.

The discussion from the literature provides evidence that the countries trying to keep inflation at a very low-level may lead to a sacrifice in terms of growth. Monetary policy in the developing countries also faces a challenge in controlling inflation and maintaining export-led growth. Contractionary monetary policy using higher interest rate to fight inflation is responsible for this as higher interest rate causes currency appreciation and thus negatively affects competitiveness in the international market. Tight monetary policy could also adversely affect growth when inflation is caused by supply side factors. In the event of negative supply shock fighting inflation using higher interest causes a further decline in output and growth. However, none of these studies that analyse the impact of monetary policies to control inflation study the subsequent impact on private sector investment, or public sector investment on infrastructure, or on human capital.

### 3.4 Credibility, Central Bank Independence and Monetary Policy

In an earlier section we discussed conditions that limited the independence of central banks, see Section 3.2 above. As noted above, the mainstream view supports that monetary policy should primarily focus on price stability which in turn requires credibility of government policy. The policy announcements by the government and how committed it is in executing it determines its credibility. The issue becomes complex when the policy maker's actual and preferred objective functions vary due to policy-maker's incentive to conceal its true position on policy and to serve its vested political and personal interests. To avoid such complexity arising from targeting multiple objectives or political influence, it is suggested that central banks responsible for executing monetary policy should be independent. Cukierman et al. (1992) show that central bank independence contributes to low inflation. Hammond et al. (2009) identify the lack of central bank independence being the key institutional constraint for developing countries. The authors find that in some countries central banks are under the statutory control of the ministry of finance. In some countries, even if they are independent in principle, they are not immune to various political interests. The authors suggest that the objective of managing exchange rate also puts constraint to monetary policy as maintaining the exchange rate at a particular level or within a specific range can often limit the scope for the central bank has in using policy instruments such as the interest rate to pursue an independent domestic monetary policy aimed at managing domestic activity and inflation.

However, it should be emphasised that central bank independence by itself is not sufficient to ensure monetary policy credibility. Central Bank Independence depends on whether government policies have credibility (Swinburne and Castello-Branco, 1991). In fact Friedman had expressed reservations about the effectiveness of central bank independence and pointed out (see Friedman, 1962) that it could be abused by inefficient officials with a different social welfare function. Moreover, the very argument that an elected government cannot be trusted with the responsibility of managing the economy goes against the very principle of a representative democracy (Chowdhury, 2006). Stern and Stiglitz (1996) have put it more clearly:

*“The degree of independence of the central bank is an issue of the balance of power in a democratic society. The variables controlled by the central bank are of great importance and thus require democratic accountability. At the same time the central bank can act as a check on government*

*irresponsibility. The most successful economies have developed institutional arrangements that afford the central bank considerable autonomy; but in which there is a check provided by public oversight, an oversight that ensures the broader national interest is taken into account in the final decisions.”*

Sowa and Abradu-Otoo (2009) argue that monetary policy formulation and inflation management in Ghana has improved significantly since 2002 with the institutional restructuring of central bank, allowing it to operate independently. It has also helped the central bank earn credibility which led to the attainment of positive outcomes – such as a steady decline in the rate of inflation with an impressive output performance. The paper empirically estimates the reaction function of the Bank of Ghana over the period of 1999:1Q1 and 2007:1Q1 using ordinary least square method. What is interesting to note that, in the estimations to determine the inflation gap, the authors keep inflation target as 8% which is higher than what is generally suggested by the IMF.

This survey of the literature on Monetary policy and growth shows that money plays a small role in developing countries and that monetary policy is not a very important influence on growth but may have some impact on inflation. Much of the literature does not look directly on the role of “stable and low” inflation for a period of time and its subsequent impact on economic growth. This requires long time series data for developing countries and models that allow for long lags between monetary policy (monetary variables), inflation, and output growth. This is something that needs further investigation.

## 4.0 Growth and Employment in Developing Areas: Introduction<sup>30</sup>

*“Developing country labor markets differ from advanced country labor markets in fundamental ways and the policy challenges are commensurately different.”*

(International Monetary Fund, 2013) (p.19)

In the previous sections of this paper we studied the impact of monetary policies on economic growth and distinguished between economic growth and economic development. There are several papers that suggest that a stable economic environment encourages economic development. In this section, we study the extent to which monetary policies lead to an increase in employment (in wage employment and in so-called “decent jobs”, as opposed to in vulnerable employment). Although there is much discussion about the merits of keeping inflation levels and volatility low, there is very little literature on studying the impact of low rates of steady inflation on the levels of private investment and technological change and hence on economic growth and on employment. A stable price level is likely to help a floating exchange rate to remain stable and hence stimulate exports and curb imports.

A necessary condition for (per capita) economic growth is increasing productivity that comes about from investment in new capital goods that embody modern technology. As mentioned in the Introduction, the World Bank (2008) argued the necessity of private and public investment for economic growth. As the IMF (2013) emphasises job creation strategies need to focus on creating the conditions for higher investment by the private sector. The arguments for the necessity of controlling inflation are that it provides private sector firms with a stable environment where they can plan for future years.

There are several papers, emanating from the IMF and similar bodies, that argue that it is important for developing countries to “anchor” inflation expectations as that would help to control inflation. However, in many developing countries that have a large and significant

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<sup>30</sup> There is a useful list of papers by the World Bank on Jobs at: <http://www.worldbank.org/en/topic/jobsanddevelopment/publication/jobs-and-development-list-of-publications>. It is interesting to note that IMF (2013) states “Three sets of forces have had a large impact on growth and job creation in advanced and developing countries in recent decades.

[Technological innovation, globalization, and the growing labor force.” \(p. 7\). It clearly does \*\*not\*\* argue that monetary policies have had a large impact on growth and job creation.](#)

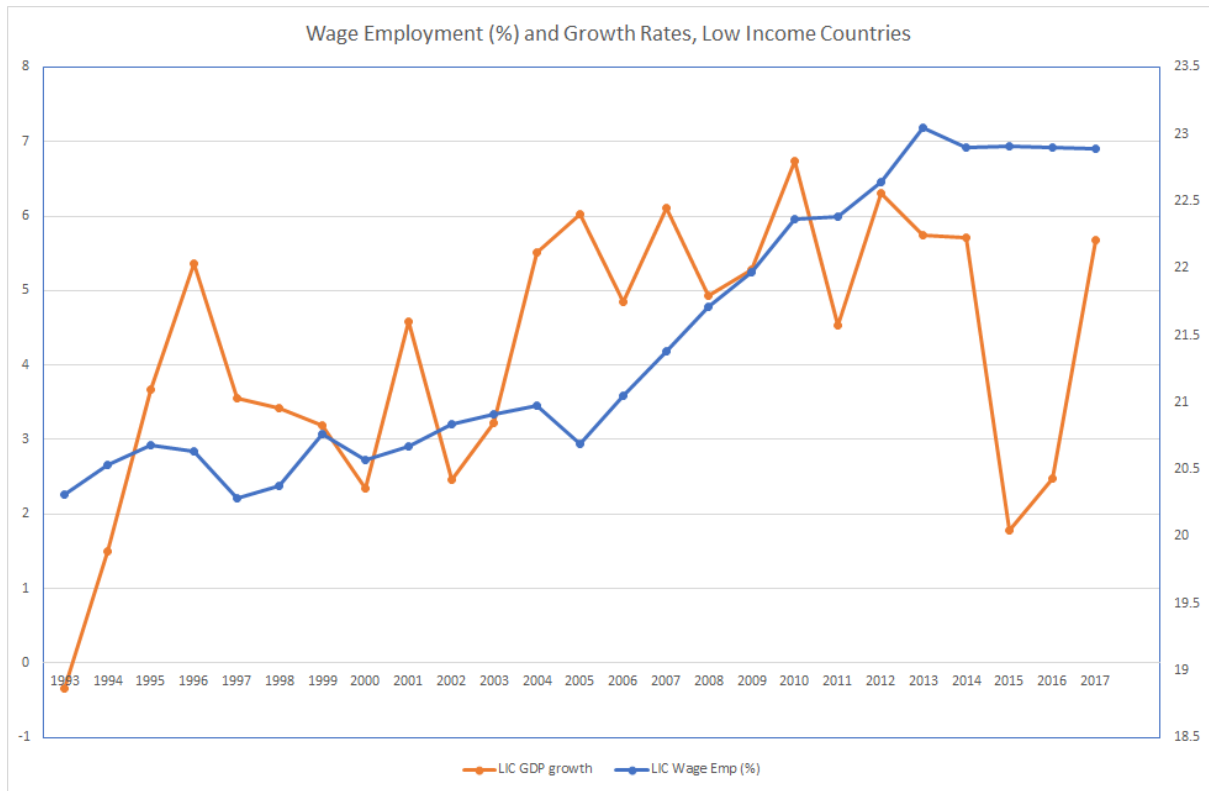


agricultural sector the prices of its products are determined in international markets and hence not affected by inflation expectations of the domestic producers. Even the non-agricultural sectors consist of small enterprises that are likely to be price takers and hence their inflation expectations are not relevant to the behaviour of the general price level. Inflation expectations that are measured by surveys are likely to be unrepresentative as many people in developing countries are either not literate or not well read about the state of the economy. A large proportion of the population is engaged in the agricultural sector and in small scale enterprises (microenterprises, small and medium enterprises) and are unlikely to formulate expectations of inflation a few years into the future. The usual forecasts of inflation expectations are made by surveying “professional forecasters”. To what extent small producers in informal markets or unorganised workers study these professional forecasters survey results is doubtful.

#### **4.1 Some Descriptive Links between Employment and Growth and Inflation**

To provide some context to this discussion, we explored the links if any between wage employment (as a percentage of total employment) and the growth rates of GDP/inflation rates for Low Income, Middle Income, and High Income Countries. These graphs are presented in Figures 3 through 8 below.

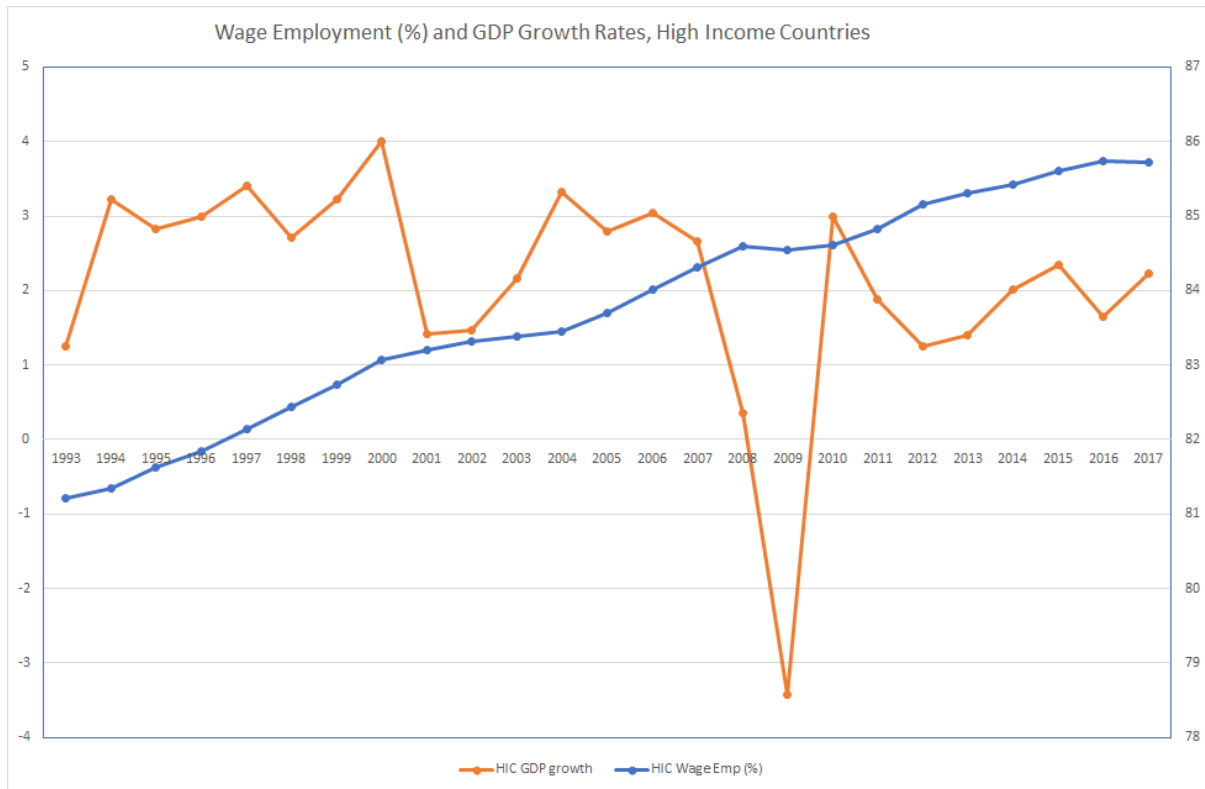
**Figure 3: Share of Wage Employment and Growth, Low Income Countries**



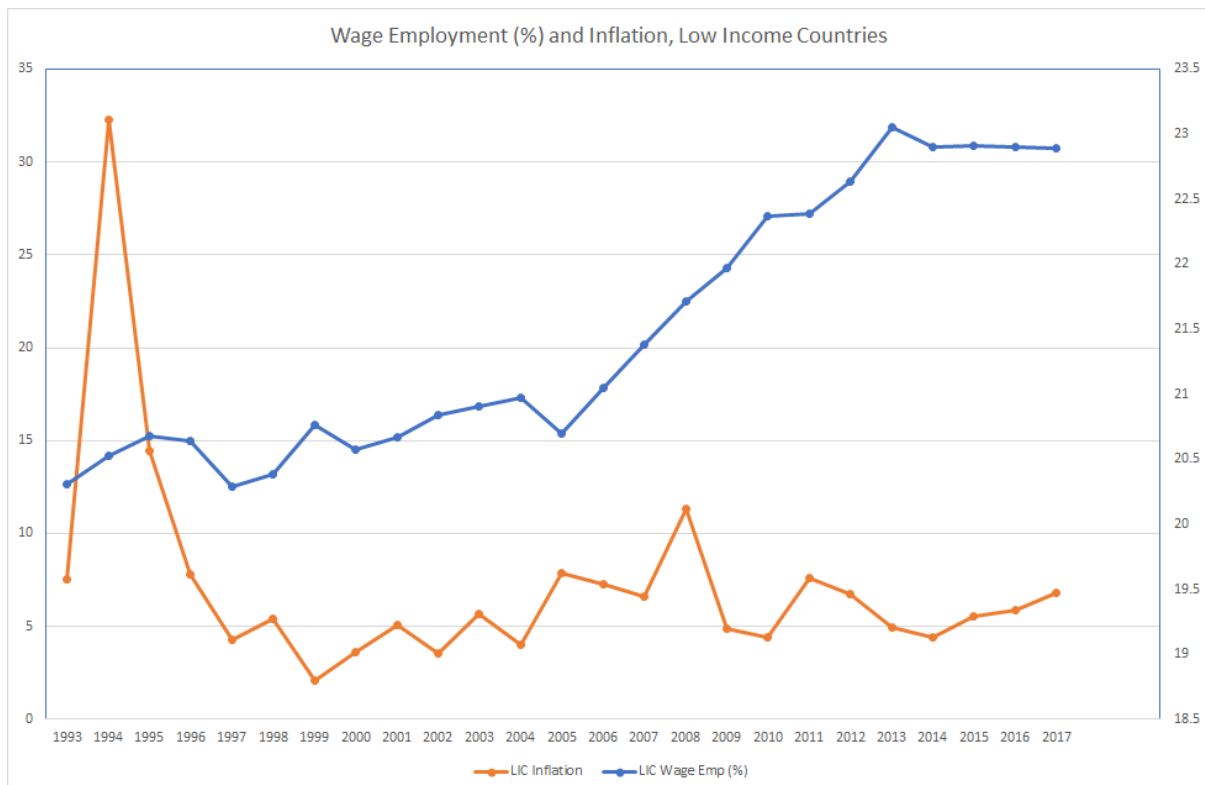
**Figure 4: Share of Wage Employment and Growth, Middle Income Countries**



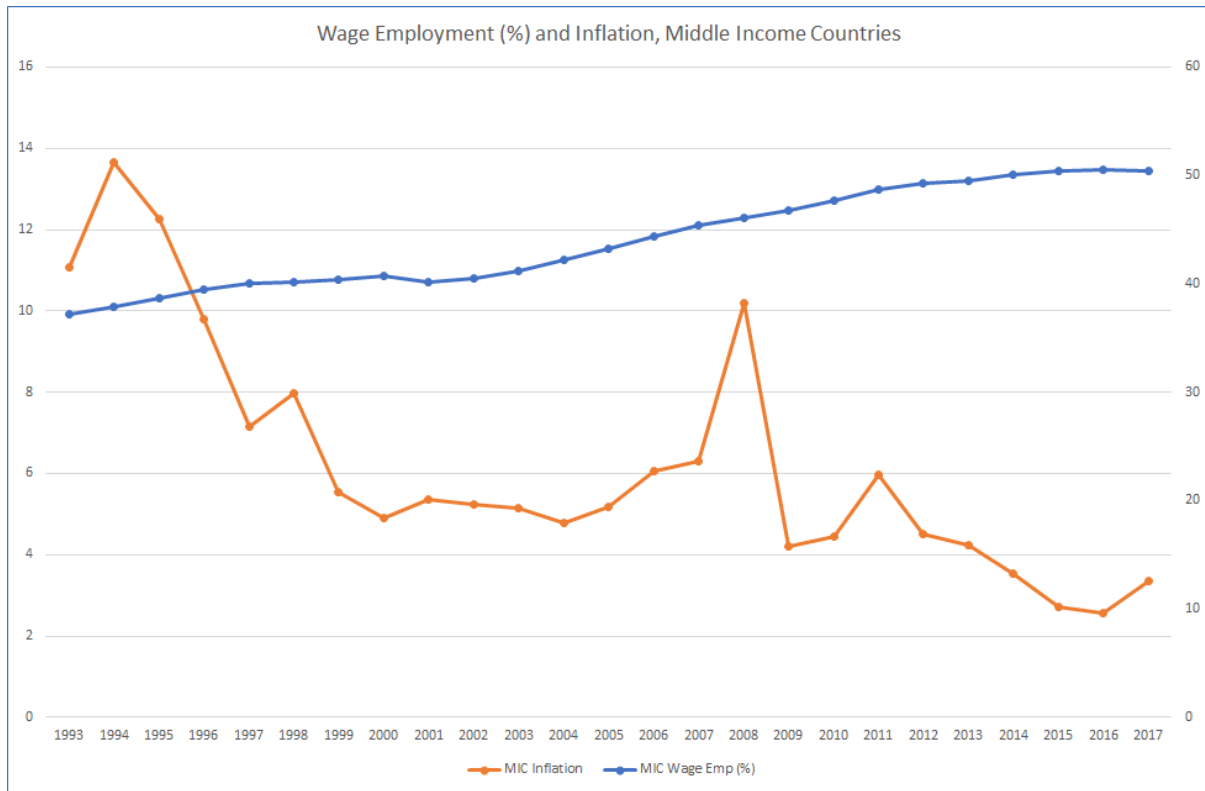
**Figure 5: Share of Wage Employment and Growth, High Income Countries**



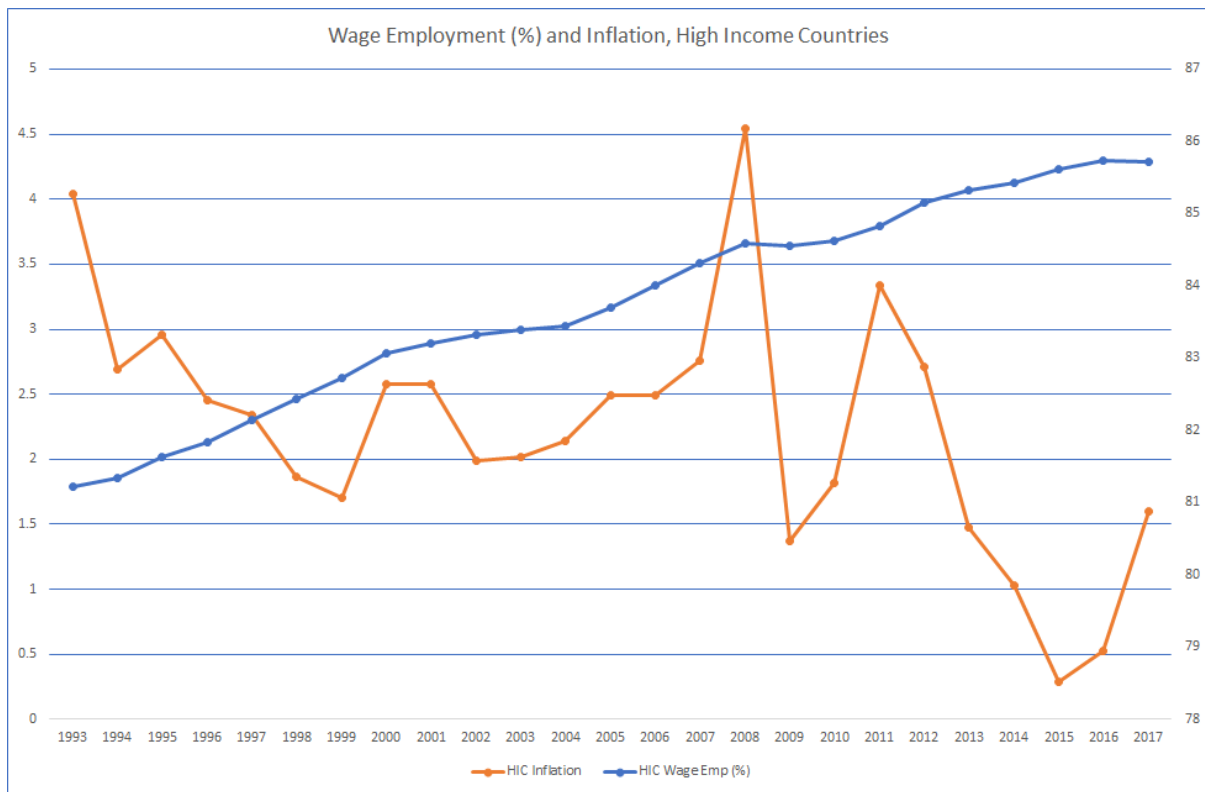
**Figure 6: Share of Wage Employment and Inflation, Low Income Countries**



**Figure 7: Share of Wage Employment and Inflation, Middle Income Countries**



**Figure 8: Share of Wage Employment and Inflation, High Income Countries**

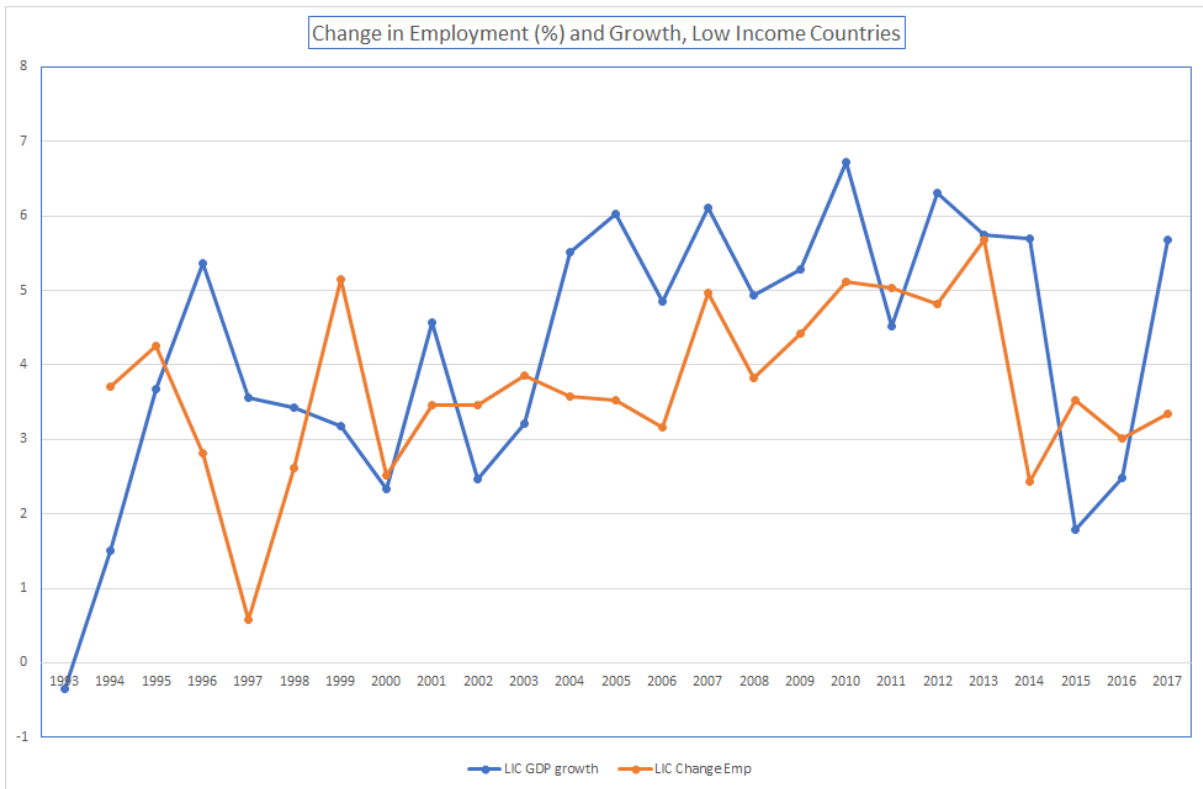


Source: For all the above graphs data are from WDI

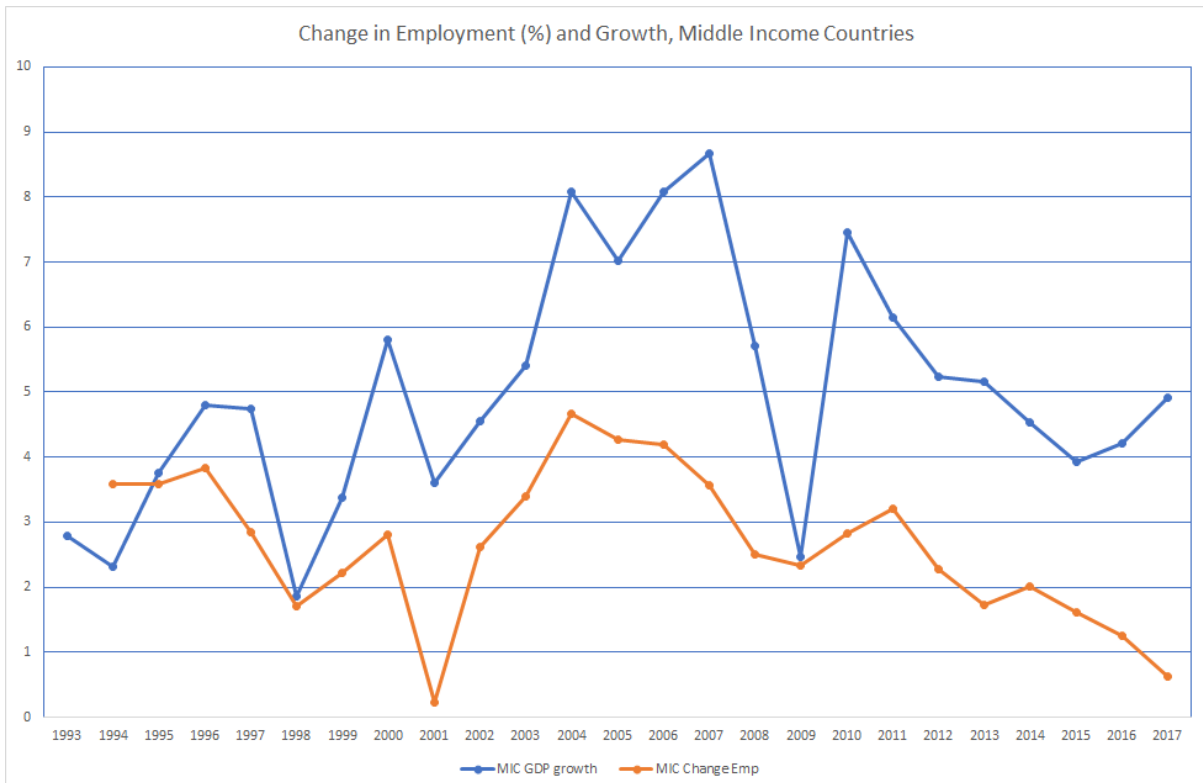
It is clear from these graphs that there is no obvious relationship between the shares of wage employment in total employment and growth rates (or inflation rates). In general, the share of wage employment seems to be growing throughout the period, although for Low Income Countries, it fell or stabilised after 2012. The share of wage employment in Low Income Countries is very low and rises slowly from 20 % in 1993 to only 22 % in 2017: it rises from 2005 when growth rates are quite high but then stabilises when the growth rate falls. Interestingly, the share of wage employment increases when inflation is increasing from approximately 1999 until 2008 and continues to rise when inflation falls after the Global Crisis, but then plateaus after 2013. It should be noted that the share of wage employment has remained stubbornly low even though various policies to control inflation and to encourage growth have been carried out by governments over the years. Obviously, these graphs are simply illustrative, and a proper econometric analysis would be required.

As a further description, we studied the percentage change in employees (using modelled ILO data) and the growth rate of GDP, and against inflation rates by Income groups. *Note that “employees” in these data do not include self-employment.* In developing countries self-employment is a large and significant group and wage employment is a much smaller group, although increasing over time.

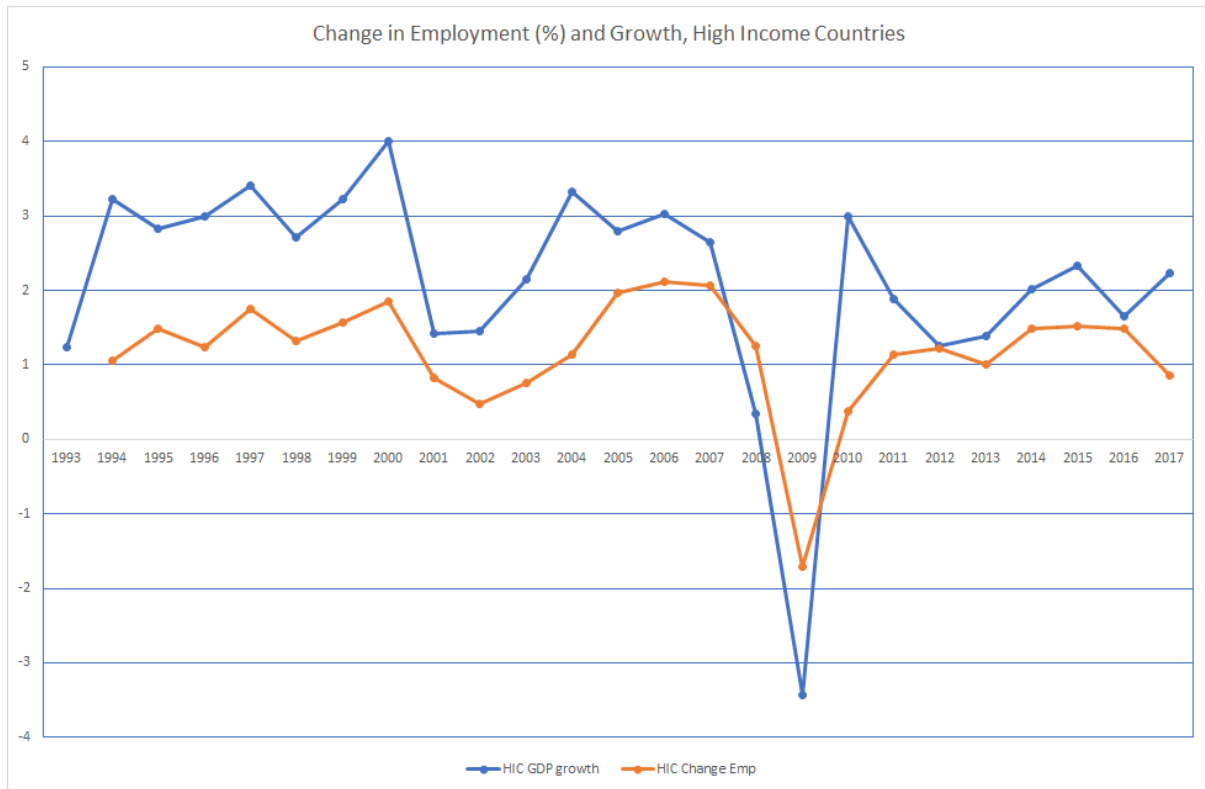
**Figure 9: Percentage Change in Employees and Growth, Low Income Countries**



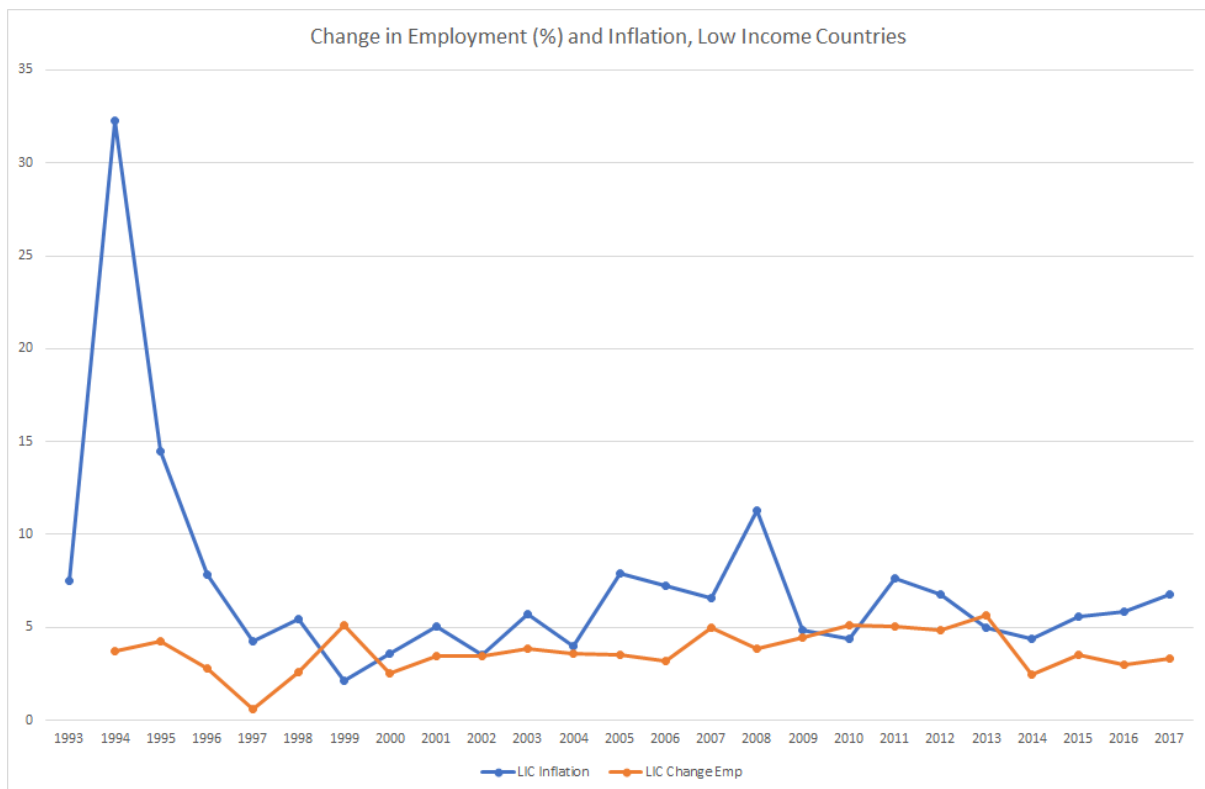
**Figure 10: Percentage Change in Employees and Growth, Middle Income Countries**



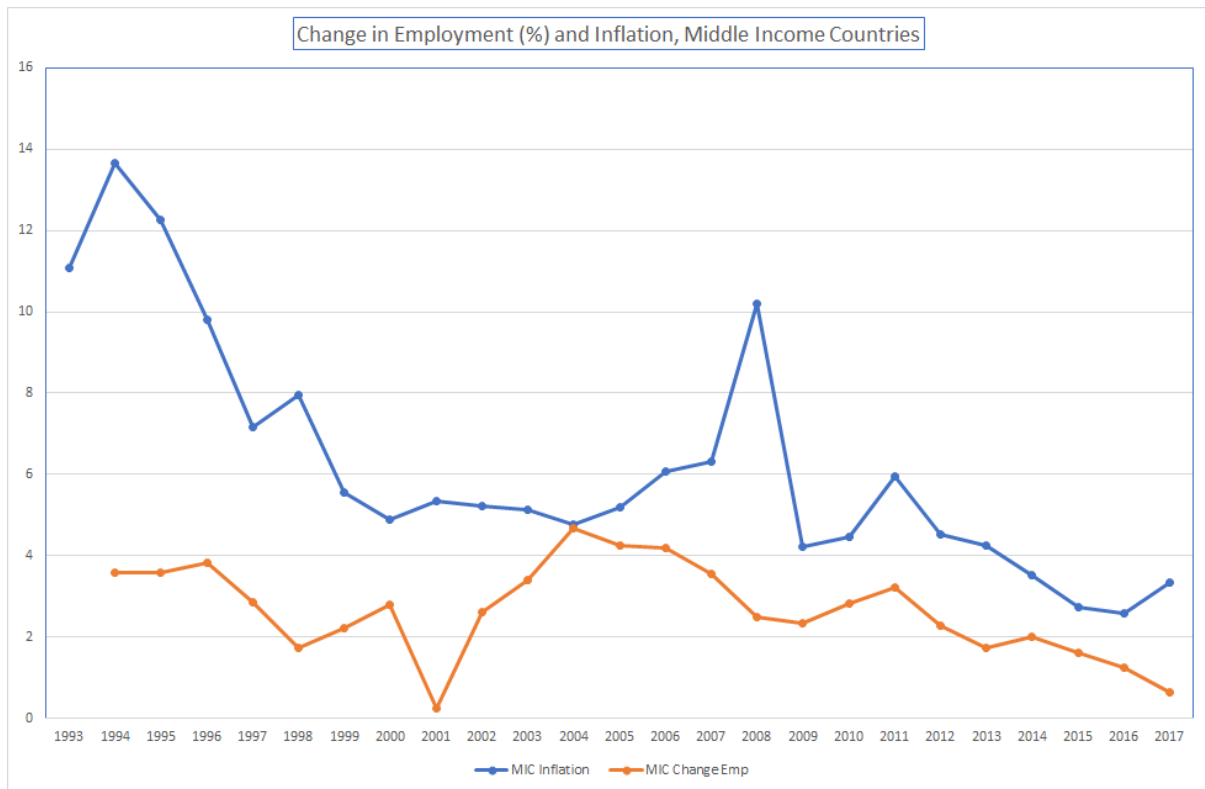
**Figure 11: Percentage Change in Employees and Growth, High Income Countries**



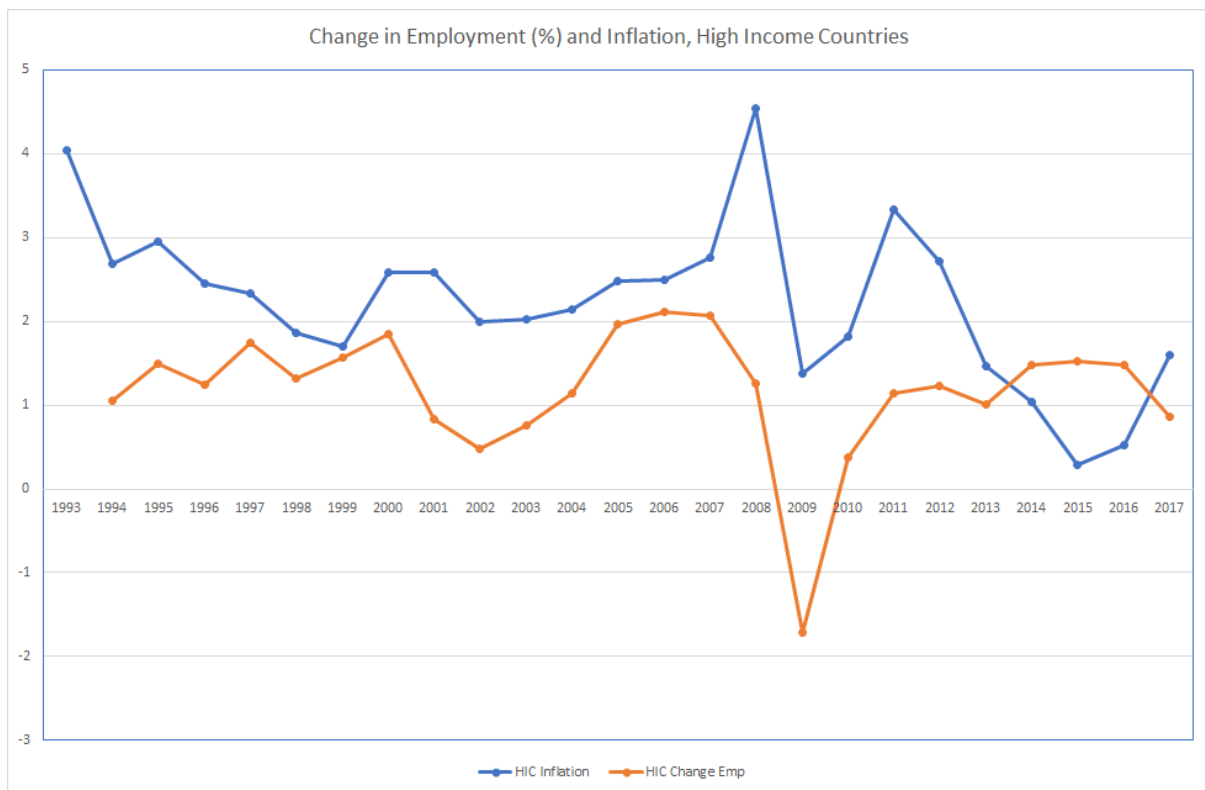
**Figure 12: Percentage Change in Employees and Inflation, Low Income Countries**



**Figure 13: Percentage Change in Employees and Inflation, Middle Income Countries**



**Figure 14: Percentage Change in Employees and Inflation, High Income Countries**



Source: Data from WDI and Employment Data from ILOSTAT



**Note: Employment here refers to employees in paid employment and does NOT include the self-employed.**

These graphs of the percentage change in employees and growth rates (inflation rates) appear to show a possible link between growth and the growth rate of Employees for the different income groups. However, there appears to be a closer link for High Income Countries for the percentage change in Employees and inflation, but not for Middle, or Low Income Countries.

A simple regression of the percentage change in Employees on the growth rate and inflation rate for Low Income Countries suggests that there is not a significant statistical coefficient for the inflation rate and a marginally significant (at the 10 % level) coefficient for the growth rate, see below.

Table 5: Percentage Change in Employees and Growth (Inflation) Rates

LICChangeEmp	Coef.	Std. Err.	t	P> t
LICInflation	0.030744	0.040247	0.76	0.453
LICGDPgrowth	0.278481	0.154363	1.8	0.086
_cons	2.263713	0.839168	2.7	0.013

n	24
Prob > F	0.21
R-squared	0.14
Adj R-squared	0.05

Obviously, the above results are simply descriptive and further research is required using country level data with panel estimation techniques.

#### **4.2 Some Studies on the relationship between Employment and Inflation**

A paper by Benlamine et al. (2018) (Benlamine et al., 2018) provides simulation results in a macroeconomic model for Morocco. It studies the impact of an exogenous positive shock to household consumption on macroeconomic variables. It also studies exogenous shocks to core inflation and to the nominal exchange rate. However, it does not study the impact on employment in Morocco that has a large and significant agricultural sector. The previous section discussed other cases where monetary policy changes led to macroeconomic impacts on output (GDP) and sometimes unemployment, but did not consider changes to *employment, especially wage employment*. As discussed earlier, unemployment in developing countries is not a very meaningful concept as everyone must find some kind of work to survive, even if it means picking up garbage to find some items that are saleable.

In particular, we saw that for many developing countries that employed monetary policy to control inflation the impact on output may have been significant but it did not necessarily lead to faster economic *growth*. In fact, as argued by Svensson (Svensson, 2002) “In the long term, monetary policy cannot increase the average level or growth rate of real variables such as GDP and employment ...” (p. 266). As discussed in the previous section, Brito and Bystedt (2010) find that output *growth* is not statistically significantly affected by an inflation targeting dummy, and in any case, it has a negative sign. Hence, the study shows that inflation targeting does not stimulate growth and probably has no impact on employment.

Most of these studies linked monetary policy to inflation and inflation expectations but did not study the links to investment in gross fixed capital formation nor to productivity and hence on employment. This was mainly because in developing countries the banking and financial systems were not well developed and large sections of the economy are based on agricultural production and informal markets. Hence, it is unlikely that monetary policy would have a significant impact on employment in developing countries. *As there is no literature that studies the direct links between monetary policies and employment, this part of our report studies the links between economic growth and employment in developing countries.*

It is important to determine the kind of growth that would be good for economic development. In recent years there has been an emphasis on “inclusive growth”. There are different definitions of inclusive growth (see box below). A general definition of inclusive growth is where the benefits of growth are equitably distributed and with sustainable and strong employment growth. Unfortunately, much of the growth in the past few decades in most countries has led to increasing inequality.<sup>31</sup>

There has been much discussion about the “trickle down” effects of growth, but in recent days this “theory” has been discarded, see Dabla-Norris et al. (2015). There has been an approach to create that type of growth that leads to more and better jobs (good jobs/decent jobs) that are appropriate for that society. Various defined as “inclusive growth” there is concern by the UN and many international agencies that growth should provide for basic necessities (reduce poverty) and be equitable<sup>32</sup>. IMF (2013) argues that “inequality of wealth and income can lead to wasted productive potential and a misallocation of resources, undermining long-run growth.”

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<sup>31</sup> See Commission on Growth and Development (2008, 2010)

<sup>32</sup> See IMF (2013) for some details. “In both advanced and developing countries, financial globalization-and FDI in particular-are associated with increases in inequality.” (p. 56)

It also argues that “the higher is inequality, the lower tends be social mobility....could conceivably act as a disincentive to individual effort, also contributing to lower growth.” (International Monetary Fund, 2013 p. 26).

### Inclusive Growth: Definitions

#### Box 2. Inclusive Growth: No Definition Left Behind

- The UN definition places somewhat greater emphasis on social protection. Inclusive growth “refers to the notion of achieving material progress through economic growth while encompassing equity, equal opportunity to basic service provision, access to the key markets (labor and credit), and social protection for the most vulnerable in society.” (Addison and Niño-Zarazúa, 2012).
- The Asian Development Bank defines inclusive growth as “growth coupled with equality of opportunity” (Asian Development Bank, 2012). In particular, growth is viewed as “inclusive when it allows all members of a society to participate in and contribute to the growth process on an equal basis regardless of their individual circumstances.”
- The African Development Bank defines inclusive growth as “economic growth that results in a wider access to sustainable socio-economic opportunities for a broader number of people, regions or countries, while protecting the vulnerable, all being done in an environment of fairness, equal justice, and political plurality” (African Development Bank, 2012). Inclusive growth is broad-based growth across sectors; includes productive employment, and protects disadvantaged and marginalized groups from adverse shocks.
- In making the case for the Europe 2020 strategy, the European Commission (2010) spells out a range of considerations that inclusive growth encompasses: (i) making full use of labor potential; (ii) combating poverty and its consequences; (iii) advancing social inclusion (focusing attention on opportunities and obligations over the life cycle); and (iv) ensuring territorial cohesion (preventing or reducing the extent of regional disparities).

Source: IMF (2013)

**What is employment?** In developed economies employment usually means *wage employment*. However, in developing countries much of employment consists of people engaged in work that is often not based on wage labour but on various forms of informal payment systems. Many people are working (unpaid) on family farms, or in small family owned shops/cafes/restaurants. Unpaid family workers, self-employed workers, and own account workers form this group of “informal workers”. Data on “informal employment” is therefore difficult to obtain on a systematic basis for most developing countries, although we now have data based on labour force surveys for some developing countries. The International Labour Organisation provides estimates of informal workers.

The ILO defines vulnerable employment as the sum of the employment status groups of own-account workers and contributing family workers<sup>33</sup>. They are less likely to have formal work

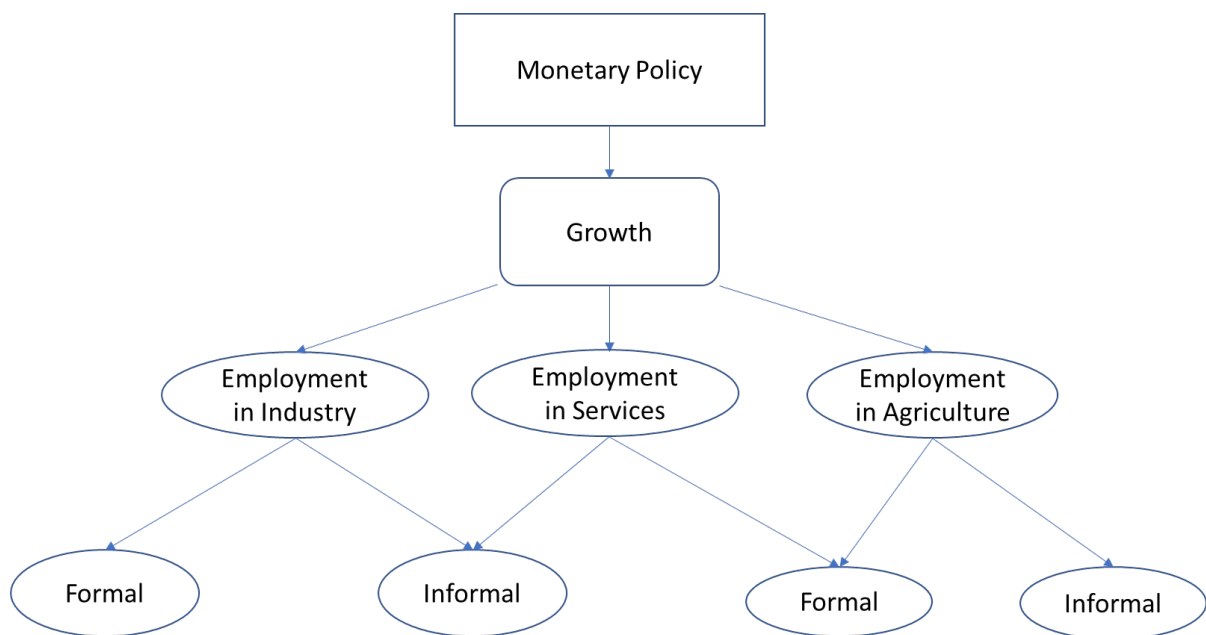
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<sup>33</sup> See INTERNATIONAL LABOUR ORGANISATION 2013. Revision of the International Classification of Status in Employment (ICSE-93). Geneva: ILO.

arrangements and are therefore more likely to lack decent working conditions, adequate social security and ‘voice’ through effective representation by trade unions and similar organizations. Vulnerable employment is often characterized by inadequate earnings, low productivity and difficult conditions of work that undermine workers’ fundamental rights.

Does growth lead to greater employment? Should governments go for growth and assume that employment will follow? In recent years there have been reports that technological change would lead to labour being replaced by capital. Will faster growth reduce unemployment and poverty? Growth may be a necessary condition for employment, but it is not a sufficient condition. Growth requires rapid productivity growth, but does that lead to rapid wage employment growth? These are issues that are considered in this paper. We need to consider not only changes in aggregate employment but also changes in employment by sector and whether the growth in employment is “good jobs” and whether it is in formal or informal employment, see Figure 15 below.

**Figure 15: Monetary Policy, Growth and Labour Markets**



It is important to remember that a job is not simply a wage but also provides an individual with a set of social relationships which provide a structure and meaning to life. As such the person gets recognition in society as someone who is a worthwhile member of that society. On the other side, unemployment (or the absence of work) leads to unhappiness and may lead to

physical and mental health problems. Some of the reasons for the so-called “Arab Spring” was the frustration felt by many young peoples as they were unemployed. See (Malik and Awadallah, 2013), (International Monetary Fund, 2013) “High unemployment and inequality can lead to latent social conflict...” (p. 27) and “Under some conditions, inequality and joblessness can be associated with open social conflict...” IMF (2013) referencing World Bank (World\_Bank, 2011); (Campante and Chor, 2012); (International\_Labour\_Organisation, 2011)

There is much evidence about this see ILO 2011 and [https://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS\\_154078/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_154078/lang--en/index.htm). Also see (Drine, 2012).

In a seminal paper, W. Arthur Lewis (1954) (who won the Nobel Prize in Economics in 1979) proposed a dual economy model.<sup>34</sup> He argued that development takes place with under-employed labour moving from a low productivity traditional (subsistence) sector (agriculture) to a higher productivity modern capitalist sector (industry/manufacturing), without a fall in the total production of agriculture. As development proceeds this labour movement takes place without increases in wages as labour supply is assumed to be infinitely elastic to the industrial sector (“unlimited supplies of labour”). As the capitalist sector expands, it reinvests its profits and development continues. It is worth noting that economic development is taking place with a change in the institutional structure from a pre-capitalist society subsistence sector to a capitalist profit motivated society. Society is modernising as it develops. But, in fact when development takes place does the economy grow into a capitalist mode of production, or do segments of the non-agricultural sector remain based on traditional methods of production? What we see in many developing societies is that the non-agricultural sector consists of some modern capitalist firms, but co-existing with them are many activities run by families that work in the so-called informal sector<sup>35</sup>. Even in urban areas there are at least two segments: the capital intensive foreign owned firms with relatively high wages and better working conditions, and a domestic traditional sector with more labour-intensive production with lower wages. Many of the rural migrants in the urban areas find themselves working in the informal sector dreaming of a position in the high wage sector, sometimes referred to as “wait unemployment”.

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<sup>34</sup> LEWIS, A. W. 1954. Economic Development with Unlimited Supplies of Labour. *Manchester School*, 22, 139-191. Also see LEWIS, A. W. 1979. The Dual Economy Revisited. *Manchester School*, 47, 211-229. and GOLLIN, D. 2014. The Lewis Model: A 60-Year Retrospective. *Journal of Economic Perspectives*, 28, 71-88.

<sup>35</sup> The informal economy is a broad concept referring to “all economic activities by workers and economic units that are-in law or practice-not covered or insufficiently covered by formal arrangements.” ILO (2014a) Informal workers could be in the formal or informal sector.

The *World Development Report (2013)* on Jobs suggests that there are diverse challenges to countries at different stages of development. It suggests the following typology:

- (a) *Agrarian countries*. Most people are engaged in the agricultural sector in rural areas. People move from low productivity agriculture (rural sector) to more dynamic high productivity industrial sector (urban sector). Increasing productivity in the agricultural sector is a priority.
- (b) *Urbanising countries*. Increased agricultural productivity has released many workers to the industrial sector and production for high value export goods.
- (c) *Formalising countries*. More developed societies with urban industrial workers with more formal employment possibilities, but with a large informal sector.
- (d) *Countries with high youth unemployment*: where there is a high proportion of young people who are unable to find employment not necessarily through a lack of skills but through a lack of demand.
- (e) *Ageing societies*: here the problem is of a shrinking population of working age. In fact, most developing countries tend to have high population growth and a younger population.
- (f) *Resource-rich countries*: often they do not have much employment beyond those industries, and they rely on migrants to do menial work.
- (g) *Small island nations*: these countries cannot get the benefits of economies of scale or agglomeration.
- (h) *Conflict-affected countries*: these countries are unable to attract foreign investment and domestic investment is also limited.

### **4.3 Important Characteristics of Different Countries**

To provide some background information, we present some summary statistics on key variables for Low, Lower-Middle, Upper-Middle, and High Income countries in Appendix Table 3 below.

What is immediately obvious from these summary statistics in Appendix Table 3, that (a) Agriculture is an important sector in terms of its contribution to GDP for Low and Lower-Middle-Income Countries, and very important in providing employment. Averages for the period 1993-2017 show that for Low Income countries, Agriculture contributed almost 30 % to GDP, while it was about 19% for Lower Middle countries, 9 % for Upper Middle-Income countries and only 1.6% for High Income countries. Similarly, Employment in agriculture was 72% of total employment for Low Income countries, and 50%, 30% and 4% respectively for the other income groups.

(b) We also see that self-employment is very high in Low Income countries (78.5%) compared to Lower Middle Income countries (71.8%), 43% in Upper Middle Income countries and only

16% in High Income countries. This also explains the high Employment-Population ratios for Low and Lower Middle Income Countries. Wage Employment is at 25% in Low Income countries, rising to 30% in Lower Middle Income countries, 57% in Upper Middle Income countries, and 87% in High Income countries. Vulnerable employment 77% in Low Income countries, 70% in Lower Middle Income countries, 40% in Upper Middle Income countries and only 12% in High Income countries.

(c) The Broad Money to GDP ratios are: 31% for Low Income countries, rising to 54% for Lower Middle Income countries, 92% for Upper Middle Income countries, and 110% for High Income countries. Domestic Credit to private sector banks (as a percentage of GDP) increases from 12.9% for Low Income countries, 34% for Lower Middle Income countries, 70% for Upper Middle Income countries, and 87% for High Income countries. This clearly shows the underdeveloped nature of the financial system in developing countries.

(d) Gross fixed capital formation in the Private Sector as a percentage of GDP is only 12% in Low Income countries and 20% in Lower Middle Income countries. For some reason these data are not provided by the WDI for Upper Middle and High Income countries. Again it shows that developing countries need to increase capital formation to help stimulate growth and employment.

(e) If we look at the data on productivity per employed person (based on 2011 PPP) with Low Income productivity indexed as 100, Lower Middle Income countries are at 315%, Upper Middle Income countries are at 577%, and High Income countries are at 2,293%! There are serious differences in productivity across the developing and developed countries.

#### **4.4 Quality of Employment**

A critical issue in studying employment is that we need to consider the quality of jobs that are being created as the economy grows. The ILO's former Director-General Juan Somavia in a report to the International Labour Conference in 1999 described decent work as "opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity". This is a fairly broad definition that includes, decent pay, working conditions that would include job security, access to training and career development, safe working conditions, etc.

A good job can be defined from the perspective of an employee or from the perspective of society<sup>36</sup>. From the perspective of an individual a good job is a well-paid secure job with safe working conditions. From the perspective of societal welfare a job may have externalities: if it leads to jealousy or a feeling of unfairness for others then it may not be a good job. Again, a well-paid job (say) in a gambling house may benefit the employee, but if that work leads to increased gambling addiction, then society may not consider it a good job. The *World Development Report 2013* emphasises that if one person has a good job with perquisites (perks) but they may be less valuable to society if these perks were possible because of government transfers or restrictive regulations that undermine the earnings of other workers or job opportunities for others. From a societal point of view a good job is one that maximises societal welfare. This simply reinforces the argument that in most countries the wages paid do not reflect the marginal *social* benefits. If there were perfect competition in all markets (which requires some very stringent conditions to be met, including several buyers and sellers who are price takers, there is perfect information, there are no externalities, etc.) firms would pay the marginal product to workers.<sup>37</sup> Even ignoring social benefits, if there is discrimination against certain groups (e.g. women), wages paid are less than marginal products.

*“Good jobs for development are those that make the greatest contribution to society, taking into account the value they have to people who hold them but also their potential spillovers on others-positive or negative.” (World Development Report 2013, p. 154.)*

The World Development Report 2013<sup>38</sup> also makes a key point that when employment increases but GDP does not increase, society may be better off if there is a reduction in social tensions. For example, if an increase in employment decreases youth unemployment without any change in GDP, society may be better off. In Germany after the Global Crisis, employers introduced work sharing to prevent an increase in unemployment.

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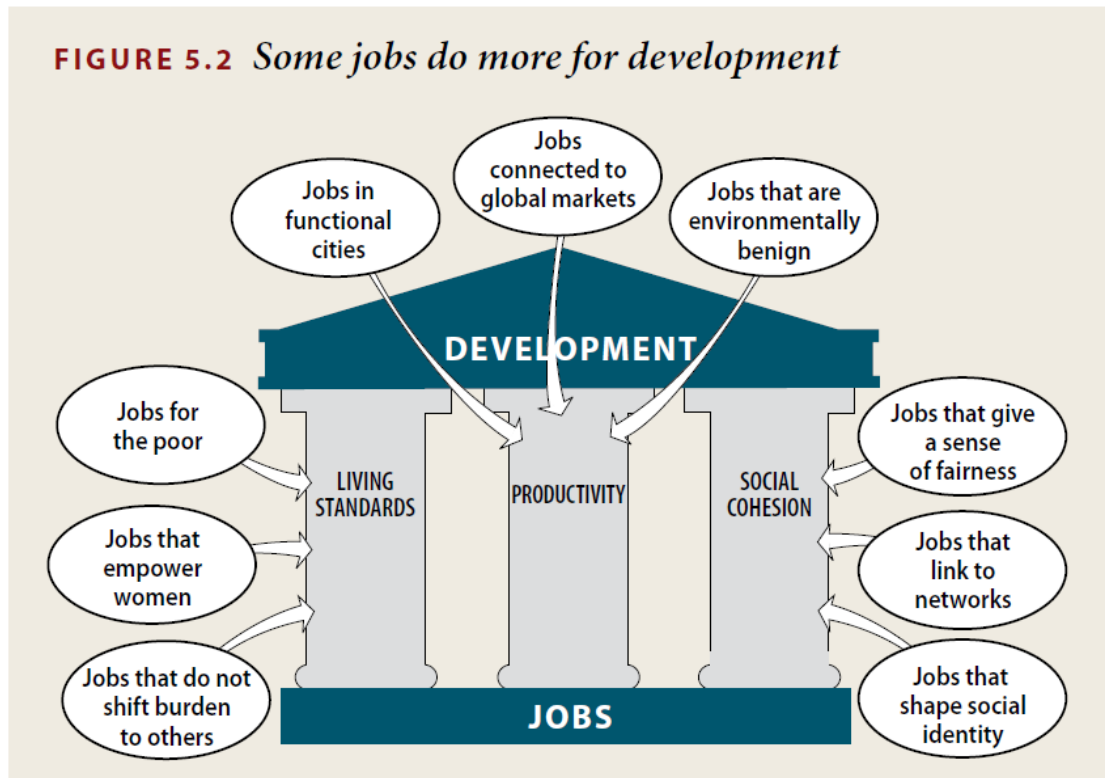
<sup>36</sup> See WORLD\_BANK 2013. World Development Review 2013. Washington: World Bank.p.154.

<sup>37</sup> Wages do not necessarily reflect the marginal private benefits (marginal products) if we have non-competitive elements. Profit sharing by non-competing firms has been used to explain wage determination.

<sup>38</sup> See Figure 16.



**Figure 16: Growth and Jobs**



Source: World Development Report 2013 team.

Source: WDR 2013, p. 160

Following the ILO, the UN Millennium Development Goals advocates the need for “full and productive employment and decent work for all, including young women and men”. It suggests monitoring four indicators: (i) labour productivity, (ii) the employment-population ratio, (iii) working poverty, and (iv) employment status (vulnerable employment)<sup>39</sup>. This concept of full and productive employment is meant to capture both the qualitative and quantitative aspects of employment. Working poverty, vulnerable employment, and labour productivity are meant to capture the qualitative aspects of employment, while the employment-to-population is meant to capture the quantitative aspects of employment. These data are available on an aggregate basis for many countries.

*“Economic growth has the power to transform societies, boost incomes, and enable citizens to thrive, but growth alone is not enough. To reduce poverty*

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<sup>39</sup> Vulnerable is measured as the proportion of own-account workers and contributing family members in total employment.

*and ensure shared prosperity, growth that creates more, better, and inclusive jobs is needed. Good, inclusive jobs are the surest pathway out of poverty.”*

Extract from <http://www.worldbank.org/en/results/2018/02/13/jobs-at-the-core-of-development>

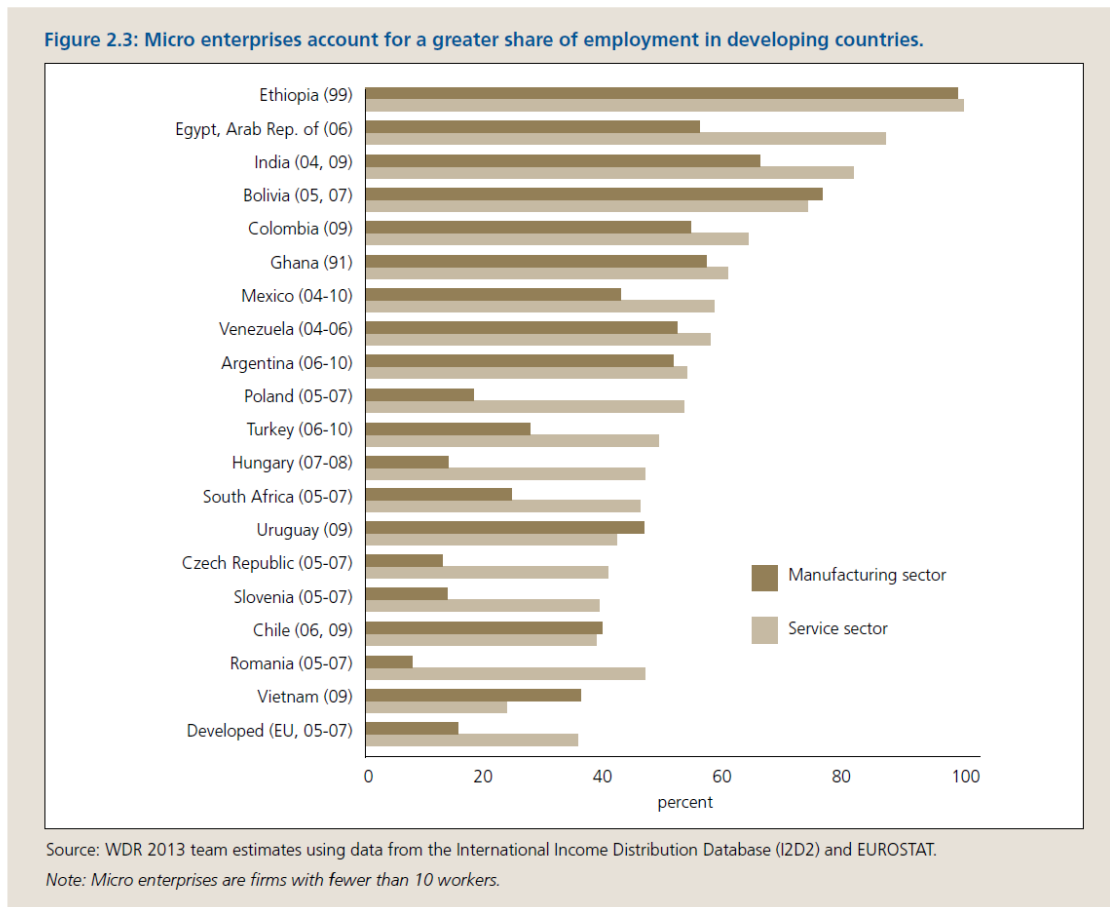
Although it is important for a developing country to have increased employment, it must be employment that is not only in decent work, but also in areas that maximise social welfare for society. In other words, if there is a growth in employment in (say) gambling casinos that are “decent jobs” they would not be the most important for economic development in the early stages of development. Employment growth in infrastructure like improvements in sanitation and public health would be of greater social benefit than employment in an industry that produces luxury cars like Porsches or Maseratis!

Developing countries have a large and significant subsistence agricultural sector, and employment is based mainly on family labour and some hired labour. In the rural sector although there are some non-agricultural activities, e.g. construction, retail and restaurant businesses these are based on informal labour markets. Urban labour markets tend to be segmented into reasonably paid formal employment (often in manufacturing) and poorly paid employment in a large informal sector that provides services like construction, restaurants, cleaning, etc. Migration from the rural sector to the urban sector leads to large numbers of people living in poor conditions working in this informal sector.

Does growth lead to greater employment in “good”/decent jobs? There is a literature on whether countries that grow faster have faster employment growth, but without distinguishing between the quality of employment. See below.

There is also a literature on whether the private sector or the government sector should provide the necessary growth in employment in developing countries. In fact, most of the employment growth has come from the private sector. A large proportion of jobs are in microenterprises, small and medium enterprises see (International\_Finance\_Corporation, 2013), Figure 17 below. However, the public sector often provides the necessary infrastructure to support the private sector. There is a literature on whether countries with a stable democratic system, a non-corrupt and efficient public service, with macroeconomic stability (a monetary system that keeps low inflation) have better employment prospects.

**Figure 17: Employment in Micro enterprises**



Source: (International\_Finance\_Corporation, 2013)

Do labour market policies (regulations and minimum wages) affect employment in developing countries? According to World Development Report 2013 there is little evidence that labour market institutions hinders employment in developing countries. The ILO in its Global Wage Report (2016-17) argue that minimum wages and collective bargaining help to have increases in productivity reflected in wage growth.

#### 4.5 Some Evidence on Growth and Employment

There are several papers that study the determinants of growth in developed and developing countries. As far as we can see, there are no papers that study the *link between monetary policy and growth and hence on employment*. However, there is limited research done on the links between growth and employment, or between growth and the *quality* of employment.<sup>40</sup>

<sup>40</sup> An early paper discusses the role of industrialisation and employment, see Morawetz (1974). It suggests that the role of industrialisation in creating employment in developing countries has been disappointing.

Although there was a large literature in the past few decades on growth and employment, it was usually about the impact of growth on employment in aggregate. In recent years there have been some studies on the impact of growth on the quality of employment for individual countries by the ILO and the World Bank. However, in an excellent recent study by Cruces et al. (2017) the authors provide a detailed study of Growth, Employment and Poverty in Latin America, which is discussed below.

The impact of growth on employment depends on what are the main drivers of economic growth and the initial state of the economy. As mentioned earlier, if growth is taking place in “Agrarian economies” then it is likely to be positive for employment growth as increasing productivity in agriculture releases labour to a higher productivity industrial sector, *a la* Lewis. If it is taking place in “Urbanising countries” some of the labour released from agriculture could move to high value export sectors. However, if the growth is taking place in resource rich countries with say an expansion of capital-intensive mining then there is limited growth in employment. There is also the issue of the “resource curse” or the problem of the Dutch Disease where the growth of the resource sector increases the exchange rate and hence leads to problems for the industrial sector. Whether growth is good for an economy also depends on which sector is growing and whether it is growing through labour saving technological change. If there is a shift from the agricultural sector to the service sector then employment may be increasing. However, much of the service sector employment is likely to be “informal” and “vulnerable”<sup>41</sup>.

It is clearly important to assess whether the growth in GDP is simply due to a growth in productivity and/or employment growth. For example, if we look at growth of GDP and growth of employment in China and India we see that although China had a much more rapid growth of GDP, employment growth in India was greater, see Figure 18. This is because population growth in India was greater than in China: the growing Indian population would have found some kind of informal employment. To survive everyone must do some work in the absence of a welfare state.<sup>42</sup> This suggests that data on employment on developing countries that

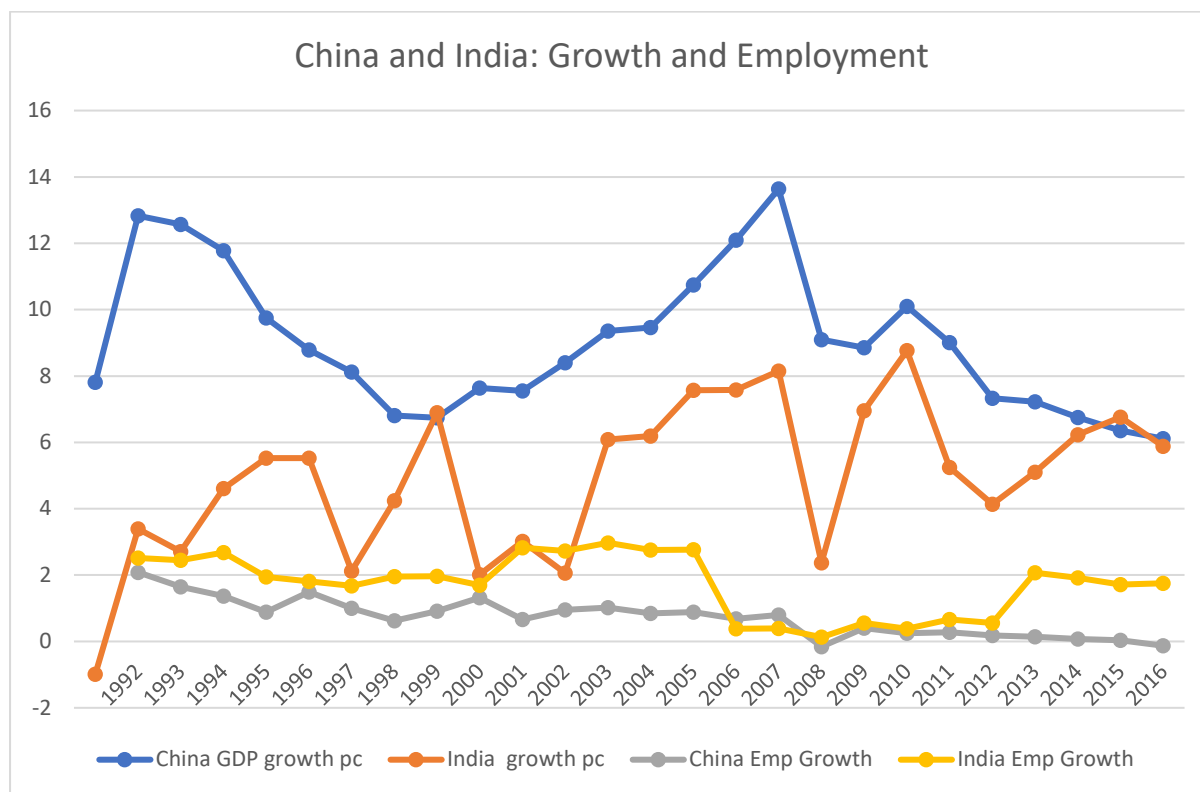
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<sup>41</sup> ILO World Employment and Social Outlook, Trends 2018, p. 2.

<sup>42</sup> “The majority of the population in developing countries (DCs) have low incomes and cannot afford *not* to work, given the limited availability of social protection or other forms of transfers. Hence, employment growth has been observed to closely track labour force growth, rather than being led by economic demand. A corollary is that unemployment in DCs is not an adequate measure of the state of the labour market. ... Hence employment growth has been observed to closely track labour force growth, rather than being led by economic demand ... unemployment in DCs is not adequate measure of the state of the labour market.” (p. 33), ILO (2014),

includes informal/vulnerable employment is not a good index of how well the economy is faring. Similarly, unemployment data are also not a good index of the (negative) welfare of working people. We need to have detailed information on the quality of employment.

**Figure 18: GDP Growth and Employment Growth in China and India**



Source: WDI

As discussed above, the data on employment in developing countries is probably a better measure of the population of working age rather than employment in terms of wage labour or some kind of formal employment. Hence, attempts by authors to estimate Okun’s Law for developing countries are not very helpful in understanding the development of labour markets in developing countries. For example, An et al. (2017) estimate Okun’s Law regressions allowing for structural breaks, but do not really explain changes in these labour markets.<sup>43</sup> Similarly, in developing countries unemployment is not a good measure of the slackness in the labour market. A similar argument applies to work that provides estimates of “employment

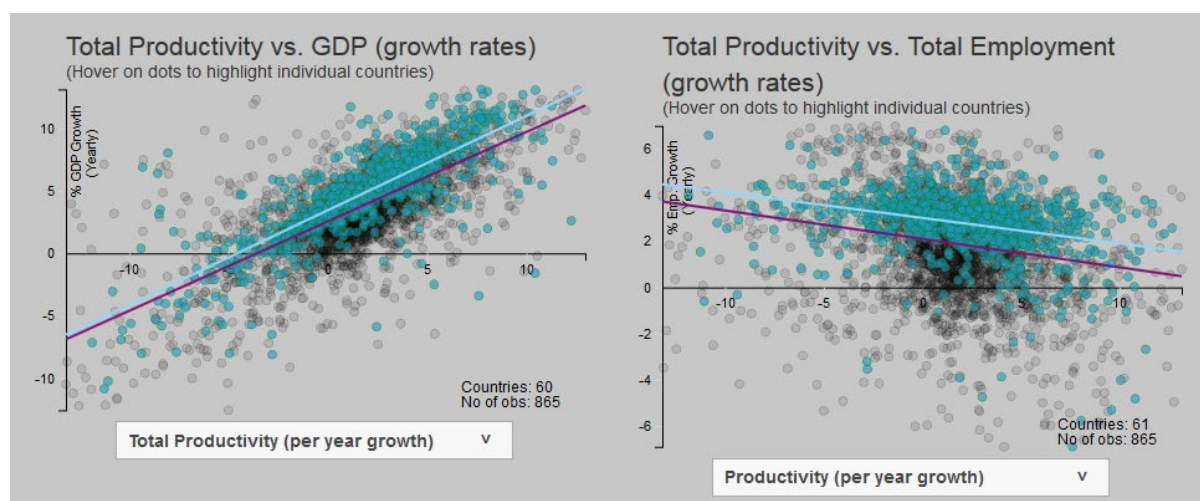
INTERNATIONAL LABOUR ORGANISATION 2014b. *World of Work 2014: Developing with Jobs*, Geneva, International Labour Organisation.

<sup>43</sup> Similarly, Crivelli et al. (2012) who look at the impact of policies on employment intensity on a cross-section of countries use “employment” data, which as mentioned above, are suspect.

elasticities” for developing countries. The World Development Report 2013 shows that employment elasticities vary greatly over time and space and are not reliable. They find that growth of the agricultural, construction, and service sectors lead to bigger increases in employment than the manufacturing sector.

There is a significant literature on whether countries with faster productivity growth have faster employment growth. In a paper, Dew-Becker and Gordon find a “strong and robust negative correlation between the growth of labour productivity and employment per capita across the EU-15”, Dew-Becker and Gordon (2012). In some earlier work, Junankar (2016) found a negative relation between productivity growth and employment growth. If we look at the World Bank Jobs Dashboard we find that the graphs for different country groups by levels of income show a negative relation, see Figure 19 below. However, as discussed above since the employment (unemployment) variable is not a good measure of labour demand in developing countries these results are not very meaningful for developing countries.

**Figure 19: Low Income Countries, 1992-2014**



*Source:* World Bank Jobs Dashboard

Some of the earlier studies on growth look at the relation between growth and poverty. An early study by Dollar and Kraay (2002) regresses log of per capita income of the poor on the log of average per capita income (assuming log normal income distribution) and find a positive coefficient (almost equal to one). Hence, they argue that growth is good for the poor. They use cross country data on 137 countries from 1950 to 1999.

There were several papers that followed this line of enquiry, see Ravallion (2001) and Bourguignon (2004) who essentially argue that although there may be some average relation

between growth and poverty there are very significant differences when we look at individual countries. Donaldson (2008) criticises Dollar and Kraay and uses the same data set and looks at the probability that the residuals came from the estimated line. In effect he argues that Dollar and Kraay may explain averages but there are significant divergences from the averages. World Bank (2015) also discusses the changes in poverty in relation to the different types of employment (by sector, by skill, and by education. It also argues that a minimum wage (although not enforced for a significant group) may also have a “lighthouse effect”, that is it may influence wages in the informal sector.

What is important for the population of working age in developing countries is not “employment” as almost anyone who can work (including very young children) must do some kind of work, whether it is collecting plastic bags from rubbish heaps or selling newspapers on the streets. What is important is whether people have “decent work”. In other words, we need to know if economic growth is leading to work that is providing a decent wage or income under reasonable working conditions. In an interesting paper, Ramos et al. (2015) look at the quality of employment in Latin America. They observe a positive correlation between the quality of employment (defined over variables like formal contract, pension system, union membership, health insurance, etc.) and per capita GDP, and a negative correlation between temporary employment and the per capita GDP.

There is very limited evidence on growth and the quality of employment in developing areas. The ILO recommends that it monitors (a) the share of working poor, (b) the share of workers in vulnerable employment, and (c) labour productivity.

#### **4.6 Evidence from International Agencies**

The IMF Report on Jobs and Growth (2013) emphasises the difference between Developed and Developing countries labour markets. In particular, it stresses the importance of “informal” labour markets and the fragmentation of the labour markets, and the importance of increasing female labour force participation. Interestingly it comments on the limited role of formal labour market institutions and suggest that minimum wages have limited (if any) effects on employment, however, it reduces income inequality. It also emphasises that although growth is important for employment it is not a sufficient condition for job creation and social cohesion. It commends the policies introduced in Brazil (1990-2009) that improved macroeconomic

stability and its social policy (*Bolsa Familia*) that helped the labour market and lowered poverty and inequality.

An early World Bank Survey (Squire, 1981) studied the factors that affect labour demand and supply and was not really studying the operation of labour markets. However, it emphasised the role of market (“getting prices right”), improving information flows and correcting market imperfections. Looking at it with hindsight it appears to ignore issues to do with poverty and inequality.

The World Development Report 2013 made a significant contribution to the study of employment in developing countries. The Report emphasises that “[N]early half the people at work in developing countries are farmers or self-employed and so are outside the labour market.” (p. 3) It also emphasises that the private sector is the main engine of employment growth, even in China. It also argues that during economic growth there is Schumpeterian job creation and job destruction. Government labour policies have a modest impact on employment creation. It also argues that the focus of policies should not be on growth but more on jobs. Jobs rather than growth are more likely to reduce poverty and increase social cohesion.

In a recent World Bank publication (2015) it states that labour markets were the main channel through which growth reduced poverty in Latin America and the Caribbean since 2003, although its importance decreased since after the Global Crisis (2008-2013). It also suggests that income transfers etc. contributed to 33 % reduction in poverty in 2003-2008, and 39 % from 2008-2013. Not surprising, most of the people in poverty come from the low skilled households. Most of the unskilled workers are either working in the informal sector or in small firms.

In an interesting paper Cho et al. (2012) study labour markets in developing countries by grouping countries not by income, but by clusters of characteristics (e.g. growth, structural change, age composition). Policies towards these different clusters lead to different labour market outcomes.

In a World Bank Policy Research Working Paper, Ayyagari et al. (2016) explore the links between finance and employment growth. Their ES sample of firms in developing countries are heavily biased to firms that have remained for seventeen years (!), are likely to be exporters (23 %) or foreign owned (10 %), and 21 % report to be part of a larger ownership structure. They find a significant link between finance and employment growth. However, given the distribution of firms in the sample, we are not sure how representative it is of firms in



developing countries. In many developing countries, many small firms die and new ones are set up. This research ignores this important element of firm behaviour.

#### **4.6.1 Some ILO Studies**

Rasheda Selim (2006) in an older paper provides a synthesis of country studies of Bangladesh, Bolivia, and Ethiopia in the 1990s. It argues that:

- Sustained economic growth is crucial for poverty reduction
- Economic growth has to be pro-poor, if it is to make a dent on poverty reduction
- Productive employment is essential for pro-poor growth.

Not surprisingly, it argues that “[E]conomic growth does not contribute to higher employment automatically.” (p. 4) It depends on the output elasticity of employment, which depends on the sectoral composition of output (whether it is in labour intensive industries), choice of technique, and terms of trade. The paper is primarily descriptive and provides some statistical averages of growth, employment, and poverty. As mentioned earlier, there are problems with using “employment” as an indicator of the strength of labour demand and hence we need to be cautious in interpreting this paper.

In a more recent study, Majid Nomaan and Sarma Nayantara (2018) study employment and growth in Indonesia (1990-2015). Using data from the World Bank Indicators and from the Indonesian National Labour Force Surveys (Sakernas) the authors study changes in growth that fell significantly resulting from the Asian Financial Crisis (1997-1998) but was only marginally affected by the Global Crisis on 2008-09. They find that there was a move from industry towards agriculture and the service sector. Analysing changes in the labour market over the period 1990 to 2014 they observe that there was a significant increase in the unemployment rate after the Asian Crisis as there was a big fall in the growth rate (in fact a negative growth rate of 13.1 percent in 1998). At the same time poverty rates went up and then slowly declined until 2014.

Turning to changes in the quality of employment, they find that there was an increase in “regular employment”. Regular employment does not mean permanent contracts but includes short term contracts excluding casual employment. Most of the increase in the share of regular employment was in the Service sector and Agricultural sector. Curiously, there was a decrease in regular employment in the Industrial sector between 2001 and 2008 and then a slight increase until 2014. The share of Casual Employment increased from 2001 to 2008 in Agriculture and Industry before a slight fall until 2014. Self-Employment fell significantly in Agriculture from

82 % in 2001 to 18 % in 2014, while in Industry it went up from 27 % to 44 %. Overall, they argue that the Employment Situation Index<sup>44</sup> has improved from 2001 to 2014. The paper concludes with the observation that there has been an improvement overall in the labour market as growth has increased. It should be noted that the analysis is mainly descriptive as the time series data were very limited to carry out any econometric analysis.

The ILO World of Work Report 2014(2014b) shows that those developing countries that invested in quality jobs from the early 2000s did better than the rest of the countries in terms of per capita income. Similarly, those countries that reduced the incidence of vulnerable employment had more rapid growth after 2007. Interestingly, the Report also argues that those countries that introduced policies to improve social welfare (e.g. *Bolsa Familia* in Brazil, or the Mahatma Gandhi National Rural Employment Guarantee Act in India) had better health and educational outcomes.

In an Econometric Appendix, the ILO World of Work Report 2014 estimates equations (using five year averages) to explain the GDP growth rate/GDP per capita growth in terms of the growth rate of manufacturing or by Industry growth (excluding manufacturing). Using panel estimation methods with Fixed Effects the Report estimates separate equations for Least Developed Countries (LDCs), Low Middle Income Countries (LMIs), and Emerging Economies (EEs), and for the full sample. They find that the results support the important role of manufacturing. They also find that manufacturing growth contributes more to GDP growth the richer the developing countries. However, there is a problem: essentially, they are regressing a whole on a part (unless the GDP growth rate is for non-manufacturing, or non-Industry). If for example, the variance of manufacturing is very large compared to the variances of non-manufacturing, then the growth rate of GDP is dominated by this variance. The results would then be spurious. Ideally, they should estimate the rate of GDP less manufacturing (or industry) and regress that on the manufacturing growth rates. However, they conclude that:

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<sup>44</sup> The Employment Situation Index is an equally weighted index of Agricultural (Labour) Productivity, one minus the Unemployment Rate, and the Share of Regular Employment. The justification for using Agricultural Productivity is that an increase in it is due to improved technology or due to a shift in labour to higher productivity sectors. Given that there was a big increase in Agricultural Productivity over this period it completely dominates the other variables. Given they have stated clearly in the paper that the unemployment rate is not very meaningful in Indonesia (as in many developing countries), it is strange that they include this variable in their Employment Situation Index.

“In essence, the results obtained here tested for 145 DCs observed over the past three decades support Kaldor’s first law, that manufacturing growth is the more important determinant of GDP growth.” (p. 31)

As mentioned above, this conclusion may have to be treated with some caution.

A study by Kapsos and Bourmpoula (2013) found that wage employment does not necessarily remove people from poverty although it does better than people in vulnerable employment.

#### **4.7 Latin America and the Caribbean (LAC)**

In a paper assessing recent developments in the LAC markets, Weller (2014), shows that there was a significant improvement in labour markets between 2003 and 2012. Rapid economic growth, partly due to improving commodity prices and terms of trade, led to lower open unemployment rates, increased employment rates, lower poverty rates, and decreased inequality. The paper also emphasises the improvement in the quality of employment as formal labour markets increased (informality decreased), again partly due to increased unionisation of workers, and the institution of minimum wages (or better enforcement). Over the relevant period labour productivity was improving and employment was shifting from low productivity sectors to higher productivity sectors. Using shift-share analysis, Weller finds that average productivity growth was faster in the period 2002-2012 compared to the period 1990-2002), and that structural change “explained” almost a third of the productivity growth. This productivity growth enabled higher wages and helped to lower poverty. Wage growth (i.e. formal employment) increased with economic growth: sectors that expanded included construction and there was growth in skilled worker employment.

We now turn to look at a contribution to the literature on growth and employment that looks at various indicators of employment in detailed studies made for Latin America by Cruces et al. (2017).

##### **4.7.1 Growth, Employment and Poverty in Latin America**

Guillermo Cruces, Gary S. Fields, David Jaune, and Mariana Viollaz (2017) provide a detailed study of several Latin American countries using time series data. Their research aims to answer the following questions:

1. Has economic growth resulted in gains in standards of living and reductions in poverty via improved labour market conditions in Latin America in the 2000s?
2. Have these improvements been reversed since the Global Crisis?

### 3. What is the relation between growth, employment, poverty, and inequality?

They emphasise that growth helps to lower poverty mainly through the channel of employment in terms of earnings, hours of work, and the quality of jobs held. Another important channel of lowering poverty is via social programmes that are possible through higher tax revenues that accompany growth.

“Improvements in labour market conditions are associated with: a decrease in unemployment; increases in the shares of high-earnings occupations, wage/salaried employees, workers in high earnings sectors, and workers with high levels of education; an increase in monthly labour earnings; ... declines in poverty and inequality indicators.” (p. 14)

Their overall conclusions are that the 2000s were a time of strong improvement in the growth-employment-poverty nexus in Latin America, with the only exception being Honduras. High economic growth was possible because of favourable external conditions which in turn made additional resources available for introducing social programmes.

The authors use microeconomic data from more than 150 households' surveys for 16 Latin American countries. In Chapter 3 (a purely descriptive chapter), they show that using unweighted averages of all these Latin American countries that there are positive movements in almost all the labour indicators as GDP per capita was increasing from 2000 to 2012. These positive movements were true for most of the set of countries, although there were a few exceptions (especially Honduras). Most countries improved shortly after the Global Crisis in terms of GDP per capita, poverty rates increased during the Crisis in only a few countries, but they implemented social programmes to combat it. Most of the labour market indicators recovered shortly after the Crisis.

Chapter 4 carries out Cross-Country Analysis of the Growth-Employment-Poverty nexus. Using regression analysis (on cross-country data) on the percentage change in selected labour market indicators on GDP per capita, they find that there was not a significant relation for any of the labour market indicators. They subsequently regress changes in each labour market indicator on each of eleven different macroeconomic indicators (one at a time) that include the share of industry in GDP, Exports as a percentage of GDP, Terms of Trade, and Foreign Direct Investment. They find that, in general, the share of industry in GDP, improvements in the Terms of Trade, and the share of Exports in GDP help to improve some of the labour market indicators. Although these provide some interesting insights they do not provide serious confirmation or rejection of any hypotheses. It would be better if they had estimated a complete

model where the labour market indicators are not independent of each other and regressed them on a set of macroeconomic indicators, allowing for cross-correlations across equations (perhaps using Zellner's Seemingly Unrelated Regressions Estimators). Alternatively, they could have used panel estimation methods which may have provided more meaningful results. They provide some simple evidence for cross-correlations between different labour market indicators by providing simple correlations.

Subsequent chapters of the book provide much detail in country by country studies.

Overall, the book is interesting in providing much detailed information about several different labour market indicators. As such, the book makes an important contribution by studying different aspects of the labour market rather than simply looking at aggregate employment or unemployment.

## 5. Some Conclusions

This paper has provided a literature survey of Monetary Policy, Growth, and Employment in Developing Countries. We discussed the limited role that monetary policy plays in developing countries since a large share of GDP is in the Agricultural sector that has a large proportion of family run farms that use family labour. We also argued that since money plays a small role in developing countries: many transactions take place informally, money as a share of GDP is very low, very few people have bank accounts, and there are very few bank branches. Financial markets and the banking system are relatively undeveloped. Much of the literature studied the role of monetary policies in controlling inflation: the evidence that it was successful in developing countries was mixed. There was limited research that looked directly at links between monetary policy and growth: it was usually *assumed* that if inflation was controlled it would lead to higher levels of investment and growth.

The literature on monetary policy, growth and employment was again primarily about growth and employment, without any necessary link between monetary policy and employment. It was argued that the concept of employment for developing countries was not very meaningful as it simply followed population (or labour force) growth as people engaged in a range of activities that were not wage labour but informal work. We argued that there was a need to study the quality of employment in terms of “decent work”: work that was well paid, safe, secure, etc. Employment had to be separated into its components by sector, by methods of payment, and conditions of work.

Overall, we argued that developing countries are diverse: each country has a different history, culture, and economic and political institutions. Some of these countries had been colonised for decades and left with economic structures that were not favourable to growth and development. In some countries there were major political changes from authoritarian dictatorships to more modest democratic systems. Given these special circumstances it is difficult to argue for a set of policies that can be applied to all countries.

## References

- ABUKA, C., ALINDA, R. K., MINOIU, C., PEYDRO, J.-L. & PRESBITERO, A. F. 2015. Monetary policy in a developing country: loan applications and real effects. *IMF Working Paper*, 15, 1-36.
- AGUR, I. & DEMERTZIS, M. 2015. Will macroprudential policy counteract monetary policy's effects on financial stability? *IMF Working Paper*, 15, 1-23.
- AHMED, S. & ISLAM, M. E. 2004. The monetary transmission mechanism in Bangladesh: bank lending and exchange rate channels. *The Bangladesh Development Studies*, 30, 31-87.
- AN, Z., GHAZI, T. & PIETO, N. G. 2017. Growth and jobs in developing economies: trends and cycles. *IMF Working Paper*, WP/17/257.
- AYRES, K., BELASEN, A. B. & KUTAN, A. M. 2014. Does Inflation targeting lower inflation and spur growth? *Journal of Policy Modeling*, 36, 373-388.
- AYYAGARI, M., JUARROS, P., PERIA, M. S. M. & SINGH, S. 2016. Access to finance and growth. *Policy Research Group, World Bank*.
- BANERJEE, A. & DUFLO, E. 2005. Growth Theory through the Lens of Development Economics. In: AGHION, P. & DURLAUF, S. N. (eds.) *Handbook of Economic Growth*. Amsterdam: Elsevier Science.
- BARBOSA-FILHO, N. H. 2008. Inflation targeting in Brazil: 1999-2006. *International Review of Applied Economics*, 22, 187-200.
- BATINI, N. & LAXTON, D. 2007. Under what conditions can inflation targeting be adopted? The experience of emerging markets. In: MISHKIN, F. S. & SCHMIDT-HEBBEL, K. (eds.) *Monetary policy under inflation targeting*. Santiago, Chile: Central Bank of Chile.
- BENLAMINE, M., BULIR, A., FAROUKI, M., HORVATH, A., HOSSAINI, F., IDRISSE, H. E., IRAOUI, Z., KOVACS, M., LAXTON, D., MAAROUFI, A., SZILAGYI, K., TAAMOUTI, M. & VAVRA, D. 2018. Morocco: a practical approach to monetary policy analysis in a country with capital controls. *IMF Working Paper*, 18, 1-29.
- BERG, A., CHARRY, L., PORTILLO, R. & VLCEK, J. 2013. The Monetary Transmission Mechanism in the Tropics: A Narrative Approach. Washington DC: International Monetary Fund.
- BERNANKE, B. & GERTLER, M. 1995. Inside the black box: the credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9, 27-48.
- BERNANKE, B., GERTLER, M. & GILCHRIST, S. 1994. The financial accelerator and the flight to quality. *NBER Working Paper 4789*.
- BLANCHARD, O., DELL'ARICCIA, G. & MAURO, P. 2010. Rethinking Macroeconomic Policy. *Journal of Money, Credit and Banking*, 42 (supplement), 199 - 215.
- BLANCHARD, O. & SUMMERS, L. 2017. Rethinking Stabilization Policy. Back to the Future. *Rethinking Macro Policy*. Peterson Institute for International Economics.
- BOURGUINON, F. 2004. The Poverty-Growth-Inequality Triangle. *Indian Council for Research on International Economic Relations*. New Delhi.
- BRITO, R. D. & BYSTEDT, B. 2010. Inflation targeting in emerging economies: panel evidence. *Journal of Development Economics*, 91, 198-210.
- CAMPANTE, F. & CHOR, D. 2012. Why was the Arab World Poised for Revolution? Schooling, Economic Opportunities, and the Arab Spring. *Journal of Economic Perspectives*, 26, 167-188.
- CARLSTROM, C. T. & FUERST, T. S. 1997. Agency costs, net worth, and business fluctuations: a computable general equilibrium analysis. *American Economic Review*, 87, 893-910.
- CECCHETTI, S. G. 1995. Inflation indicators and inflation policy. *NBER Working Paper*.
- CHO, Y., MARGOLIS, D., NEWHOUSE, D. & ROBALINO, D. 2012. Labour Markets in Middle and Low Income Countries. *Social Protection and Labour Discussion Paper No. 1207*.
- CHOI, S., FURCERI, D. & LOUNGANI, P. 2018. Inflation anchoring and growth: evidence from sectoral data. *IMF Working Paper*, 18, 1-37.
- CHOWDHURY, A. 2006. The "stabilization trap" and poverty reduction-what can monetary policy do? *Indian Development Review*, 4, 407-432.

- CHOWDHURY, A. 2018. Monetary Policy for Inclusive and Sustainable Development. *Macroeconomic Policies in Countries of the Global South*. Berlin, Germany.
- CHOWDHURY, A. & HAM, R. 2009. Inflation Targeting in Indonesia: Searching for a Threshold. *Singapore Economic Review*, 54, 645-655.
- CHOWDHURY, A. & ISLAM, I. 2010. Rethinking Macroeconomics from the Perspective of the Millennium Development Goals in the Post-Crisis Era. *A commentary in the Vox-EU Debate on the Global Crisis - Development and the Crisis*.
- CHRISTIANO, L. J., EICHENBAUM, M. & EVANS, C. 1999. Monetary policy shocks: what have we learnt and to what end? In: TAYLOR, J. B. & WOODFORD, M. (eds.) *The Handbook of Macroeconomics*. Amsterdam: North Holland Publishing Co.
- CRIVELLI, E., FURCERI, D. & TOUJAS-BERNATE, J. 2012. Can Policies affect Employment Intensity of Growth? A Cross-Country Analysis. *IMF Working Paper WP/12/218*.
- CRUCES, G., FIELDS, G. S., JAUME, D. & VIOLLAZ, M. 2017. *Growth, Employment, and Poverty in Latin America*, Oxford, Oxford University Press.
- CUKIERMAN, A., WEBB, S. B. & NEYAPTI, B. 1992. Measuring the independence of central banks and its effects on policy outcomes. *World Bank Economic Review*, 6, 353-398.
- CUSHMAN, D. O. & ZHA, T. 1995. Identifying monetary policy in a small open economy under flexible exchange rates. *Working paper 95-7, Federal Reserve Bank of Atlanta*.
- DABLA-NORRIS, E., KOCHHAR, K., SUPHAPHIPHAT, N., RICKA, F. & TSOUNTA, E. 2015. *Causes and Consequences of Inequality: A Global Perspective*, Washington DC, International Monetary Fund.
- DAS, S. 2015. Monetary policy in India: transmission to bank interest rates. *IMF Working Paper*, 15, 1-33.
- DE MENDOCA, H. F. & E SOUZA, G. J. D. G. 2012. Is inflation targeting a good remedy to control inflation? *Journal of Development Economics*, 98, 178-191.
- DEW-BECKER, I. & GORDON, R. J. 2012. The Role of Labour-Market Changes in the Slowdown of European Productivity. *Review of Economics and Institutions*, 3, 1-45.
- DIZIOLI, A. & SCHMITTMANN, J. M. 2015. A macro-model approach to monetary policy analysis and forecasting for Vietnam. *IMF Working Paper*, 15, 1-25.
- DOLLAR, D. & KRAAY, A. 2002. Growth is good for the Poor. *Journal of Economic Growth*, 7, 195-225.
- DONALDSON, J. A. 2008. Growth is Good for Whom, When, How? Economic Growth and Poverty Reduction in Exceptional Cases. *World Development*, 36, 2127-2143.
- DRINE, I. 2012. Youth unemployment and the Arab Spring. *UNU-WIDER*.
- DURLAUF, S. N., JOHNSON, P. A. & TEMPLE, J. R. W. 2005. Growth Econometrics. *Handbook of Economic Growth*. Elsevier.
- FASANO-FILHO, U. 1996. Economic policy making in Sub-Saharan Africa and IMF involvement. *The Quarterly Review of Economics and Finance*, 36, 115 - 151.
- FILHO, G. M. M.-F. 2010. Inflation Targeting and the Crisis: An Empirical Assessment. Washington DC: International Monetary Fund.
- FISCHER, S. 1987. Economic growth and economic policy. In: CORBO, V., GOLDSTEIN, M. & KHAN, M. (eds.) *Growth-Oriented Adjustment Programs*. Washington DC: The International Monetary Fund and the World Bank.
- FRIEDMAN, M. 1962. Should there be an independent monetary authority? In: YEAGER, L. B. (ed.) *In search of a monetary constitution*. Cambridge, Massachusetts: Harvard University Press.
- GALINDO, L. M. & ROS, J. 2008. Alternatives to inflation targeting in Mexico. *International Review of Applied Economics*, 22, 201-214.
- GERLACH, S. & TILLMANN, P. 2012. Inflation targeting and inflation persistence in Asia-Pacific. *Journal of Asian Economics*, 23, 360 - 373.
- GHAZANCHYAN, M. 2014. Unraveling the monetary policy transmission mechanism in Sri Lanka. *IMF Working Paper*, 14, 1-42.



- GILCHRIST, S. & SAITO, M. 2006. Expectations, asset prices, and monetary policy: the role of learning. *NBER Working Paper No. 12442*.
- GOLDSBROUGH, D., ADOVOR, E. & ELBERGER, B. 2007. Inflation Targets in IMF-Supported Programs. *Center for Global Development Working Group on IMF Programs and Health Expenditures Background Paper, 1 - 9*.
- GOLLIN, D. 2014. The Lewis Model: A 60-Year Retrospective. *Journal of Economic Perspectives, 28, 71-88*.
- GONCALVES, C. E. S. & SALLES, J. M. 2008. Inflation targeting in emerging economies: what do the data say. *Journal of Development Economics, 85, 312-318*.
- GRILLI, V. & ROUBINI, N. 1995. Liquidity models in open economies: theory and empirical evidence. *Working Papers 96-16, New York University, Leonard N. Stern School of Business, Department of Economics*.
- HAMMOND, G., KANBUR, R. & PRASAD, E. 2009. Monetary policy challenges for emerging market economies. In: HAMMOND, G., KANBUR, R. & PRASAD, E. (eds.) *Monetary policy framework for emerging markets*. Cheltenham, UK: Edward Elgar.
- HANSEN, B. E. 1999. The grid bootstrap and the autoregressive model. *The Review of Economics and Statistics, 81, 594-607*.
- IEO 2007. The IMF and Aid to Sub-Saharan Africa. Washington D.C.: Independent Evaluation Office, International Monetary Fund.
- IMF 2006. Inflation targeting and the IMF. Washington DC: International Monetary Fund.
- IMF 2015a. Evolving monetary policy frameworks in low-income and other developing countries. In: TIWARI, S., OBSTFELD, M. & VINALS, J. (eds.). Washington D.C.: International Monetary Fund.
- IMF 2015b. Evolving monetary policy frameworks in low-income and other developing countries- background paper: country experience. Washington D.C.: International Monetary Fund.
- IMF 2018. World Economic Outlook. Washington: IMF.
- INTERNATIONAL LABOUR ORGANISATION 2014a. *Transitioning from the Informal to the Formal Economy, International Labour Conference, 103rd Session*. Geneva.
- INTERNATIONAL LABOUR ORGANISATION 2014b. *World of Work 2014: Developing with Jobs*, Geneva, International Labour Organisation.
- INTERNATIONAL LABOUR ORGANISATION 2016-17. Global Wage Report. Geneva: International Labour Organisation.
- INTERNATIONAL LABOUR ORGANISATION 2018. World Employment and Social Outlook: Trends. ILO.
- INTERNATIONAL MONETARY FUND 2013. Jobs and Growth: Analytical and Operational Considerations for the Fund. *IMF Policy Paper*.
- INTERNATIONAL\_FINANCE\_CORPORATION 2013. IFC Jobs Study: Accessing Private Sector Contributions to Job Creation and Poverty Reduction. Washington DC: International Finance Corporation.
- INTERNATIONAL\_LABOUR\_ORGANISATION. 2011. Youth Unemployment in the Arab World is a major cause for rebellion. Available: [https://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS\\_154078/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_154078/lang--en/index.htm).
- INTERNATIONAL\_LABOUR\_ORGANISATION 2013. Revision of the International Classification of Status in Employment (ICSE-93). Geneva: ILO.
- IRELAND, P. N. 2005. The monetary transmission mechanism. In: BLUME, L. & DURLAUF, S. (eds.) *The New Palgrave Dictionary of Economics*. 2nd ed. Hampshire: Palgrave Macmillan Ltd.
- ISLAM, M. S. 2008. Commodity boom and inflation challenges for Bangladesh. *Institute of South Asian Studies Working Paper, National University of Singapore, 1 - 20*.
- JHA, R. 2008. Inflation targeting in India: issues and prospects. *International Review of Applied Economics, 22, 259-270*.
- JONGWANICH, J. & PARK, D. 2009. Inflation in Developing Asia. *Journal of Asian Economics, 20, 507 - 518*.

- JUNANKAR, P. N. 2016. Is there a trade-off between Employment and Productivity? *In: CHATANI, K. & ISLAM, I. (eds.) Employment Targeting: Macroeconomic and Sectoral Approaches*. Geneva: International Labour Organisation.
- KAPSOS, S. & BOURMPOULA, E. 2013. Employment and Economic Class in Developing World. *ILO Research Paper No. 6*.
- KHAN, M. S. 2010. The Design and Effects of Monetary Policy in Sub-Saharan African Countries. *In: ECONOMICS, P. I. O. I. (ed.)*. Washington DC.
- KHAN, M. S. & SENHADJI, A. S. 2001. Threshold Effects in the Relationship Between Inflation and Growth. *IMF Staff Papers*, 48, 1-21.
- KHAN, S. U. & SAQIB, O. F. 2011. Political instability and inflation in Pakistan. *Journal of Asian Economics*, 22, 540 - 549.
- KUTTNER, K. N. & MOSSER, P. C. 2002. The monetary transmission mechanism: some answers and further questions. *Federal Reserve Bank of New York Economic Policy Review*, 15-26.
- LEVIN, A. T., NATALUCCI, F. M. & PIGER, J. M. 2004. The macroeconomic effects of inflation targeting. *Review-Federal Reserve Bank of Saint Louis*, 86, 51-58.
- LEWIS, A. W. 1954. Economic Development with Unlimited Supplies of Labour. *Manchester School*, 22, 139-191.
- LEWIS, A. W. 1979. The Dual Economy Revisited. *Manchester School*, 47, 211-229.
- LIM, J. 2008. Central banking in the Philippine: from inflation targeting to financing development. *International Review of Applied Economics*, 22, 271 -285.
- LIN, S. & YE, H. 2009. Does inflation targeting make a difference in developing countries? *Journal of Development Economics*, 89, 118-123.
- LUCAS, R. E. 1980. Two Illustrations of the Quantity Theory of Money. *American Economic Review*, 70, 1005-1014.
- MALIK, A. & AWADALLAH, B. 2013. The Economics of the Arab Spring. *World Development*, 45, 296-313.
- MISHKIN, F. S. 1995. Symposium on the monetary transmission mechanism. *Journal of Economic Perspective*, 9, 3-10.
- MISHKIN, F. S. 2004. *The Economics of Money, Banking, and Financial Markets*, New York, Pearson, Addison Wesley.
- MISHKIN, F. S. & SCHMIDT-HEBBEL, K. 2007. Does inflation targeting make a difference? *NBER Working Paper*, 1-64.
- MISHRA, A. & MISHRA, V. 2009. Preconditions for inflation targeting in an emerging economy: the case of India. *Monash University Development Research Unit Discussion Paper*, 1-32.
- MISHRA, A. & MISHRA, V. 2012a. Evaluating inflation targeting as a monetary policy objective for India. *Economic Modelling*, 29, 1053-1063.
- MISHRA, A. & MISHRA, V. 2012b. Inflation targeting in India: A comparison with the multiple indicator approach. *Journal of Asian Economics*, 23, 86-98.
- MISHRA, P. & MONTIEL, P. 2012. How effective is monetary transmission in low-income countries? A survey of the empirical evidence. *Economic Systems*, 37, 187-216.
- MISHRA, P., MONTIEL, P. J. & SPILIMBERGO, A. 2012. Monetary transmission in low-income countries: effectiveness and policy implications. *IMF Economic Review*, 60, 270-302.
- MODIGLIANI, F. 1971. Monetary policy and consumption. *Consumer spending and monetary policy*. Boston: Federal Reserve Bank of Boston.
- MOHAN, R. & PATRA, M. 2009. Monetary policy transmission in India. *In: HAMMOND, G., KANBUR, R. & PRASAD, E. (eds.) Monetary policy framework for emerging markets*. Cheltenham, UK: Edward Elgar.
- MORAWETZ, D. 1974. Employment Implications of Industrialisation in Developing Countries: A Survey. *IBRD Bank Staff Working Paper No. 170*.
- MUNDY, S. 2018. Former Indian central bank governor Rajan wades into row. *Financial Times*, November 7, 2018.

- MUZAFFAR, A. T. 2013. *Macro policies targeting low inflation: revisiting the conventional wisdom in selected developing countries of Asia*. PhD thesis, Western Sydney University.
- NARANPANAWA, A. & BANDARA, J. S. 2012. Poverty and growth impacts of high oil prices: Evidence from Sri Lanka. *Energy Policy*, 45, 102 - 111.
- NORMAAN, M. & NAYANTARA, S. 2018. Employment Growth in Indonesia (1990-2015). *ILO Employment Working Paper No. 239*.
- OBSTFELD, M. 2009. International finance and growth in developing countries: what have we learned? *IMF Staff Papers*, 56, 63-111.
- PRIMUS, K. 2016. The effectiveness of monetary policy in small open economies: an empirical investigation. *IMF Working Paper*, 16, 1-39.
- RAMAYANDI, A. & ROSARIO, A. 2010. Monetary policy discipline and macroeconomic performance: the case of Indonesia. *Asian Development Bank Working Paper Series*, 1 - 22.
- RAMOS, J., SEHNBRUCH, K. & WELLER, J. 2015. Quality of Employment in Latin America: Theory and Evidence. *International Labour Review*, 154, 171-194.
- RAVALLION, M. 2001. Growth, Inequality and Poverty: Looking beyond averages. *World Development*, 29, 1803-1815.
- RBI 2002. *Reserve Bank of India Bulletin*, Mumbai, Reserve Bank of India.
- SAMARINA, A. & DE HAAN, J. 2014. Right on target: exploring the factors leading to inflation targeting adoption. *Contemporary Economic Policy*, 32, 372-389.
- SELASSIE, A. A., CLEMENTS, B., TAREQ, S., MARTIJN, J. K. & DI BELLA, G. 2006. Designing monetary and fiscal policy in low-income countries. *IMF Occasional Paper*, i - 69.
- SELIM, R. 2006. Employment-Poverty linkages and pro-poor growth: A synthesis paper based on country studies of Bangladesh, Bolivia, and Ethiopia. Geneva: Economic and Labour Market Analysis Department, International Labour Organisation.
- SIMS, C. 1972. Money, income and causality. *American Economic Review*, 62, 540-552.
- SIREGAR, H. & WARD, B. D. 2001. Sources of fluctuations in the Indonesian economy: an application of a simple structural VAR model. *Singapore Economic Review*, 45, 73-98.
- SIREGAR, H. & WARD, B. D. 2002. Were aggregate demand shocks important in explaining Indonesian macroeconomic fluctuations? *Journal of the Asia Pacific Economy*, 7, 35 - 60.
- SIREGAR, R. & RAJAGURU, G. 2005. Sources of variations between the inflation rates of Korea, Thailand and Indonesia during the post-1997 crisis. *Journal of Policy Modeling*, 27, 876 - 884.
- SIREGAR, R. Y. & GOO, S. 2010. Effectiveness and commitment to inflation targeting policy: Evidence from Indonesia and Thailand. *Journal of Asian Economics*, 21, 113 - 128.
- SOWA, N. K. & ABRADU-OTOO, P. 2009. Inflation management and monetary policy formulation in Ghana. In: HAMMOND, G., KANBUR, R. & PRASAD, E. (eds.) *Monetary policy framework for emerging markets*. Cheltenham, UK: Edward Elgar.
- SQUIRE, L. 1981. *Employment Policy in Developing Countries: A survey of Issues and Evidence*, Washington DC, World Bank, Oxford University Press.
- STERN, N. & STIGLITZ, J. 1996. A framework for a development strategy in a market economy: objectives, scope, institutions and instruments. *Working paper # 20, European Bank for Reconstruction and Development*.
- SVENSSON, L. E. O. 2002. Are There Limits to the Use of Monetary Policy For Economic Stabilization? *Rethinking Stabilization Policy*. Federal Reserve Bank of Kansas City.
- SVENSSON, L. E. O. 2008. Inflation Targeting. In: DURLAUF, S. N. & BLUME, L. E. (eds.) *The New Palgrave Dictionary of Economics*. UK: Palgrave Macmillan.
- SWINBURNE, M. & CASTELLO-BRANCO, M. 1991. Central bank independence and central bank functions. In: DOWNES, P. & VAEZ-ZADEH, R. (eds.) *The evolving role of central banks*. Washington D.C: International Monetary Funds.
- TOBIN, J. 1969. A general equilibrium approach to monetary theory. *Journal of Money, Credit, and Banking*, 1, 15-29.

- VALERA, H. G. A., HOLMES, M. J. & HASSAN, G. M. 2017. How credible is inflation targeting in Asia? A quantile unit root perspective. *Economic Modelling*, 60, 194-210.
- VEGA, M. & WINKELRIED, D. 2005. Inflation targeting and inflation behaviour: a successful story? *International journal of Central Banking*, 1, 153-175.
- VINEY, C. & PHILLIPS, P. 2015. *Financial institutions, instruments, and markets*, Mcgraw Hill.
- WELLER, J. 2014. Aspects of recent developments in the Latin American and Caribbean labour markets. *CEPAL Review*, 114, 7-28.
- WORLD BANK 2013. *World Development Review 2013*. Washington DC: World Bank.
- WORLD BANK 2015. *Working to End Poverty in Latin America and the Caribbean: Workers, Jobs, and Wages*. Washington DC: World Bank.
- WORLD\_BANK 2008. *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. In: DEVELOPMENT, C. O. G. A. (ed.). Washington DC: World Bank.
- WORLD\_BANK 2011. *World Development Report 2012: Gender Equality and Development*. Washington DC: World Bank.
- WORLD\_BANK 2013. *World Development Review 2013*. Washington: World Bank.

## Appendix 1: Definition of Developing Countries

We define developing economies as those belonging to the Low Income and Lower Middle Income countries as defined by the World Bank.

The World Bank that is the major source for work on Development has the following classification of countries (see Appendix):

### World Bank GNI per capita Operational Guidelines & Analytical Classifications

<i>Date:</i>	1-Jul-2017
<i>Bank's fiscal year:</i>	FY18
<i>Data for calendar year :</i>	2016
<b>(presented in World Development Indicators)</b>	
<i>Low income</i>	<= 1,005
<i>Lower middle income</i>	1,006-3,955
<i>Upper middle income</i>	3,956-12,235
<i>High income</i>	> 12,235

In this Report our definition for “Developing Areas” is the World Bank definitions of Low Income, Lower Middle-Income, (and possibly Upper Middle-Income countries). The IMF definition of Emerging and Market Economies tends to include a diverse set of countries, some of them moving out of the former Soviet Union and its allies that face a very different set of challenges compared to developing economies many of whom were former colonies of the developed countries.

The IMF has a different classification: “The WEO divides the world into two major groups: advanced economies and emerging and developing economies. This classification is not based on strict criteria, economic or otherwise, and it has developed over time.” (WEO 2017, pp. 175-176)

Note that the above classification is NOT based on “strict criteria, economic or otherwise”!

“Emerging market and developing economies are also classified according to *analytical criteria*. The analytical criteria reflect the composition of export earnings and a distinction between net creditor and net debtor economies.” (WEO 2017, p. 176)

“The financial criteria focus on net creditor economies, net debtor economies, heavily indebted poor countries (HIPC), and low income developed countries (LIDC).” WEO 2017, p. 176). We note that the IMF now has a new definition of Low Income Developing Countries (LIDCs), IMF Policy Paper 2014) that define them as:

1. “Were designated PRGT-eligible in the 2013 PRGT eligibility exercise, **and**
2. Had a level of per capita Gross National Income (GNI) less than the PRGT income graduation for non-small states (i.e., 2 \* IDA-OP oor \$2,390).”

Note, however, that the World Bank (as of 2006) no longer classifies countries by indebtedness levels. (Source: World Bank 2018 Historical Classification of Countries, presented in Global Development Finance)



**Appendix: Table 2a Means of Financial Variables (2001-2015), Part 1**

	Bank accounts per 1,000 adults	Bank branches per 100,000 adults	Firms with a bank loan or line of credit (%)	Account at a formal financial institution (% age 15+)	Loan in the past year (% age 15+)	Loan from a private lender in the past year (% age 15+)	Loan from family or friends in the past year (% age 15+)	Firms using banks to finance investments (%)	Firms using banks to finance working capital (%)	Investments financed by banks (%)	Working capital financed by banks (%)	Private credit by deposit money banks to GDP (%)
<b>Means Low Income, 2001-2015</b>	101.11	2.55	22.29	15.49	43.21	5.87	36.87	13.07	19.27	8.01	7.81	12.82
<b>Means Lower Middle Income, 2001-2015</b>	493.27	11.15	30.43	27.26	40.51	5.15	28.35	19.11	23.88	12.15	10.39	26.66
<b>Means Upper Middle Income, 2001-2015</b>	611.99	19.21	40.68	48.46	34.86	4.05	23.62	27.85	31.78	18.31	12.49	40.37
<b>Means High Income, 2001-2015</b>	1180.95	35.87	49.29	86.92	31.16	1.94	15.15	31.78	34.02	19.15	12.76	82.35

Source: World Bank Global Financial Data Base, May 2017



**Appendix: Table 2b Means of Financial Variables (2001-2015), Part 2**

	Liquid liabilities to GDP (%)	Central bank assets to GDP (%)	Domestic credit to private sector (% of GDP)	Stock market total value traded to GDP (%)	Bank concentration (%)	Bank deposits to GDP (%)	H-statistic*	Lerner index#	Remittance inflows to GDP (%)	Consumer price index (2010=100, December)
<b>Means Low Income, 2001-2015</b>	28.65	11.07	14.31	7.11	78.75	18.60	0.44	0.28	5.88	2344.38
<b>Means Lower Middle Income, 2001-2015</b>	41.29	6.13	28.82	7.14	68.13	34.28	0.55	0.29	8.03	93.11
<b>Means Upper Middle Income, 2001-2015</b>	53.91	4.73	44.80	14.55	65.36	46.17	0.61	0.18	4.18	96.34
<b>Means High Income, 2001-2015</b>	89.12	3.02	89.44	50.70	72.40	83.28	0.58	0.24	1.33	95.59

\* Closer to one is perfect competition.

# Higher values mean less Bank competition.



**Appendix Table 3: Summary Statistics on Key Variables**

	<b>Means Low Income (1993- 2017)</b>	<b>Means Lower Middle Income (1993- 2017)</b>	<b>Means Upper Middle Income (1993-2017)</b>	<b>Means High Income (1993-2017)</b>
Agriculture, forestry, and fishing, value added (% of GDP)	29.41	18.99	9.05	1.56
Agriculture, forestry, and fishing, value added (annual % growth)	3.29	3.38	3.02	1.45
Employment in agriculture (% of total employment) (modeled ILO estimate)	72.11	49.54	30.02	4.19
Employment in agriculture, female (% of female employment) (modeled ILO estimate)	76.06	55.48	31.58	3.24
Employment in agriculture, male (% of male employment) (modeled ILO estimate)	68.90	46.73	28.87	4.91
Broad money (% of GDP)	31.11	54.36	91.98	109.70
Employment in industry (% of total employment) (modeled ILO estimate)	9.13	18.37	27.13	25.45
Employment in industry, female (% of female employment) (modeled ILO estimate)	7.13	13.73	24.74	13.58

Employment in industry, male (% of male employment) (modeled ILO estimate)	10.76	20.54	28.89	34.37
Employment in services (% of total employment) (modeled ILO estimate)	18.76	32.09	42.85	70.36
Employment in services, female (% of female employment) (modeled ILO estimate)	16.82	30.79	43.68	83.18
Employment in services, male (% of male employment) (modeled ILO estimate)	20.34	32.73	42.24	60.72
Employment to population ratio, 15+, female (%) (modeled ILO estimate)	60.14	36.76	54.45	47.22
Employment to population ratio, 15+, male (%) (modeled ILO estimate)	77.05	76.30	73.55	65.25
Employment to population ratio, 15+, total (%) (modeled ILO estimate)	68.43	56.73	63.99	56.06
Employment to population ratio, ages 15-24, female (%) (modeled ILO estimate)	49.44	26.07	42.04	38.11
Employment to population ratio, ages 15-24, male (%) (modeled ILO estimate)	57.95	52.36	52.13	42.57

Employment to population ratio, ages 15-24, total (%) (modeled ILO estimate)	53.70	39.57	47.21	40.40
Self-employed, female (% of female employment) (modeled ILO estimate)	83.39	75.87	43.32	13.03
Self-employed, male (% of male employment) (modeled ILO estimate)	74.61	69.87	42.78	18.70
Self-employed, total (% of total employment) (modeled ILO estimate)	78.54	71.79	43.01	16.27
Unemployment, female (% of female labor force) (modeled ILO estimate)	6.77	5.83	5.81	7.58
Unemployment, male (% of male labor force) (modeled ILO estimate)	5.18	4.44	5.95	6.85
Unemployment, total (% of total labor force) (modeled ILO estimate)	5.90	4.89	5.89	7.16
Unemployment, youth female (% of female labor force ages 15-24) (modeled ILO estimate)	13.19	13.76	15.31	16.84
Unemployment, youth male (% of male labor force ages 15-24) (modeled ILO estimate)	10.09	11.00	13.58	16.21

Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate)	10.97	11.87	14.01	16.28
Vulnerable employment, female (% of female employment) (modeled ILO estimate)	82.37	74.52	41.96	10.73
Vulnerable employment, male (% of male employment) (modeled ILO estimate)	72.03	67.16	38.64	13.04
Vulnerable employment, total (% of total employment) (modeled ILO estimate)	76.67	69.52	40.06	12.05
Wage and salaried workers, female (% of female employment) (modeled ILO estimate)	16.61	24.13	56.68	86.97
Wage and salaried workers, male (% of male employment) (modeled ILO estimate)	25.39	30.13	57.22	81.30
Wage and salaried workers, total (% of total employment) (modeled ILO estimate)	21.46	28.21	56.99	83.73
Labor force participation rate, female (% of female population ages 15+) (modeled ILO estimate)	64.51	39.04	57.81	51.09

Labor force participation rate, male (% of male population ages 15+) (modeled ILO estimate)	81.26	79.85	78.20	70.05
Labor force participation rate, male (% of male population ages 15-64) (modeled ILO estimate)	82.26	82.25	82.95	79.82
Labor force participation rate, female (% of female population ages 15-64) (modeled ILO estimate)	66.13	41.03	63.26	62.21
Labor force participation rate, total (% of total population ages 15-64) (modeled ILO estimate)	74.09	61.99	73.20	71.11
Labor force participation rate, total (% of total population ages 15+) (national estimate)		58.83	68.30	60.59
Population growth (annual %)	2.73	1.68	0.88	0.69
Foreign direct investment, net inflows (% of GDP)	2.74	1.89	2.81	2.60
Foreign direct investment, net outflows (% of GDP)	0.31	0.39	0.81	3.11
Domestic credit to private sector (% of GDP)	13.49	34.72	73.85	143.41
Domestic credit to private sector by banks (% of GDP)	12.86	34.02	70.47	87.42

GDP growth (annual %)	4.19	5.20	4.92	2.13
GDP per capita (constant 2010 US\$)	576.20	1413.30	5182.86	36253.01
GDP per capita growth (annual %)	1.42	3.47	4.01	1.43
GDP per capita, PPP (constant 2011 international \$)	1540.18	4189.39	10069.94	37013.42
GDP per person employed (constant 2011 PPP \$)	3532.64	11145.44	20396.25	81006.88
Gross capital formation (% of GDP)	19.68	26.63	30.82	22.31
Gross fixed capital formation (% of GDP)	20.49	24.49	28.81	21.91
Gross fixed capital formation, private sector (% of GDP)	12.07	19.58		
Imports of goods and services (% of GDP)	36.44	28.18	24.22	26.24
Industry (including construction), value added (% of GDP)	23.00	31.46	37.25	24.79
Inflation, GDP deflator (annual %)	7.24	7.08	6.86	2.20
Trade (% of GDP)	60.30	54.10	50.64	53.04
Inflation, consumer prices (annual %)	7.20	6.58	6.30	2.23
Literacy rate, adult female (% of females ages 15 and above)	43.90	60.11	88.11	
Literacy rate, adult male (% of males ages 15 and above)	62.89	77.33	94.30	
Literacy rate, adult total (% of people ages 15 and above)	53.22	68.82	91.20	



Mortality rate, infant, female (per 1,000 live births)	56.73	44.95	15.85	5.03
Mortality rate, infant, male (per 1,000 live births)	67.63	50.00	18.73	6.00
Manufacturing, value added (% of GDP)	9.31	17.50	21.34	15.23
Manufacturing, value added (annual % growth)	2.05	5.73		2.02
Mortality rate, adult, female (per 1,000 female adults)	285.81	181.57	102.50	66.37
Mortality rate, adult, male (per 1,000 male adults)	341.78	245.59	167.53	128.48
Mortality rate, infant (per 1,000 live births)	74.68	57.24	23.04	6.54