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Dollarization

:

A Literature Review of Developing Countries

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Dedication

To the memory of my late father, William F. Saamoi, Snr.

Acknowledgement

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List of Acronyms

IMF	International Monetary Fund
LOLR	Lender of Last Resort
OCA	Optimum Currency Area
WDI	World Development Indicators
WEO	World Economic Outlook
EMU	European Monetary Union

Abstract

While de-facto dollarization is not a new phenomenon, official dollarization is a novel development in monetary policy gaining momentum in many developing countries. This paper reviews the literature on the rationale for dollarization in developing countries; the empirical evidence lending support to the macroeconomic success of official dollarization; and the possibility of de-dollarizing economies which have been dollarized de-facto. It follows that the rationale for dollarization in developing countries is a conglomeration of assumptions which have no foundation in macroeconomic theory. Empirical evidence is neither suggestive nor conclusive of the macroeconomic success of officially dollarized countries. Forceful mechanisms to de-dollarize economies in developing countries have been met with undesirable economic and political outcomes. While market-driven mechanisms have somewhat proven to be successful, they require very long periods of negotiating policy credibility buy-backs and very high adjustment costs.

Relevance to Development Studies

Monetary policy is central to almost all countries economic growth agenda. The types of currency arrangements in monetary policy have often been the subject of currency crisis. Currency crises have often culminated into prolonged political crisis leading to a setback in economic development. The currency crises in Indonesia and Ecuador are classic examples to reflect on. As several developing countries are beginning to embrace the idea of adopting currencies of large economies as a way to insulate against recurrent currency shocks, it is important that the implications for economic growth and development are known aforehand. This research, though inconclusive, lays ground for policy decisions on dollarization in developing countries.

Keywords

Chapter 1
INTRODUCTION

1.1 Introduction

"The difficulties experienced in the commerce and modes of payment of any country from the competing action of the several commodities serving as currency, and further the circumstance, that concurrent standards induce a manifold insecurity in trade, and render necessary various conversions of the circulating media, have led to the legal recognition of certain commodities as money[...] Where more than one commodity has been acquiesced in, or admitted, as the legal form of payment, law or some system of appraisement has fixed a definite ratio of value amongst them" (Menger 1892:255). In this account, Menger claims that money did not originate by legal statutes but rather stems from social phenomenon. Alesina and Barro (2001) on the other hand point to the emerging difficulty in trade and finance in a global context occasioned by the proliferation of as many national currencies as independent countries following World War II.

The history of currency exchange dates as far back as the 1800s - the period of the classical gold standard era (1880 – 1914) when world currencies' exchange rates were fixed to gold reserves. During that period, inflation was almost non-existent with rates barely reaching 0.01 percent compared to 4.1 percent for the period 1946 – 2003.[1] Following the collapse of the gold standard during the First World War, a quasi-gold standard known as the Gold Exchange Standard was briefly used from 1925 to 1931. Under this standard, countries held British pounds, United States dollars or gold as reserve currencies. Under this scheme, only the United Kingdom and the United States were obliged to hold gold reserves. However, the system collapsed following Great Britain's break away after unprecedented gold and capital outflows. By and large, the standard was criticized for its inflexibility in terms of allowing monetary policy influence in tackling external shocks. This history of inflexibility clouds uncertainty over a return to that global regime as policy makers seek to use monetary policy flexibility to counter external shocks and unemployment (Bordo, n.d).

Despite the collapse of the gold standard, Hawtrey (1919) maintains that gold, as a common world currency offered more ease of exchange and stability to the international monetary system. He claims it was the misuse of the system, through monetizing budget deficits to fund the Second World War, which ruined it.

Following the gold standard was the emergence of the Bretton Woods monetary system – a system Bordo (1993) terms as the world's most recent experience with a fixed exchange rate system. Architects of the system intend-

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[1]Bordo (n.d.) 'Gold Standard', The Concise Encyclopaedia of Economics
<http://www.econlib.org/library/Enc/GoldStandard.html>

ed a monetary arrangement that would have simultaneously reflected the advantages of gold standard's fixity and a floating rate regime. It was a pseudo arrangement of the gold standard under which all other countries' currencies were anchored to the dollar, except the United States which in turn supported dollar supply by gold reserves. But it was a short-lived experience (December 18, 1946 - August 15, 1951).

Notwithstanding, Dooley, Folkerts-Landau and Garber (2003) argue that the fixed exchange rate arrangement under the Bretton Woods System was only a development strategy between the center (the United States) and the main periphery at the time (Europe and Japan). A strategy whereby the periphery maintained currency devaluation, controls on trade and capital, reserve accumulation and the privileged use of the center as a financial intermediary to lend credibility to their financial system. Once the periphery achieved their development objectives and the periphery graduated to the center, the strategy was revisited with the lifting of restrictions on trade and capital flows in the 1970s and the fixed began to float. Hence the era of monetary liberalism was introduced - a monetary system without a specific official reserve currency.

With the introduction of monetary exchange rate liberalism following the collapse of the Bretton Woods system, countries have run their economies inconsistently with respect to exchange rate regimes. At one point a particular country gives preference to a fixed over a flexible exchange rate regime, and vice versa. Following currency upheavals, attention is sometimes drawn to intermediate regimes which are neither fixed nor flexible, thus inclining to Vos' (2000) assertion that hardly any country is on the extreme of the exchange rate regimes. Even with intermediate regimes, solution to these economic upheavals has been farfetched in most developing countries as inflation and unemployment remain a perennial problem.

Hence, in extreme search for a solution to currency problems in political-economic environments, some countries have resorted to abandoning their own currencies and adopting stable currencies of large economies. According to Ize and Yeyati (1998), this trend has it routes in macroeconomic fundamentals following prolonged inflationary episodes. Although for some countries, like Panama and Liberia, official dollarization was a natural outcome of political inheritance based on colonial and historical lineage with large political-economic power. However, the emerging interest of other developing countries in official dollarization has attracted this research's investigation of the benefits and implications.

1.2 Definition of Dollarization

Several definitions, similar but somewhat varying, have been used in the literature to define dollarization. From a scientific perspective, it is thus important to lay out the underlying definition applicable in the context of this research paper.

Alesina and Barro (2001) for example, define dollarization simply as the use of another country's currency as legal tender which may not be specifically the dollar. They contend that at least 60 small countries have at some point in history used another country's currency. The reason for doing so is more generally the loss of confidence in domestic currency following prolong currency

instability. Bogétic (2000: 179) on the hand defines dollarization as "a portfolio shift away from domestic currency to foreign currency, to fulfil the main functions of money—store of value, unit of account, and medium of exchange".

However, dollarization in a broader sense could be of several forms depending on the legal arrangement and monetary policy focus. Yeyati (2006) makes the distinction between official dollarization (de jure or formal dollarization) and unofficial dollarization (de-facto or unofficial dollarization). The former he defines as a monetary arrangement whereby a foreign currency is given legal and exclusive status as a country's legal tender to perform all the functions of money without restraint. He defines the latter as an unofficial monetary arrangement facilitating the use of foreign currency alongside domestic currency. Yeyati further breaks down unofficial dollarization into two separate phenomena which may take place separately or simultaneously. The first phenomenon is the use of foreign currency as a medium of exchange known as currency substitution, while the second is the use of foreign currency as a store of value known as asset substitution.

Literature suggests that de facto dollarization precedes de jure or official dollarization where countries have previously owned a domestic currency. Moreover, there is more focus on de facto dollarization than official dollarization in literature. Bogétic (2000) attributes this situation to the prevalence of more de facto than officially dollarized economies, the demographic size of most dollarized countries and the lack of published data on dollarized economies. While literature on de facto dollarization will be largely used in the de-dollarization chapter of this paper, the focus of this research is on official dollarization in developing countries. This is the case of countries abandoning their own currencies and adopting a foreign currency as legal tender.

Hence, for the purpose of this research paper, the simple definition of dollarization as used by Alesina and Barro (2001) will apply.

1.3 Indication of the Research Problem

Dollarization in the sense of the unofficial use of foreign currency by economic agents is not a new phenomenon. What is new is the official adoption of foreign currencies in geographically large developing countries. "Until now, formal dollarization (or its equivalent using some other major currency) was seen as an option limited only to tiny enclaves or micro-states like San Moreno or the Marshall Islands. In all, only some dozen sovereign entities – including only one country (Panama) with a population exceeding 100,000 – thus far use the currency of a larger neighbour or patron in lieu of money of their own. Today, however, even nations as big as Argentina or Mexico are debating the merits of the approach" (Cohen 2000: 2).

Transcending the national level debate, pointed out by Cohen over official dollarization, Ecuador and El Salvador have already gone ahead to introduce the dollar as their countries' sole and legal tender. In the case of many countries, "Official dollarization has appeal partly because unofficial dollarization is already so widespread" (Schuler and Stein, 2000:1). For example, Table 1shows a high level of de-facto dollarization (the ratio of foreign currency bank deposits or loans as a percentage of total deposits or loans) for the period 1999 – 2003. This is an indication that official or formal dollarization is imminent in

several developing countries, especially in the face of recurrent economic distress and political instability. The question that emerges from these trends is, if dollarization is really a rational policy choice for developing countries? Thus far, this question has been inadequately addressed, i.e. there is very little research discussing this issue profoundly. This research paper therefore aimed to fill this gap in literature or at least to provide a first step into this direction.

Table 1: De-facto Dollarization in Developing Countries (In percent)[2]

Country Name	Deposit Dollarization[3]	Loan Dollarization[4]	Public Debt Dollarization[5]
Argentina	14	20	96
Bolivia	92	96	95
Brazil	0	0	49
Chile	15	14	45
Colombia	1	5	59
Costa Rica	46	55	53
Guatemala	10	25	88
Honduras	34	26	95
Mexico	10	32	42
Nicaragua	71	84	98
Paraguay	64	57	N/A
Peru	74	79	92
Uruguay	85	61	96
Venezuela	0	1	67
Latin America Country Average	37	40	75
Emerging Country Average[6]	22	19	39

Source: Garlindo and Leiderman (2005:38)

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[2] Data are for (1999, 2001, 2002, and 2003), gathered from central banks and ministries of finance of respective countries.

[3] Foreign currency deposits as a percentage of total deposits

[4] Foreign currency loans as a percentage of total deposits

[5] Public debt in foreign currency as a percentage of total public debt

[6] Emerging country average also comprise African countries including Morocco and Nigeria

1.4 Research Objective, Hypothesis and Questions

1.4.1 Research Objectives

The objective of the research was to dig into the experiences, positive and negative, of officially dollaized developing countries so as to lend monetary policy makers in other developing countries contemplating official dollarization policy guidance on informed choices for official adoption of foreign currency as sole and legal tender. Persuant to this main objective, the research is sub divided into three objectives:

1. A critical review of the rationale and justification for dollarization in developing countries;
2. A critical review of how empirical literature lends evidence to dollarization rationale in developing countries
3. An investigation into the experience of dollarized countries' attempts to de-dollarize.

These sub objectives constitue the three main chapters of this research paper. Chapter two focuses on the rationale for official dollarization in developing countries. Chapter three reviews the empirical evidence of dollarization success in officially dollarized developing countries. And chapter four attends to the experiences of dollarized economies' attempts to de-dollarize.

1.4.3 Research Hypothesis

The research investigates the following hypothesis:

1. The rationale offered for dollarization in developing is weak.
2. Empirical evidence suggests that dollarization did not benefit developing countries as it was intended.
3. Attempts of de-dollarization in developing countries have been met with mixed successes, if there are any successes at all.

1.4.2 Research Questions

Given the research objectives, the following research questions have been answered:

Main Question

Is dollarization a desirable monetary policy option for developing countries experiencing currency fragilities?

Sub Questions

What has been the rationale for dollarization in developing countries?

What is the empirical evidence on the macroeconomic success of dollarization strategies?

What have been the experiences of countries with attempts to de-dollarize?

1.5 Methodology

To answer the question and sub questions of this research, the research made use of the review of literature as the main methodology. The strategy employed is the review of literature on dollarization in developing countries by researchers of different influence and persuasions including individual peer reviewed journal articles and IMF and World Bank working papers. The review is structured in three categories in accordance with the three hypotheses. The first category of review focused on literature which discusses the underlying rationale and justification for dollarization. The second category focused on the empirical literature for evidence of success of dollarization in developing countries. And the third category focused on literature which discuses experiences of developing countries' attempts to de-dollarize.

The review of the rationale has been used to show how the acclaimed benefits of official dollarization have been arrived at in developing countries. The review of empirical evidence of dollarization policies in developing countries have taken into account how officially dollarized countries performed compared to their pre-dollarization periods or compared to non-dollarized countries. The comparative analyses have focused on specific and relevant macroeconomic variables pertinent to economic performance and growth.

The research has also made use of comparative macroeconomic data analysis to verify the veracity of results coming out of alternative empirical literatures. Specifically, macroeconomic data from the World Development Indicators (WDI) of the World Bank and the World Economic Outlook (WEO) of the IMF have been used with specific attention to variables which match dollarization rationale including inflation, trade, growth, unemployment, and so forth.

Lastly, the review on de-dollarization efforts considered literature which attends to analysis of the economic situations and the political environment prompting de-dollarization in countries which have attempted to do so. It has focused on the specific approaches, mechanism used, and outcomes in countries which have had de-dollarization programs.

In the absence of alternative quantitative techniques and/or formal econometric analysis, literature review as a method provides a very useful and powerful analysis in studying dollarization in developing countries. It facilitates an understanding of dollarization in the context of the historical political-economic environment vis-à-vis monetary policy.

1.6 Scope and Limitations

With respect to the rationale for dollarization in developing countries and the accompanying empirical evidence, this research focuses on only officially dollarized countries covered by literature. The focus on de-dollarization efforts

will also be limited to literature which covers only developing countries which have been dollarized and have attempted to de-dollarize. Time periods in the review are restricted to only what the literature reviewed has covered. However, extra data analysis by this paper begins from 2002 onwards.

More precisely, this research paper is neither a study of alternative exchange rate regimes nor a comparative study between dollarization and alternative exchange regimes. Hence, while it makes comparative data analysis between officially dollarized states and countries with currencies of their own, it does not go into the theory, merits and demerits of fixed, flexible or intemediate exchange rate regimes.

This research work also faced several practical constraints. First, dollarization has been given very limited attention in research (Melvin,1988,). Much of the research work has concentrated on Latin America. Even in Latin America, the dominant attention has been on de-facto rather than de-jure dollarization. The absence of data restricts the paper's macroeconomic data analysis to only three officially dollarized countries including Panama, Ecuador and El Salvador.

Chapter 2 Rationale for Dollarization in Developing Countries

2.1 Introduction

"Recent worldwide turmoil in financial markets is triggering a major revision of the conventional wisdom about emerging markets (EM) countries' macroeconomic management […]" (Calvo 2002: 394). In their introductory chapter, Eichengreen and Hausmann (1999: 1) assert: "If one positive thing can be said about the Asian crisis and subsequent discussions of how to strengthen the international financial architecture, it is that they breathed new life into a moribund debate on the consequences of exchange-rate arrangements". Calvo (ibid) points to the depth of the debate on the set of institutional arrangements and policies which would ensure macroeconomic stability. The debate is ever-growing on what should be an optimal monetary policy on currency in many countries in the wake of past and current financial crisis and the potential for a future recurrence. It is even stronger in developing countries where currency problems and economic growth are at stake and exchange rate regimes are at the heart of the debates.

This chapter therefore seeks to investigate into the rationale underpinning dollarization and why is dollarization preferred to alternative exchange rate regimes for achieving growth in developing countries. As a point of departure, the paper draws on the main variables of interest in the dollarization debate including inflation, fiscal discipline, currency risk, financial and trade market integration, labour market reform and economic growth. The main focus of the research investigation in this chapter is how dollarization leads to success of these macroeconomic variables. These will serve as the basis for our empirical review in Chapter Three where the research will be seeking evidence which lends support to their success in officially dollarized countries. A lot more space is devoted to inflation in this section because it is the fulcrum of the dollarization rationale.

2.2 Inflation

In recent years, inflation has emerged as, what I term "common enemy", in monetary policy circles in almost all countries. Often defined as the "sustained increases in the general price level of goods and services in an economy" (Kibritçioğlu, 2002:45), inflation remains a perennial macroeconomic problem in most countries. Policy focus in recent years seems to have shifted from employment targeting to inflation targeting in a bid to control upswings in inflation. Mishkin (2001) for example puts it that one of the key objectives behind inflation targeting is the institutional commitment to maintaining price stability. Maintaining inflation targets have often being achieved through monetary policy adjustments. Such policy adjustments are mostly instituted through upward or downward adjustments in money supply or through exchange rate adjustment by means of devaluation or revaluation.

In developing countries, inflationary situations are even of greater magnitude, sometimes sparking civil and political unrests. These inflationary situations are the reasons prompting the shift in monetary policy thinking in developing countries from maintaining independent domestic currency to the adoption of stable foreign currency as legal tender (dollarization). The central idea behind the introduction of a foreign currency and the eliminating of domestic currency is that it wipes out inflation or reduces it to a level equivalent to that of the currency issuing country such as the Unites States.

For example, political tension fuelled by hyperinflation and dismal economic performance prompted the government of Ecuador to drop the use of the Escudo and officially adopt the U.S. dollar as legal tender in 2000. Proponents such as Vos (2000) believe it was a right decision by the Ecuadorian authority because both fixed and flexible exchange rate regimes had failed to reverse inflation in that country. Hussmann (1999) justifies the proposition for dollarizing Latin America, and by extension developing countries, with the contention that independent monetary policy has failed to deliver currency stability in the region citing cases of inflationary upswings and wage indexations across the continent. In the wake of the failure of both fixed and flexible exchange rate regimes, Hussmann proposes the adoption of a "Supra-National Currency". Alesina and Barro (2000) also support this proposition for small closed economies with high historical inflation, especially if they are geographically proximate to a large economy.

But how exactly is inflation lowered by dollarization? The answer is simple and straight forward. It prevents countries from printing money. Moreno-Villalaz (1999) for example argues that the absence of excess money supply and the inability to monetize fiscal deficits in Panama explains its success in maintaining low inflation.

However, while the adoption of stable foreign currency may seem to be a solution to inflationary problems in developing countries, there are equally corresponding problems created to the monetary system. It takes away a country's independence in monetary policy. In a sense, a dollarized country delegates its sovereign control over monetary policy to a foreign country from which it has no direct benefits. It can no longer make money supply adjustments even when necessary. Domestic savings and lending decisions cannot be influenced by local monetary authority as there are no central banks with active role of performing monetary policy governance, i.e., government loses control over monetary policy. At the same time, the central monetary authority is stripped of the ability to shelter the banking system during periods of liquidity constraints. Moreover, dollarized economies tend to lose revenue from printing money. These are the basic counter arguments which opponents of dollarization, for example Chang (2000) and Chang and Velasco (2002), consider as posing potentially high costs when a country loses its domestic influence over monetary policy.

In the context of a central bank's role of lender of last resort (LOLR), Bagehot (1873, cited by Woods, 2003) for example, contends that LOLR is not just a mere "classical concept" but serves a very real purpose of shielding the banking system from panics and collapse. Rochet and Vives (2004) also argue that LOLR was instituted precisely to lend stability to the banking system and

prevent disparaging consequences for the real sector, citing the great depression as an example. They contend that recurrent crises were resolved with lender of last resort facility and deposit insurance by the end of the nineteenth century. The first intervention was in Europe and then in the United States after the financial crises of the 1930s. And recent years, in most emerging economies which at some point in time in their economic history have been hit by financial panics.

Freixas et al (2003) emphasize the importance of LOLR in the banking system during solvency shocks. They refer to LOLR as "emergency liquidity assistance" necessary in any monetary system for shielding banks from panics. The argument is that in the absence of a central monetary authority with statutory LOLR responsibility, events of bank panics caused by liquidity shocks have the proclivity to degenerate into a full blown banking and economic crisis as depositors stir bank-runs for fear of losing their savings. Though proponents argue that such emergency lending can be otherwise facilitated by the interbank market, Freixas et al (ibid) contend that liquidity provided by the interbank market may not be sufficient to close the liquidity gap. Besides, the central bank has the operating potential to change its priority in the interest of the survival of the financial system by offering lower than market lending rates without any legal constraints. The point is, the interbank market is driven by corporate interest and profit motives but a central bank is driven by national interest for the survival of the entire monetary system and economy.

However dollarization proponents such as (Calvo 2001) refute the claim that lending of last resort function is lost under dollarization. His argument is that in advance countries, lenders of last resort (central banks) do not issue money but rather bonds and public debt to meet liquidity requirements. This argument is also shared by Bencivenga et al. (2001). However, both Calvo and Bencivenga et al. fail to fit developing countries in the LOLR framework they allude to advanced countries. They fail to show the mechanism by which it works in developing economies. Instead, Calvo concedes that such mechanism may prove difficult to implement in developing countries. Ennis (2000), on the other hand, makes a more controversial rebuttal in favour of dollarization. He argues that lending of last of resort has been a part of the problem fuelling inflation in developing countries. Hence, the elimination LOLR function is a blessing rather than a curse.

With respect to seignorage revenue, Antinolfi and Keister (2001), argue that a dollarized country automatically forfeits the seignorage component of total revenue. Melvin (1998) contends that this loss is significantly undesirable for developing countries. Even in the case of a possible seignorage revenue sharing scheme. Kurasava and Marty (2007) argue that such scheme solely maximizes the welfare of the issuing country's households rather than the dollarizing country as inflation adjustments are set only to the issuing country's own advantage. Schmitt-Grohe and Uribe (2001) contend that a dollarized country loses twice its pre-dollarization monetary base. Calvo (2001) however argues that the loss of seignorage revenue under dollarization can be off-set by the imposition of a wealth tax. Interestingly however, revenue from currency printing is a predictable income flow, but the wealth tax as proxy of seignorage income suggested by Calvo is an unpredictable fiscal element especially in the context of developing countries. Fiscal policy makers may not have the super

flexibility in certain political bureaucracies to freely impose such tax. In most jurisdictions, parliamentary proceedings have to be followed before the imposition of new taxes. This may result in protracted debates in chamber rooms and sometimes the bill proposing such levy may end up being defeated by parliamentary votes.

Returning to the core rationale for dollarization, proponents place more emphasis on the low inflation effect of dollarization in developing countries, but they do not seem to offer details on the mechanisms by which dollarization eliminate inflation. Critics on the other hand largely focus on the loss of monetary policy independence, LOLR and seignorage as the principal demerits of dollarization. But they do not question the mechanisms by which dollarization eliminates inflation. The crux is that, it is not the mere use foreign currency which cuts down inflation in developing countries. Instead, it is when developing countries are prevented from printing money that inflation is lowered. Inflation in this case is not absolutely eliminated. It still exists under dollarization. Except that under this arrangement, it is established and adjusted by the foreign currency issuing country to the advantage of its fiscal and monetary policy goals and never to the goals of the adopting country. It rises and falls with that of the currency issuing country which does not care about the transmission of negative shocks to the dollarized economy. Such inflation adjustments do not benefit the dollarized country as their economic cycles do not covary with developed economies. This linear relationship with developed countries' economic cycles is one of several criteria discussed by Alesina and Barro (2001) for a country to dollarize. Hence, dollarization is not the elimination of inflation, but it is a country's will to accept inflation from another country and that inflation is only a cost and does enable it to make fiscal and monetary policy adjustments. In effect, most of what proponents consider as advantages of dollarization can hardly be separated from effects of inflation cutting. The discussion on inflation is further addressed when the paper discusses the economic growth rationale of dollarization. For now the paper focuses on the claims of the cause of inflation.

The consensual claim in literature, that inflation is caused by growth in money supply Melvin (1998) for example, is a flaw. Nothing is more ideal to refute this claim than recent developments of the global financial crisis. When the major financial institutions risked failure because of risky financial innovations, the EMU and the Unites States performed lending of last resort in unprecedented manners to stimulate growth. By standards of the money growth-inflation link, the world was being plunged into the biggest inflation ever. Contrary to this thought, this has not been the case. More to that, even with the excess liquidity provided corporate institutions, Democrats in the United States lobbied for congressional support to increase federal fiscal deficit threshold above the already 14.3 billion in fear of eminent recession (see Wroughton, 2011). If growth in money supply is a sufficient condition for inflation, then global inflation would have been on a high by now. Interestingly, President Obama still returned to Congress in August 2011 with another stimulus plan worth 450 billion dollars in a desperate attempt to stimulate growth and create new jobs for the growing number of unemployed Americans (see Gross, 2011).

These recent developments suggest that it is inadequate to blame inflation on money growth. Instead it is growth, which always precedes inflation that

eventually leads to inflation. Goldfajn and Olivares (2000: 5) also support this point by arguing that "growth falters after an initial boom and unemployment follows. It is at this point that the policy makers' credibility problems arise". Turvey (1951) and Kaldor (1976) also support this point in their assertions that money supply is an insufficient condition to stir inflation. They suggest that economic growth is the prime factor which eventually leads to inflation via the cost of primary output and wage bills in the secondary and tertiary sectors in developing countries. Kaldor (1976) therefore contends that growth in both the primary and industrial sectors must be in tangent. Otherwise, a growth deceleration in the primary sector against growth acceleration in the industrial sector will lead to rising prices for primary output especially for agricultural output including food. Given that prices for primary commodities are market-determined and industrial output is cost-determined, the resulting effect is an upward shift in the cost curve of the industrial sector which is translated into rising price of final output. Meanwhile, economic growth is a visible phenomenon to which workers will equally react for higher share of output. This also tends to shift upward the industrial wage cost curve.

A similar phenomenon is explained in Marxian conflict theory of inflation (Rosenberg and Weisskopf, 1981) wherein capitalist succumb to workers wage demands in anticipation of passing a mark-up price. This is a situation of "…workers and capitalists struggling to maintain or increase their shares of real national income" (Turvey 1951: 534). Rising prices arising from real sector growth also stir higher wage demand in the civil service and tertiary sector as civil servants seek to buffer against higher cost of living. It therefore becomes a revolving phenomenon leading to sharp rising inflation. Money supply does not play a major role in this analysis. Rather it is imbalanced economic growth between the primary, industrial and tertiary sectors; and the irresistible wage demand of workers, who solidify their strength in unionism, that generate price upswings.

On the other hand, Seers (1962) points out to institutional and infrastructural failures in developing countries such as bureaucratic red taping, inefficient trade logistics including transportation, storage and customs clearance, power shortages as additional costs which could result into ripple exponential cost effects in the face of economic growth. It shows that it is more of a structural, institutional and infrastructural problem in managing growth in developing countries rather than the growth in money supply.

Hence, the solution is to address the structural and institutional problems in economic growth management in developing countries rather than introducing dollarization which has a potential drawback on economic growth and employment. Similar conclusion is drawn by Bencivenga et al. (2001)). He argues that inflation reduction is a weak rationale for dollarization in developing countries if indeed inflation is blamed on money growth. The rationale in his argument is that alternative measures for reducing the rate of money growth can be sought without necessarily eliminating a domestic currency.

2.3 Fiscal Discipline

The growing assumption is that developing countries are corrupt and imprudent in fiscal management. They run large fiscal deficits funded by seignorage. Monetizing budget deficits has therefore been largely blamed for inflationary episodes in many developing countries for which dollarization have been justified. Vos (2000) and Eichengreen (2002) for example claim that unsustainable budget deficits was one factor which fuelled inflation in Ecuador prompting political unrest and a compelling decision to dollarize. Melvin (1998) contends that peso printing to meet fiscal targets were reasons for inflationary tendencies in Argentina and Chile as money supply grew up to 199 percent in the later. Haussmann (1999) blends the Latin American countries as incapable of managing independent monetary policies.

Hence, it is believed that dollarization enforces restriction on fiscal profligacy. According to pundit Edwards (2001:249), "countries that give up their currencies, were told, will be unable to engage in macroeconomic mismanagement." However, the mechanism by which dollarization enforces fiscal discipline remains inexplicit in dollarization literature. The underlying assumption is that when developing countries are prevented from printing money to finance deficits, they are compelled to run balanced budgets. But balance budgeting is only one measure of fiscal discipline which in itself does guarantee that fiscal misappropriation and misallocation can be prevented. On the other hand, even if balanced budgeting explains fiscal discipline, there is no guarantee in theory that preventing countries from printing money prevents them from borrowing in foreign currency to finance deficits. The crux is that preventing a dollarized country from printing money does not assure fiscal discipline. It only eliminates domestic inflation which is the hub of dollarization rationale. In this case the dollarized country accepts external inflation imposed by the currency issuing country, America for example, in the case of the Ecuadorian and Panamanian economies.

This highlights a weakness in the dollarization-credibility link as economic governance transcends monetary policy alone. Eichengreen (2002) for example, argues that credibility offered to monetary policy by dollarization may not necessarily enhance credibility in other policies.

2.4 Currency Risk

Currency instability is one reason for which dollarization has been encouraged in developing countries. Under independent monetary policy, alternative fixed and flexible exchange rate regimes are believed to have failed in preventing currency fluctuations. Some critics have even ignored inflationary reasons as not compelling for dollarization. They tend to attach more relevance to the risk of domestic currency devaluation under fixed or flexible exchange rate regimes and cost of trading domestic currency for international transactions. Bencivenga et al. (2001)) for example, ignores the relevance of price stability rationale advocated by dollarization proponents since there are other mechanisms other than dollarization by which inflation can be curtailed. He attaches relevance to the uncertainties pose by alternative exchange rate regimes in currency conversion for international transactions; and the exposure of domestic

currency to speculative attacks as most compelling for dollarization in developing countries. The assumption is that dollarization eliminates this risk. Antinolfi and Keister (2001) equally contend that the urgency for dollarization in developing countries has been primarily stir by currency crisis. They make particular reference to the 1994 Mexican crisis which was caused by a sudden devaluation of the Mexican Peso.

Whatever it is, the assumption of currency risk elimination under dollarization is already a forgone conclusion. For example, in the case of adopting the euro, there is no nominal exchange rate factor between a member country of the European Monetary Union and the dollarized country. The risk of devaluation and speculative attacks on the exchange rate is managed by the currency issuing country but not without costs to a dollarized country's macroeconomic goals. With the recurrence of financial crisis, currencies of large countries are also not free from risk and speculative attacks. In the event of such external shocks, there is no guarantee in theory that dollarized countries can fend off the effects as they lack adjustment mechanism under a dependent monetary policy.

2.5 Financial and Trade Integration

One major challenge posed to developing countries is the under development and isolation of their product and financial markets from international markets. The absence of a well-developed financial market, for instance, limits intermediation for investment capital in developing countries as domestic financial intermediaries are limited in scope and capacity. Product markets in developing countries are under-developed and largely restricted to limited markets. Hence, dollarization is considered by proponents as a channel through which integration between developing countries product and financial markets and developed countries product and financial markets can be achieved in a short space of time with limited constraints. The priori justification is that transaction costs are radically reduced, interest rates are lowered and investment credit is accessible in a dollarized economy and then market integration takes place (Schuler and Stein, 2000). Using Panama as an example, Haussmann et al (1999: 17) argues that "[…] Panama is the only country where a worker can get an unsubsidized 30-year mortgage loan at 9% interest denominated in the same currency as his wage". Antinolfi and Keister (2001) and Alesina and Barro (2001) also acknowledge this potential benefit of dollarization. They claim such integration is encouraged by other factors outlined as potential benefits of dollarization including lower transaction costs and the elimination of currency risk. The Mundell (2000) framework for a common world currency largely concentrates on transaction cost benefit vis-à-vis globalization. Eichengreen and Hussmann (1999) also point out that as much as dollarization assures price stability through a stable foreign currency, a complete package of benefits can only be delivered when the dollarized country's domestic financial markets are integrated with international financial markets. According to Helleiner (2010) similar financial market integration argument is made by neoliberals as a justification for dollarization. The rationale is that this integration helps to cushion a dollarized economy during periods of external shocks. However, this contradicts the fiscal responsibility claim of dollarization previously discussed. If in

the event of liquidity constraints, domestic banks can borrow freely from international banks to meet domestic loan demands, fiscal authorities are equally likely to use the same means to finance budget deficits. Hence, the fiscal discipline claim of dollarization becomes a mirage.

In a somewhat different context of financial market integration, Stockman (2001) claims that the most important effect of dollarization is the use of the Federal Reserve by the dollarized country's central bank. This argument is hinged around the moral hazard created when political systems resort to printing money to bailout politically influential financial institutions.

Stockman's suggestion implies that it would be beneficiary for developing countries to allow the United States run their monetary policy. However, this suggestion sounds more political than providing real economic solutions. It is more of creating a monetary empire for the United States then providing solution to developing countries economic problems. For example, when the Federal Reserve decides to implement countercyclical policies in the United States, such policies will only affect developing countries in a negative sense. The reason is that their cycles are unlikely to covary with the United States. On the other when the need for countercyclical response arises in developing countries, the Federal Reserve will be unlikely to respond because such policy adjustments will be of no direct benefit to the United States.

The trade integration assumption is that dollarized countries are likely to increase their trade with the currency issuing country, the United States for instance. Rose and van Wincoop (2001 cited by Klein 2005) and Frankel and Rose (2002) for example, suggest that dollarization increases international trade. They cite the EMU as an example. Unfortunately, the EMU is a different monetary framework with institutional and macroeconomic dynamics different from those of developing countries. Dollarization might reduce or remove the transaction cost of trading with international currencies. However, there is no assurance in theory that non-currency trade barriers between the North and South are eliminated to promote exports from developing countries. Hence, Bencivenga et al. (2001) also concedes to arguments against dollarization, in the specific case when a developing country market is not well integrated with world markets. He asserts that "under weak conditions, dollarization will not cause the terms of trade to move in favour of the dollarizing economy" (Bencivenga et al. ibid: 552). This supports our prior proposition in Section 2.2 for the need for structural and institutional reforms in lieu of dollarization.

2.6 Labour Market Reform

One vague assumption sparsely discussed in dollarization literature is that adopting a stable foreign currency and eliminating domestic currency enhances labour market reform. But the mechanism by which dollarization enhances this reform differently from situations when a country uses independent monetary policy remains unclear and unconvincing. Hussmann et al (1999) for example, argues that independent monetary policy in Latin America has prompted more wage indexation with surging prices. Dollarization in this sense is meant to prevent wage indexation as prices are expected to remain stable. Soto (2009) in this regard explains that in Ecuador, it was anticipated that dollarization would

have impacted labour markets positively by increasing employment and real wages thereby improving the welfare of its residents.

However, the critical point which proponents have failed to consider is that an increment in real wage for domestic wage earners implies that the cost of hiring labour increases for employers. If labour market reform is to be impacted by dollarization, then in this case, workers should accept lower wages to induce employers to hire more labour. Obviously, in this age of strong labour unionism and capitalistic self-interest, a downward wage adjustment as Keynes would put it, is resistible. Hence, the integrated financial markets brought about by a risk-free currency environment and the low transaction cost benefit of dollarization would only facilitate a shift from labour to capital intensive investments, thereby leaving the rate of unemployment unchanged. One reason is that "Labor market reform to reduce unemployment may not be politically viable, because it would reduce the welfare of the employed majority" (Calmfors 2001:268).

To suggest therefore that labour market reforms can be driven by dollarization is a fundamental flaw. The reason is that there is no clear direction in literature on how this process is enhanced by dollarization. Jácome and Lönnberg (2010) for example propose flexibility of labour markets in dollarized economies to enhance the anticipated reform, but equally warn that hike in administrative wages could hinder job creation. Implicit in this proposition are both wage flexibility and wage ceiling measures, which are two extremes.

Hence, contrary to dollarization proponents' claim, the answer to labour market reform is more an institutional than a market-driven process. Nickell and Nunziata (2002) and Belot and van Ours (2004) arrive at similar conclusions that institutional changes have mattered more in unemployment histories even in OECD countries.

2.7 Economic Growth

The conclusion of dollarization rationale is that it promotes economic growth. The flow of expectations are that dollarization reduces inflation and transaction cost for international trade. Inflation cutting reduces currency risk, while a lower currency risk environment attracts foreign financial institutions and intermediation. Hence, foreign investment leads to growth in output. . Jácome and Lönnberg (2010) for example, make the assertion that the prime reason for dollarization is the importation of a monetary policy framework which facilitates price stability and economic growth. "It is presented as the ultimate way for achieving credibility, growth and prosperity" says Edwards (2001:249). All of the proposed benefits of dollarization are gravitated towards growth (Frankel and Rose 2000).

However, moving back to previous discussion, the hub of dollarization is the elimination of inflation in developing countries. This is achieved not by adjustable fiscal and monetary policies, but rather by cutting off independent monetary policy which prevents the printing of money. To claim therefore that dollarization leads to growth is a contradiction, because eliminating inflation under this approach would mean eliminating or stagnating growth. In growth theories, it is aggregate savings which lead to investment financing and then to growth. To restrict monetary growth in the drastic sense of dollarization is to

limit the rate of savings which triggers down to growth stagnation. Seers (1962:181) for example argues that "[…] it is hard to see by what means the necessary rise in investment can be achieved if the money supply is not increased quite rapidly" D'Arista(2000) argues that dollarization limits the amount of money and credit necessary for economic expansion and growth. Ball (1993: 3) makes an implicit inflation-growth cost in his assertion: "Economists have both good news and bad news about inflation. The good news is that we know a lot of its causes and how it could be ended. The bad news - and the reason that inflation has not been ended - is that doing so could be costly". This assertion is not atypical of the full employment & monetary policy contest between Keynes and the Classicalists

Alesina and Barro (2001) make particular reference to the unprecedented growth periods of the 1960's and 1970's when expansionary monetary policies and inflation delivered higher economic growth and lower unemployment. Why then has dollarization become the recommended solution to developing countries' macroeconomic problems? Other answers may be found in what I term as "the hidden factor" rarely discussed in dollarization literature.

2.8 The Hidden Factor

In principle, while developing countries may be celebrating their sovereign political freedom from colonialism, in practice, the colonial mastermind remains pervasive in monetary policy. With the emergence of the European Monetary Union (EMU) and the growing strength of China and the Asian economic block, there is a political economy anxiety prompting the need to establish a stronger and dominant monetary empire in the United States. Helleiner (2003) for example makes reference to the U. S. first attempts to promote the use of the dollar in the early twentieth century when it began making military and political expansions in the Caribbean and Latin America including Puerto Rico, Cuba, Panama, Dominican Republic, Haiti, and Nicaragua. Helleiner (ibid) contends that dollarization of recent years in Latin America has a U.S. undercurrent to integrate Latin American trade with the United States and to promote neoliberal economic goals of constraining state intervention and bolstering private enterprise. The implications are that power relations between the United States and these countries would be altered with a U.S. political and economic dominance. This would disadvantage nationalist governments in the region (Helleiner, 2003).

Panama, for a classical example, is the most celebrated success of dollarization. However, its consideration of dollarization was not occasioned by traditional inflationary crises for which dollarization has been justified in many developing countries. External political influence was the driving factor given that it dollarized at independence. "Americans were active in encouraging the onetime province of Colombia to break away in 1904, so that they could build the Panama Canal" (Fankel et al. 2001:142). This geo-political ideality to the United States may have influenced US economic activity in the Canal Zone more than dollarization itself.

These may not be mere speculative or coincidental assertions which cannot be corroborated. The core rationale in literature for developing countries to dollarize is inflation, which is perceived as a failure to manage independent

monetary policies. However, there are no historical accounts in literature which show that inflation preceded official dollarization in Panama, Puerto Rico, and Liberia. Likewise, there is no justification in literature that inflation was out of control in El Salvador before it became dollarized. Goldfajn and Olivares (2000) for example argue that dollarization in Panama was a natural consequence of the U.S. influence based on the country's geo-political setting and the economic interest of the United States. Hence, there is a hidden factor for dollarization in the political economy agenda of the United States which literature remains largely silent on. A dollarization bill sponsored in recent years by Republican Florida Senator Connie Mack (Helleiner, 2010) is an obvious manifestation of the hidden agenda to promote U.S. monetary hegemony. D'Arista (2000:6) quotes the February 1999 Economic Report of the President as stating that "Dollarization will add to the U.S. 'power and prestige' by boosting the dollar's role as an international currency, that it will also increase business for U.S. banks and financial institutions and lower transactions cost for trade and finance". In a similar testimony, Lawrence Summers, then Deputy Secretary of Treasury sought to convince congress that dollarization would guarantee U.S. expansion and influence in Latin American markets. The important thing to pick from the two officials' statements is that none insinuated how dollarization would benefit other countries, but rather, they explicitly state how it will benefit the U.S. The proposed Act specifically requires dollarized countries to open the banking sector to foreign competition (Schuler and Stein, 2000), as another smart way of spreading neoclassical doctrine. This game is expected to intensify in coming years as a U.S. direct response to a competitive euro zone.

Figure 1: Dollarization Rationale Diagrammed[7]

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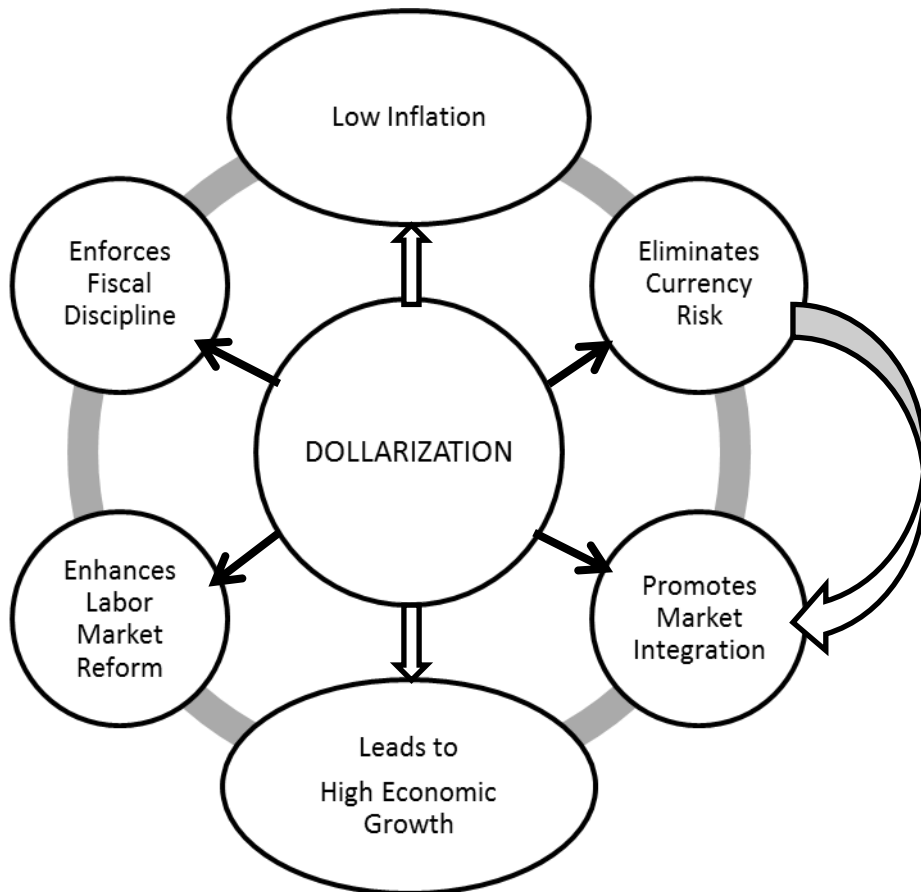
[7] In the framework, dollarization is the fulcrum which impacts all other parameters in the circle. The prime effect is on inflation which further has auxiliary impact on: fiscal discipline when currency printing is absent; labor market reform when wage inflation is low and stable; low currency risk when inflation is low and stable which leads to market integration. All the other parameters influenced by dollarization have an end effect on economic growth. The bigger arrows are an indication that dollarization is the "magic bullet" which is capable of achieving the twin goals of macroeconomics – price stability and growth.

2.9 Chapter Summary

As far as literature provides, there are no theories on which official dollarization is based. It is a conglomeration of assumptions rationalized only in the context of developing countries which have no routes in standard macroeconomic theories. The only theoretical link passively referenced in literature is the optimum currency area (OCA) propounded by Robert Mundell[8]. However, this is inconsequential because the OCA criteria hardly fit any developing countries.

The general consensus in literature is that hyperinflation is the main reason why dollarization is encouraged in developing countries. The core of the argument is that developing countries are unable to manage independent monetary policy and should therefore abandon it. The main proposition for relinquishing independent monetary policy is that it prevents developing countries from currency printing and monetizing fiscal deficits. It is suggested that without access to printing money, inflation is lowered, fiscal discipline is enforced, currency risk is eliminated, interest rates are lowered and trade and financial market integration is enhanced. A more real sector proposition is that low inflation brought about by dollarization enhances labour market reform. Overall, is suggested that dollarization promotes economic growth. The weakness in these propositions is that the paths through which they are achieved by dollarization remain narrowly addressed in literature. Money growth as the cause of inflation is still debatable, while dollarization-growth link remains very inconclusive.

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[8] Mundell, R., A. (1969), A Theory of Optimum Currency Areas, t*he American Economic Review* 51 (4) 657-665.

Chapter 3 Empirical Evidence of Dollarization Success in Developing Countries

3.1 Introduction

Having reviewed the rationale offered for dollarization in developing countries in Chapter Two, this chapter reviews the empirical literature to verify how empirical evidence lends support to the postulated benefits of dollarization. This empirical review places more emphasis on literature which attempts to measure performance in officially dollarized economies compared to non-dollarized economies. Hence, keen attention has been given to the methods used and the variables measured in each empirical analysis. The review will focus on the key variables of dollarization benefits according to the order in which they are discussed in Chapter Two so long as empirical literature which measures any of these variables is accessible.

Additionally, recent macroeconomic data from the IMF and the World Bank have been be used to construct tables and do chart analysis to confirm if results from empirical literature which measure dollarization performance are in line with trend. The data sought from the IMF and World Bank concentrates on the most discussed officially dollarized countries and a select group of non-dollarized countries. Finally, I findings are summarized and a summary conclusion drawn from this chapter.

3.2 Inflation

Edwards (2001) uses panel data analysis and multivariate regressions of eleven dollarized countries and a large sample of developing countries with own currency for the period 1970 to 1998 to prove if dollarized countries perform economically better than non-dollarized countries. Of the 28 officially independent dollarized countries and territories, He uses a sample of 11 dollarized countries based on data availability. Using inflation data from the World Bank and the IMF for the research period, Edward compares the 11 dollarized countries' economic performance with that of non-dollarized countries and finds strong support for low inflation in Panama compared to all non-dollarized countries in Latin America. He finds the average inflation rate for dollarized countries at 5.2 percent, and 46.3 percent for all non-dollarized countries.

Given that most dollarized economies are very small territories and are by and large political and economic subsidiaries of economically strong nations, the presumption is that their economic performances are exogenously impacted. Hence Edward restricts another comparative analysis to Panama only against all non-dollarized countries. Panama is used because of the size of its population and economy, and its long historical experience with dollarization. The choice of Panama is based on the consideration that it is the only dollarized country with complete data for measuring all necessary parameters for dollarization performance. In line with what is postulated by dollarization proponents, Edward finds Panama's average inflation rate much lower at 3.4 percent compared to 5.2 percent for all dollarized countries.

Ghosh, Gulde and Wolf (1998) arrived at similar robust results for inflation, but their work comprised both currency boards and officially dollarized economies. The limitation in their work is that currency boards may have similar characteristics as dollarized economies but the former have at least escape rooms for adjustment in monetary policy which the latter do not have. Hence, relying on such results may not be very conclusive to explain dollarization. Abrego et al (2006) of the IMF Western Hemisphere use historical macroeconomic data to assess Ecuador's economic performance with dollarization. Their findings are no different from those of Edwards and Ghosh et al. with respect to inflation. They established that inflation in Ecuador declined to world levels following dollarization. Soto (2009) shows results of inflation in Ecuador declining from a high of 100 percent before dollarization in 2000 to a low of 3 percent by 2004.

Goldfain and Olivares (2001) also conduct descriptive data analysis on Panama's macroeconomic performance for an 18 year period, 1970 – 1998. They make a comparison with a select number of Latin American countries including Argentina, Brazil, Chile, Costa Rica, Mexico, and Peru. In line with theoretical predictions for dollarized countries, and empirical findings by Edwards (2001) and Soto (2009) they find average inflation extraordinarily low in Panama at 3.2 percent compared to the rest of the Latin American countries at 34 percent. The closest to Panama in the sample is Costa Rica with 14.2 percent inflation. While Brazil and Argentina rank highest with 62.4 percent average. Goldfain and Olivares show in Figure 1 Panama's performance with inflation falling below the United States from 1981-1998. Between 1986 and 1998, there is an unprecedented near zero rate of inflation in Panama.

Figure 2: CPI Inflation in Panama compared with the US (1970-98)

Figure 2: CPI Inflation
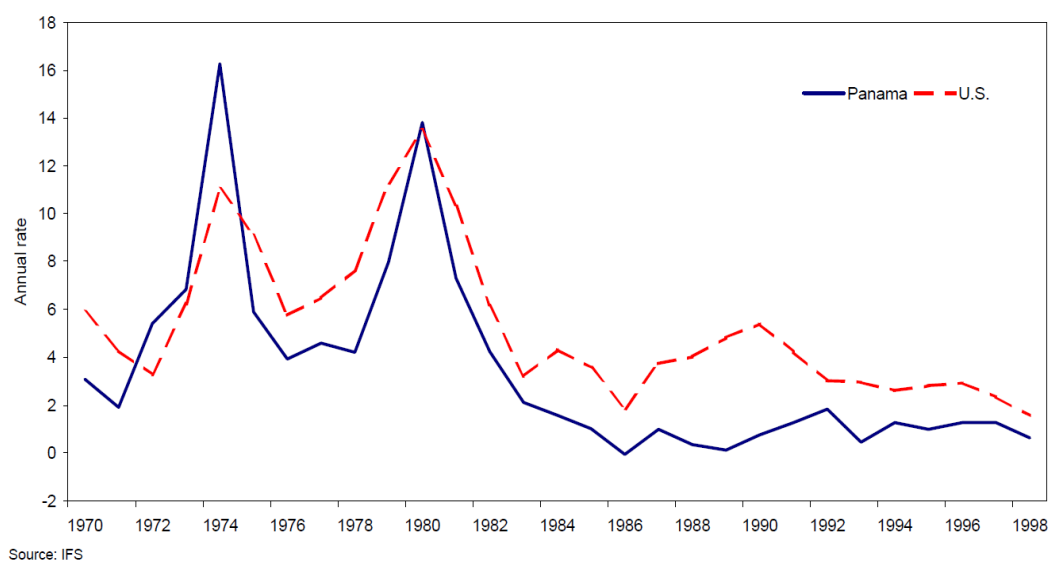
Source: Goldfajn and Olivares (2000: 13)

Table 2 and Figure 3 show the historical inflation rates for three officially dollarized countries including Ecuador, El Salvador and Panama and a number of developing countries for the period 2002 – 2015. As a way of verifying the results from empirical literature with recent IMF data, inflation rates for the three countries during period maintain similar trend of very low inflation relative to non-dollarized countries. Three years following dollarization in Ecuador, inflation declined to very low levels close to 3 percent, although inflation trend for both Ecuador and El Salvador are slightly higher than Panama for almost throughout the period. The up-shoot in the rates in all the three officially dollarized countries in 2008 which, coincides with the birth of the recent financial crisis in with origins from the U. S., is a corroboration that dollarized countries' inflation is dictated by the currency issuing country, though they do not share the benefits of inflations except the costs. Their rates of 2008 are even higher than several other developing countries. This is because the United States itself was experiencing inflation during this period.

Although on average dollarized countries have lower inflation than non-dollarized countries, Figure 3 shows that dollarized countries have not always had the lowest rates of inflation. Peru shows the exception that developing countries can maintain a low rate of inflation as dollarized countries even while maintaining domestic currency.

Table 2: Inflation (Annual Rates)

Inflation (Annual Rates) IMF-WEO 2010											
Country Name	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2015
Argentina	25.9	13.4	4.4	9.6	10.9	8.8	8.6	7.7	9.7	9.7	9.7
Bangladesh	3.7	5.4	6.1	7	7.1	9.1	7.7	6.2	8.5	6.1	6.2
Bolivia	0.9	3.3	4.4	5.4	4.3	8.7	14	0.3	4	3.5	3.5
Botswana	8	9.2	7	8.6	11.6	7.1	12.6	5.8	5.9	6	5.3
Cape Verde	1.9	1.2	-1.9	0.4	4.8	4.4	6.8	1	1.4	2	2
Chile	2.5	2.8	1.1	3.1	3.4	4.4	8.7	-1.4	3.7	3	3
Costa Rica	9.2	9.4	12.3	13.8	11.5	9.4	13.4	4	5.5	5.5	4
Ecuador	*12.6*	*7.9*	*2.7*	*2.1*	*3.3*	*2.3*	*8.4*	*4.3*	*3.7*	*3.2*	*3*
El Salvador	*1.9*	*2.1*	*4.5*	*4.7*	*4*	*4.6*	*7.3*	*-0.2*	*1.5*	*2.8*	*2.8*
Ghana	14.8	26.7	12.6	15.1	10.2	10.7	16.5	16	9.5	8.5	5
Indonesia	11.8	6.8	6.1	10.5	13.1	6	9.8	15	8.1	4.6	4.2
Kazakhstan	5.9	6.6	7.1	7.9	8.7	10.8	17.1	6.3	7.7	6.8	6
Kenya	2	9.8	11.6	10.3	14.5	9.8	13.1	11.5	7.2	5	5
Nigeria	12.9	14	15	17.9	8.2	5.4	11.6	11.9	10.7	8.5	8.5
Pakistan	2.5	3.1	4.6	9.3	7.9	7.8	12	13.1	12	8	6
Panama	*1*	*0.6*	*0.5*	*2.9*	*2.5*	*4.2*	*8.8*	*1.9*	*3*	*2.7*	*2.5*
Paraguay	10.5	14.2	4.3	6.8	9.6	8.1	10.2	1.9	4	3.5	3.2
Peru	0.2	2.3	3.7	1.6	2	1.8	5.8	0.2	2	2	2
Philippines	3	3.5	6	7.6	6.2	2.8	9.3	4.4	4.5	4	4
Puerto Rico	2.4										
Rwanda	2	7.4	12	9.1	8.8	9.1	15.4	5.7	7	6	5
South Africa	9.2	5.8	1.4	3.4	4.7	7.1	11.5	6.3	5.8	5.7	4.5
Sri Lanka	9.6	9	9	11	10	15.8	22.6	4.8	9.1	7.3	7
Tanzania	4.6	4.4	4.1	4.4	7.3	7	10.3	12.2	5.4	5	5
Uruguay	14	19.4	9.2	4.7	6.4	8.1	7.9	5.9	6.5	5.5	5
Vietnam	4.1	3.3	7.9	8.4	7.5	8.3	23.1	6.5	12.5	8	5
Note: 2010/2011/2015 are projections											

Source: WEO (2010)

Figure 3: Annual Rate of Inflation
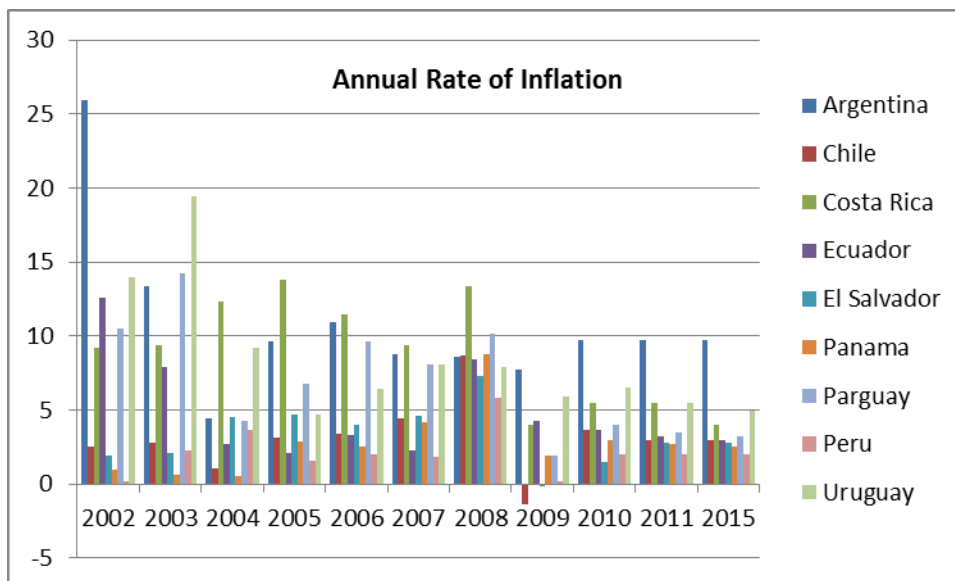
Source: WEO (2010)

3.3 Fiscal Discipline

One of the assumptions of dollarization in developing countries is that it compels policy makers to exhibit prudent fiscal management by running balanced fiscal budgets. Edwards (2001), using the same sample of dollarized and non-dollarized countries as used in estimating inflation performance, finds the average annual fiscal deficit as a percentage of GDP to be 4 percent for all dollarized countries and 3.6 percent for all non-dollarized countries. Comparing Panama with non-dollarized countries, the results of their averages are the same. This result does not support the proposition that dollarized countries are fiscally disciplined.

In the case of Ecuador, Abrego et al (2006) find strong evidence of fiscal consolidation following dollarization. Primary non-financial public sector doubled at 5.2 percent of GDP between 2000 and 2005, while non-oil primary deficit declined substantially by 4 percentage points. Public debt ratio declined by more than half compared to its pre-dollarization debt portfolio, thus suggesting that dollarization enforced fiscal discipline in Ecuador. However, the authors acknowledged that this fiscal performance was more structural in the form of improved tax administration and other factors unrelated to dollarization such as the boom in oil price on world markets which profited Ecuador's oil export.

Findings by Goldfain and Olivares (2000), like those of Edwards (2001), do not lend support to the fiscal discipline proposition of dollarization proponents. They find that fiscal deficits of 3.8 percent as a percentage of GDP are higher than Latin American average of 3.2 percent. Although they are slightly lower than Brazil and Mexico with average fiscal deficit of 4.7 and 4.4 percent respectively but grossly higher than Chile. Even credit ratings from the world's leading rating agencies (S&P and Moody) provided by Goldfain and Olivares

in Table 2 do not lend support to this proposition in the case of Panama compared to the credit ratings for other countries of the Western Hemisphere in Goldfain and Olivares' sample. Both rating agencies show Panama's rating as lower than Chile. Moody's rating for Panama and Costa Rica are the same while S&P's rates Panama higher than Costa Rica. Apart from the two, the remaining Latin American countries are about just a level below Panama. These ratings do not justify fiscal discipline, and moreover, they signal Panama's inability to influence its debt position because of the lack of control over monetary policy. Figure 4 shows Panama's fiscal deficit position for the period 1970 – 1998. It shows that Panama maintained high fiscal deficits between 1970 - 1989.

Figure 4: Annual fiscal deficits for Panama (1970–1998)

Figure 7: Fiscal deficit

Source: IFS
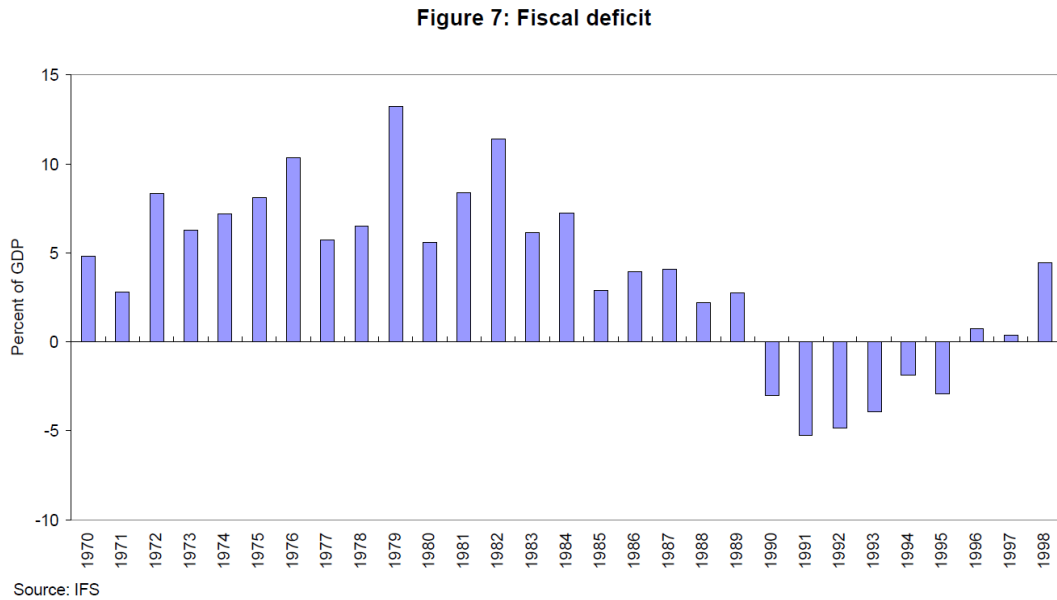
Source: Goldfajn and Olivares (2000:17)

Table 3: Panama's Credit Rating by Moody's and S&P

Table 4: Long Term Debt Ratings

	Foreign Currency		Local Currency	
	Moody's	S&P	Moody's	S&P
Argentina	Ba3	BB	Ba3	BBB-
Brazil	B2	B+	Caa1	BB-
Chile	Baa1	A-	NR	AA
Costa Rica	Ba1	BB	Ba1	BB+
Panama	Ba1	BB+	NR	BB+
Peru	Ba3	BB	Baa3	BBB-

Source: Bloomberg.
Notes:
Moody's: Baa1 > Baa3 > Ba1 > Ba3 > B2 > Caa1.
S&P: AA > A- > BBB- > BB+ > BB > BB- > B+.
NR: No rating.

Source: Goldfajn and Olivares (2000: 16)

3.4 Labour Market Reform

Just as labour market reform is scantily addressed by both proponents and opponents of dollarization so it is also scantily addressed in empirical literature. So far, it is only Soto (2009) who attempts to conduct some empirical analysis on the link between dollarization, growth and employment for which he uses the case of Ecuador (1991 – 2006). The link to labour market reform as subsumed in the benefits of dollarization is found to be very weak. Using a simple labour demand model, Soto finds that unemployment remained stagnant at 10 percent. The fact that unemployment is unchanged by the rate of growth suggests that dollarization has not enhanced labour market flexibility to ensure any reform. Though Soto did not employed a before and after or a control and treatment analysis, the fact that the analysis begin from a period ten years before dollarization and six years after dollarization makes it a comparative analysis between two periods.

Goldfain and Olivares (2000) use descriptive graphical analysis to present Panama's employment records in Figure 5. By the graphical presentation, it tends to show that dollarization has not influenced employment level in Panama as it is implicitly suggested in the labour market reform proposition.

When these results are compared with unemployment data from the World Bank in Table 4, they show that the unemployment average of Panama for the period 2002 – 2009 is 10.8 percent. This is even slightly higher than what Soto found for the period before 2002. Except for El Salvador which shows roughly the same rate of unemployment as a few other countries in the Western Hemisphere, both Panama and Ecuador have higher unemployment rates than most countries in the Western Hemisphere. These results refute the claim that dollarization enhances labour market reform. Table 4 and Figure 6

show a picture of unemployment in three officially dollarized countries and a sample of five non-dollarized countries in Latin America for recent years.

Figure 5: Panama's unemployment (1985 – 98)

Figure 5: Unemployment rate

Source: IFS

Source: Goldfajn and Olivares (2000:15)

Table 4: Unemployment (% of Labor Force)

Country Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	18.3	17.9	16.1	12.6	10.6	10.1	8.5	7.8	8.6	
Bangladesh			4.3		4.3					
Bolivia	5.4	5.4		4.3	5.4	5.3	5.2			
Botswana	18.6		23.8			17.6				
Chile	9.1	8.9	8.5	8.8	8.0	7.7	7.1	7.8	9.7	
Costa Rica	6.1	6.4	6.7	6.5	6.6	6.0	4.6	4.9		
Ecuador	*10.7*	*9.1*	*11.4*	*8.6*	*7.7*	*7.7*	*6.1*	*7.3*	*6.5*	
El Salvador	*7.0*	*6.2*	*6.9*	*6.8*	*7.2*	*6.5*	*6.4*	*5.9*		
Indonesia	8.1	9.1	9.5	9.9	11.2	10.3	9.1	8.4	7.9	
Kazakhstan	10.4	9.3	8.8	8.4	8.1	7.8	7.3	6.6	6.6	
Pakistan		7.8		7.4		6.1	5.1	5.0		
Panama	*14.7*	*14.1*	*13.6*	*12.4*	*10.3*	*9.1*	*6.8*	*5.9*		
Paraguay	7.6	10.7	7.9	7.4	5.8	6.7	5.6	5.6		
Peru	7.9	7.7	8.4	9.0	8.7	7.4	6.7	6.8		
Philippines	11.0	11.5	11.2	11.9	7.7	8.0	7.4	7.3	7.5	
South Africa	29.5	30.5	31.2	26.2	26.7	25.5	23.0	22.9	23.8	
Sri Lanka	7.9	8.8	8.2	8.4	7.7	6.5	6.0	5.2	7.6	
Uruguay	15.2	17.0	16.8	13.1	12.2	10.6	9.2	7.6	7.3	
Vietnam	2.8	2.1	2.3	2.1				2.4		

Source: WDI

Figure 6: Unemployment in Latin America (2002 – 2009)

Source: WDI

29
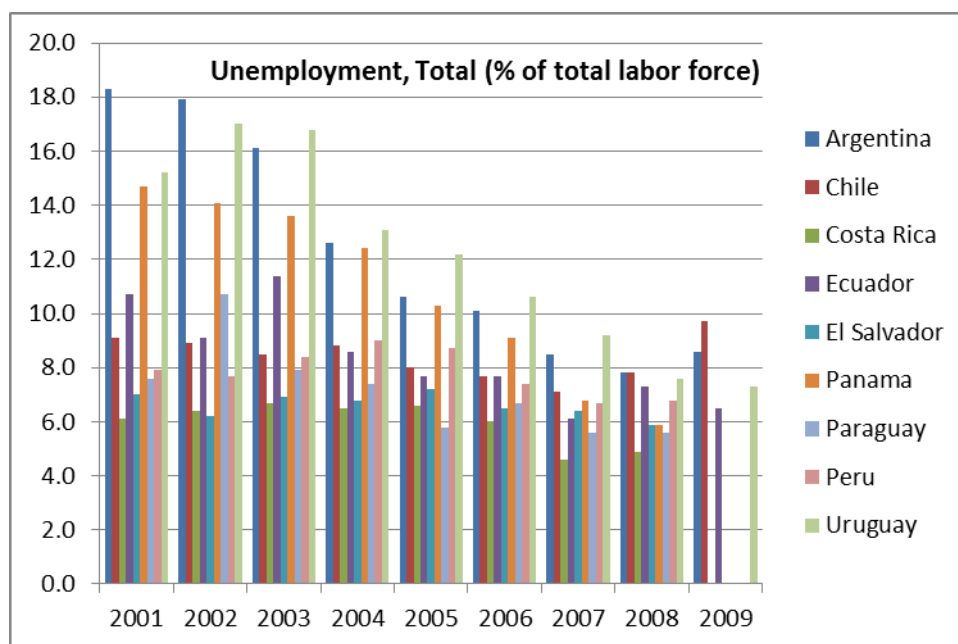
3.5 Trade Financial Integration

In order to corroborate the trade integration proposition of dollarization, Edward (ibid) compares the current accounts of all dollarized countries with that of all non-dollarized countries in Latin America and finds that dollarized countries have a much lower current account deficit of 2.2 as a percentage of GDP compared to 4.0 percent for all non-dollarized countries. However, taking Panama separately, which is the main "dollarization laboratory", the results are different. Current account deficit for Panama is 4.2 as a percentage of GDP while it is 4.0 percent for all dollarized countries. These results do indicate that even if the trade integration proposition holds true, it does not change the import orientation of dollarized countries.

Rose (2000) and Frankel and Rose (2001) use the gravity model approach to estimate the impact of a common currency on trade between nations for 186 geographical units. They use panel data for six periods of five year interval (1970, 1975, 1980, 1985, 1990 and 1995) from the United Nation's International Trade Statistics Yearbook. In line with dollarization proposition, they find large effects on trade between countries with common currency, estimated to be about three times higher than countries with a currency of their own.

Although all three authors, Edwards (2001), Frankel and Rose (2001) and Rose (2000) measure trade performance in some respect, one cannot expect the results to be the same. The reason is that and Edwards looks at net trade position while Rose and Frankel and Rose look at trade volume. Of course an increase in a country's trade volume with a partner country may not necessarily increase exports and export earnings. If dollarization is to benefit a country through trade integration, such benefits should be translated into increased export capacity.

Besides, while Edwards separates officially dollarized countries from currency unions, Rose and Frankel and Rose take both independent currency unions and officially dollarized countries as a whole, yet they do not consider elements of endogeneity. Moreover, the empirical analyses do not provide any evidence with respect to time lags of dollarization effect on trade. Hence it is impossible to predict how long it takes for the estimated effects to be attained. Lastly, geographical proximity plays a major role in their analyses which do not apply for several developing countries like in Sub-Saharan Africa wanting to adopt the dollar or the euro. Hence, one cannot draw a conclusion on the trade benefits of dollarization from the results of Rose (2000) and Frankel and Rose (2001).

Abrego et al (2006), assessing the case of Ecuador, find evidence of growth in trade, but largely imports at the expense price competiveness for exports. They find that traditional non-oil exports declined by 11 percent of GDP in 1997 and 6 percent in 2004. Klein (2005) who conducts the supposedly first empirical work on the link between trade and dollarization, using the gravity model approach, finds a weak link for other countries except for Panama and the Dominican Republic. On the contrary, Lin and Ye (2010), reworking the data set used by Klein, employed non-parametric propensity score matching and contradict Klein's findings. However, they do not take into consideration the impact of the boom in oil exports which favored Ecuador's fiscal position at the time.

Data from the World Bank in Annexes 3, 4 and 5 also show an increase in trade volume for Ecuador, El Salvador and Panama. However imports constitute more of the trade volume than exports. This brings into question the net benefit of trade in a dollarized economy which is a matter of another research.

On the other hand, with data on inflows from foreign direct investment and multinational corporations, Welfens and Ryan (2011) use the export-platform model to show the positive impact of financial integration on trade in the European Union. However, such impact is inadequate to justify the dollarizing of developing countries as some proponents seem to do. The reason is that developing countries lack the institutional and structural dynamics of the EMU.

3.6 Economic Growth

Results from Edward (2001) show the mean annual per capita growth for all dollarized countries in the sample to be 0.16 percent while that of all non-dollarized countries is 1.38 percent. When Panama is treated separately, growth is otherwise improved at 1.31 per annum compared to 1.38 for all non-dollarized countries. These results do not confirm the growth proposition of dollarization. Moreover, considering Panama as the main test case for dollarization, dollarized countries have a lower growth rate than non-dollarized countries.

Often, dollarization proponents treat currency boards as dollarized. Ghosh, Gulde and Wolf (1998) for example render such treatment in their analysis of inflation and growth impact of currency boards and find strong evidence on trade when they contrast currency boards to floating or pegged exchange rate regimes. However, the caveat in such results is that, while they may have some resemblance of dollarization, currency boards have other escape elements for macroeconomic manoeuvrings which are absent in officially dollarized countries.

In the case of Ecuador, after correcting for factors not related to dollarization such as the oil boom which was coincidental with dollarization, Abrego et al (2006) find a slight increase in growth at 3.4 percent over pre-dollarization period. Soto (2009) on the other hand arrives at a more attractive result of 4.5 percent annual growth rate which may suggests that dollarization leads to growth. However, non-dollarization factors such as the oil boom which Abrego et al controlled for may have impacted his results to be slightly higher. Moreover, of Soto's fifteen year analysis period, the first ten years are before dollarization. The non-dollarized years in the research period may have an impact on the results. Hence, drawing a growth performance conclusion from the result may be faulty.

GDP growth results presented by Goldfain and Olivares (2000) do not show any significant variation with the Latin American average which corroborates findings by Edwards (2001). Panama's average growth is found to be 4.1 percent while the Latin American average is 3.6 percent. The results show that Panama's growth rate is even lower when compared to Brazil, Chile and Costa Rica whose growth rates are 4.6 percent, 4.2 percent and 4.2 percent respectively.

Verifying these empirical findings with data from the World, it is evident from Table 7 and Figure 8 that with the exception of 2007; officially dollarized countries have shown lower growth than most developing countries, especially when compared to other member countries in the Western Hemisphere. Hence, the link between dollarization and growth is very weak.

Table 5: Panama's GDP growth compared with Latin America

Table 9: GDP Growth 1997-98
(Annual rates)

	1997	1998
Latin America	**5,2**	**2,3**
Argentina	8,4	4,0
Brazil	3,0	0,5
Colombia	3,0	2,0
Costa Rica	3,7	5,5
Dominican Republic	5,2	7,0
Mexico	7,0	4,5
Nicaragua	5,0	3,5
Peru	7,4	1,0
Venezuela	5,1	-1,0
Caribbean	**2,0**	**1,2**
Panama	**4,7**	**3,9**

Source: *Informe Econômico 1998, Min. de Economía y Finanzas, Panama*

Source: Goldfajn and Olivares (2000: 23)

Table 6: Panama's macroeconomic performance compared with Latin America.

Table 3: Panama and Latin America's Macroeconomic Performance, 1970 - 1998
(in percent)

Countries	Inflation		GDP Growth		Fiscal Deficit (% of GDP)
	Average	Volatility (s.d.)	Average	Volatility (s.d.)	
Argentina	46.79	31.50	2.3	5.1	3.7
Brazil	62.43	30.67	4.6	4.4	4.7
Chile	26.42	22.92	4.2	6.3	0.5
Costa Rica	14.20	9.06	4.2	3.5	3.0
Mexico	22.57	14.93	4.0	3.8	4.4
Panama	3.25	3.46	4.1	5.7	3.8
Peru	36.49	27.65	2.6	5.8	3.4

Source: IFS.

Notes: To avoid outliers, we calculated the average and volatility of the inflation using $\pi' = \pi / 1 + \pi$.

Fiscal Deficit is the public sector borrowing requirement of the Central Governement.

Source: Goldfajn and Olivares (2000: 11)

Figure 7: Panama's GDP Growth (1985-98)

Figure 4: GDP Growth
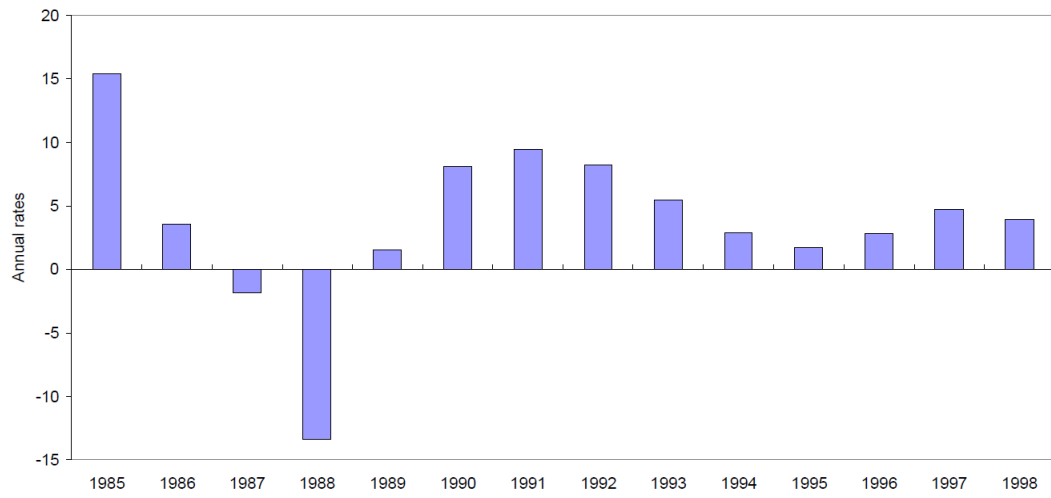
Source: IFS

Source: Goldfajn and Olivares (2000: 14)

Table 7: GDP Per capita growth (Annual %)

Country Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	-5.4	-11.7	7.9	8.1	8.2	7.5	7.7	5.8	0.0	8.2
Bangladesh	3.4	2.6	3.5	4.6	4.5	5.3	5.2	5.1	4.6	4.7
Bolivia	-0.3	0.5	0.7	2.2	2.6	3.0	2.8	4.4	1.7	2.6
Botswana	2.0	7.5	5.0	4.8	0.4	3.7	3.3	1.4	-6.2	5.8
Cape Verde	2.0	2.8	4.5	-2.1	10.4	8.9	7.6	5.3	2.7	4.5
Chile	2.2	1.0	2.8	4.9	4.5	3.5	3.6	2.7	-2.6	4.2
Costa Rica	-1.0	0.9	4.4	2.4	4.1	7.0	6.1	1.0	-3.0	2.0
Ecuador	*3.6*	*2.5*	*1.8*	*6.2*	*4.3*	*4.2*	*0.5*	*5.7*	*-1.1*	*2.1*
El Salvador	*1.3*	*2.0*	*2.0*	*1.5*	*2.7*	*3.8*	*4.2*	*2.0*	*-4.0*	*0.4*
Ghana	1.7	1.0	1.8	1.6	1.4	3.1	3.5	4.3	6.4	8.1
Indonesia	2.3	3.2	3.5	3.7	4.4	4.3	5.2	4.9	3.5	5.0
Kazakhstan	13.7	9.8	8.9	8.8	8.7	9.5	7.7	2.0	-0.4	4.4
Kenya	1.1	-2.1	0.3	2.4	3.2	3.6	4.3	-1.0	0.0	2.6
Nigeria	0.6	-0.9	7.6	7.9	2.8	3.6	3.8	3.4	4.4	5.2
Pakistan	-0.1	1.3	3.0	5.5	5.8	4.3	3.8	-0.2	1.8	2.5
Panama	*-1.3*	*0.3*	*2.3*	*5.6*	*5.3*	*6.7*	*10.2*	*8.3*	*1.5*	*5.8*
Paraguay	0.0	-2.0	1.8	2.1	0.9	2.4	4.8	3.9	-5.5	13.3
Peru	-1.2	3.6	2.7	3.7	5.6	6.6	7.7	8.7	-0.2	7.6
Philippines	0.7	1.5	2.8	4.6	2.8	3.3	4.8	2.4	-0.5	5.8
Puerto Rico										
Rwanda	3.9	7.9	0.3	5.6	7.0	6.4	2.6	7.9	1.0	4.3
South Africa	0.7	2.2	1.6	3.3	4.1	4.4	4.4	2.4	-2.7	1.5
Sri Lanka	-2.5	2.8	4.7	4.2	5.0	6.5	5.7	4.9	2.6	7.0
Tanzania	3.3	4.4	4.0	5.0	4.5	3.8	4.1	4.4	3.0	3.9
Uruguay	-4.1	-7.7	1.0	5.1	7.3	4.1	7.0	8.3	2.2	8.1
Vietnam	5.5	5.8	6.1	6.5	7.2	7.0	7.3	5.2	4.2	5.7

Source: WDI

Figure 8: GDP per capita growth (Annual %) 2001-10

GDP per Capita growth (Annual %)

Legend: Argentina, Chile, Costa Rica, Ecuador, El Salvador, Panama, Paraguay, Peru, Uruguay
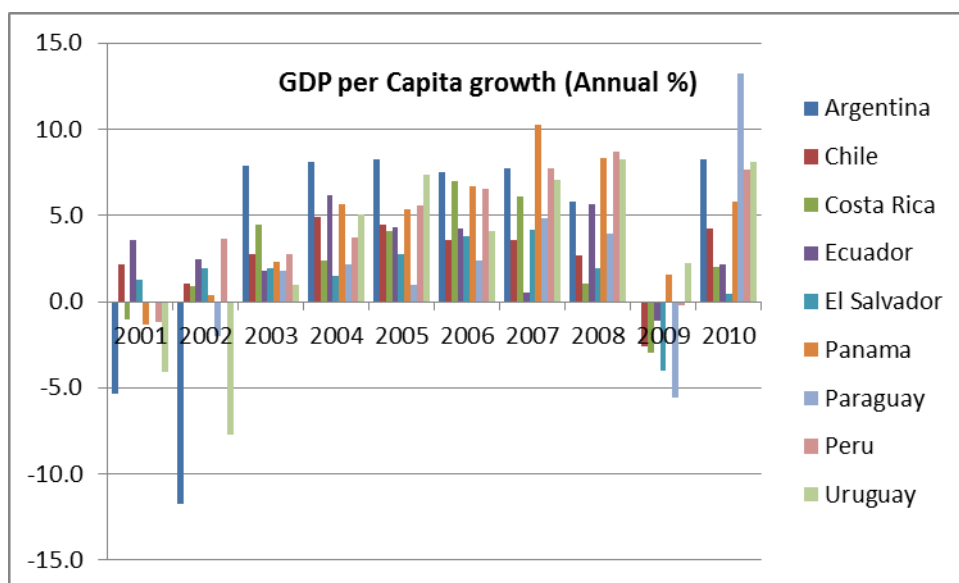
Source: WDI

3.7 Chapter Summary

There is a consensus in empirical literature that dollarized countries experience very low inflation relative to counterparts with independent monetary policies; sometimes even lower than global average. There is evidence from data review that trade is increased in all dollarized countries, but imports are very high relative to most developing countries. Empirical evidence from literature and macroeconomic data review of current World Bank data also show rates of growth in Panama slightly higher than some countries in the Latin American block, taken exclusively. However, one cannot hasten to render a conclusion based on Panama alone, because results for other officially dollarized countries suggest otherwise. Specifically in the case of Ecuador and El Salvador, which are also relatively large economies compared to Panama, growth results are lower than many Latin American countries with currencies of their own. This suggests that other factors other than dollarization, such as its geo-strategic location and political embeddedness with the United States, have influenced economic performance in Panama.

Thus far, the labor market reform proposition of dollarization remains entirely defeated. Empirical evidence and WDI data review (2002 -2010) suggest that unemployment remains static and high in all dollarized countries. This tends to suggest that the anticipated welfare by dollarization has so far not being achieved. However, empirical study on the macroeconomic impact of dollarization is still scant. Hence, evidence on dollarization performance in developing countries remains largely inconclusive.

Chapter 4 De-dollarization Efforts

4.1 Introduction

The consequence of weak and complacent economic policies in the developing world has caused risk – adverse economic agents to seek ways of self-protection against assets loss. Jameson (1986:1) puts it that "… the decay of the Bretton Woods System, the strong tendency toward international financial liberalization, and the rapid increase in international financial activity as a result of the petro-dollar explosion resulted in the extension of currency substitution, or de-facto dollarization in many Latin American countries".   In Peru for example, according to Urjevic and Jained, (1985, cited in Jameson, 1986) account that asset denomination in dollars increased from 1.2 percent in 1974 to 36 percent by 1979 and hit a peak of 75 percent in 1975. Peiers and Wrase (n.d.), in their study of dollarization hysteresis from informal Bolivian Credit market, claim that dollarization in Latin America was the result of political instability and the debt crisis of the 1980s where money-financed deficits generated huge up-shoot in inflation which brought about loss of confidence in domestic currency. The resulting move was a shift from domestic currency to the reasonably stable purchasing power of the dollar. Sub Saharan Africa is no exception. In Liberia, for example, the U S dollar is estimated to account for about 90 percent of money supply (Erasmus et al. 2009). Zimbabwe is the latest case of de-facto dollarization in the developing world where failed monetary policies to curb inflation have led to asset and currency substitution.

Notwithstanding de-facto dollarization is a monetary phenomenon reluctantly accepted by policy makers and their governments in most developing countries. The primary reason is that it limits their centralized control over domestic monetary policy. This is evidenced by the several attempts in most developing countries to limit foreign currency holdings and transactions. In general, the drivers of de-facto dollarization are no different from those of countries which formally dollarized in recent years. This conclusion is drawn from the datum that de-facto dollarization preceded de jure dollarization in Ecuador. Therefore review of de-dollarization efforts in this chapter will not focus on drivers of de-facto dollarization. Instead, the paper investigates the mechanisms used to erode foreign currency holdings in favour of domestic currency as far as addressed in literature. These mechanisms shall be discussed under two sub headings: i. interventionist policies ii. market-driven policies.

In order to arrive at rational conclusion on the success of de-dollarization programs, the paper first considers a benchmark against which a country is considered to be dollarized de-facto. A country is said to be highly dollarized when foreign currency deposits as a percentage of total bank deposits exceed 30 percent (Bogétic, 2000). Galindo and Liederman (2005) put the threshold at 40 percent of foreign currency deposits and loans as a percentage of total bank deposits and loans. For the purpose of this research, I shall consider the threshold of 30 percent set by Bogétic whether it is for deposits or loans. It is against this threshold that conclusions will be drawn on whether a country has successfully de-dollarized or not.

4.2 Interventionist Policies

In addition to the petrol dollar influence on the inflow of the dollar, favourable terms of trade in petroleum and mineral export was also a factor influencing dollar inflows in Bolivia. By using the bank deposit ratio as the standard measurement of dollarization, the rate of dollarization in Bolivia was 35 percent. Following periods of massive inflation and loss of control over monetary policy, the authority embarked on de-dollarizing the economy first in 1981 with counter neoclassical intervention policies. The interventions were harsh and crude to be taken kindly by market agents. Some of the measures were the imposition of capital restrictions and the immediate closure of the dollar window. The state took charge of intermediation for all dollar transactions and reinforced the authority of the central bank to take full charge of all foreign exchange transactions. Another related measure aimed at making domestic currency more attractive was the setting a high deposit rate for domestic currency and a very low deposit rate for dollar. But a more crude measure in this campaign was the force conversion of all dollar deposits into pesos at a fixed rate lower than market value following the ineffectiveness of preceding measures such as the closure of the dollar window in Bolivia (Jameson 1986).

However, such policies do not go without effect on the very economy they are intended to rescue. In the case of force conversion of dollar deposits into domestic currency, it requires the central bank to assume responsibility for the provision of dollars of all prior foreign obligations incurred by the banks prior to and after the foreign currency regulation policy. The ability of the government of amass dollar reserves to meet such dollar liquidity requirement is a matter of concern in developing countries. In the case of Bolivia, Jameson (ibid) accounts that the state defaulted on the promise to provide such liquidity on behalf of banks.

On the other hand, state intervention in foreign currency transactions may be perceived as an interference with private enterprise. Undoing what was previously acceptable in the midst of prolong currency crisis may not easily be trusted. Economic agents may react in non-compliant ways which may circumvent the very de-dollarization policy. Ize and Yeyati (2005) for example, account that Mexico's coercive de-dollarization initiative in the early 80s resulted to capital flight and off-shore dollar intermediation.

Likewise, recusing private agents from participating in foreign exchange business in the midst of crisis, as was done in Bolivia, have the tendency to fuel exchange rate and inflationary crisis by the creation of under-ground markets for foreign currency transactions. In such case the underground markets tend to dictate the rate of exchange and the pace at which inflation runs, given that market agents needing asset security through foreign currency will pay whatever price for it. The reason is that acquiring foreign currency through legal means is made almost impossible through the legal bureaucracy. Very few economic agents are capable of passing government's scrutiny to transact in foreign currency. Hence, underground markets are established and de-dollarization policies tend to fail.

For example, Garcia-Escribano, and Sosa (2011) found that dollarization in Bolivia declined by just over 10 percent. Jameson (1986) on the other hand accounts that following the launch of de-dollarization program in 1981 in Bo-

livia; the economic situation went from bad to worse. Real GDP declined by over 7 percent, unemployment more than doubled and inflation stretched from 30 percent in 1980 to 10,000 percent in 1985. The economy was drained of foreign reserves as non-bank transmission of dollars and dollar flight prevented government from exercising its monetary policy influence. The World Bank had to facilitate a structural adjustment loan to stimulate dollar inflow into the economy. Hence, the economy was re-dollarized through informal channels despite the legal restraint (Jameson, ibid). According to Peiers and Wrase (n.d.) dollarization rose from 35 percent in 1986 to 63 percent in 1991 in Bolivia.

Peru also attempted at least one unsuccessful interventionist de-dollarization policy following the massive Latin American inflation of the 1970s. As economic agents lost confidence in the peso, alternative security was sought in foreign currency resulting to high dollarization. Galindo and Leider-man 2005) estimate that more than half the aggregate deposits in Peru were denominated in dollars. Like Bolivia, it made its first but crude attempt towards de-dollarization in 1985 by forcing the conversion of dollar deposits in the banks into pesos. Market reaction was nowise different from that of Bolivia. The effect, like Bolivia, was capital flight and the establishment of black markets (Garcia-Escribano, and Sosa 2011). The case of Peru further evinces that intervention mechanisms, especially crude methods, do not easily succeed when confidence in domestic currency and monetary policies is lost.

Álvarez-Plata and García-Herrero (2008) point out the case of successful market-driven de-dollarization in Israel from 50 percent deposit dollarization in 1980 to under 15 percent in 2004. However, there is no account in literature that de-facto dollarization in Israel was as the result hyperinflation or any form of acute economic crisis. It is apparent that U.S. financial aid must have influenced such huge inflow of dollars and not necessarily market agents' demand for dollars. Therefore de-dollarizing such relatively stable economy may have been much easier without any panic and market resistance.

4.3 Market Driven Policies

Countries dollarized by de-facto have done so because of policy makers' weakness and complacency in implementing strategic regulatory and credibility policies which otherwise would have prevented dollarization. Latin American countries for example, as Jameson (1986) recalls, became heavily dollarized primarily because of huge inflow of petrol dollar credit of the 1980s. But the constraints posed to monetary policies prompted several countries on the continent to shift policy towards de-dollarization. Attempts by these countries to de-dollarize through market driven policies show that similar policies would have been used in building the confidence psychology in domestic currencies ex ante. Ex post responses have proven costly and almost irreversible as rebuilding the credibility psychology proves difficult. Ize and Yeyati (2005) point out the establishment of capital markets in domestic currency and the strengthening of monetary regulations as the two main market-driven policy drivers in these de-dollarization programs.

In Peru for example, de-dollarization policies, following the failure of a crude intervention mechanism in 1985, were largely directed at market-driven processes. By 2001, dollarization as a ratio of total deposits was already 75 per-

cent i.e., 75 percent of total deposits were in dollars. These market-driven measures were not introduced successively Instead they were a series of market-driven processes simultaneously supported by prudent stability and credibility macroeconomic policies. The authority instituted inflation targeting mechanism anchored to expectations. Given that large proportion of deposits and credit were in dollars, the authority established a capital market in domestic currency which facilitated long term debt in pesos as a way of making pesos credit-attractive. This was supported by other medium and long term stability measures aimed at restoring credibility in the domestic currency. One measure was the tightening of reserve requirement for foreign currency deposits. A second measure was the routine evaluation of currency risk with financial institutions. A third measure required banks to hold liquid assets to at least 20 percent in dollars for every bank liabilities with maturity period ranging one to twelve months. A fourth measure was limiting banks foreign exchange position by instituting capital requirements on foreign exchange positions (Garcia-Escribano, 2010). All these measures were aimed at limiting risk in the financial system and ensuring liquidity in the economy while building credibility in the domestic currency.

Bolivia also, in an apparent failure with interventionist policies, turned its attention to market-driven policies. Beginning early 2009, it imposed additional capital requirement of up to 1.5 percent for loans denominated in foreign currency. The limit on banks foreign currency open position was reduced form 70 percent to 60 percent. In 2008, the monetary authority raised the foreign currency reserve requirement up to 30 percent and lowered the corresponding reserve requirement for domestic currency to 6 percent. It was an apparent move to encourage banks' intermediation in local currency. The monetary authority, like the case of Peru, also established a capital market in domestic currency whereby public and private debts are issued in Boliviano. A deterrent market-driven tax policy was introduced whereby a financial transaction tax is imposed on foreign currency debits and credits (Garcia-Escribano, and Sosa (2011). Despite the efforts to de-dollarize, Garcia-Escribano, and Sosa ibid) account that dollarization in Bolivia, Paraguay and Peru declined only by an average of 27 percent of the 80 percent average for the four countries.

Meanwhile, similar market-driven mechanisms were used in attempts to de-dollarize the Uruguayan and Paraguayan economies. Both, like Peru and Bolivia, established capital markets in domestic currency where public and private sector bonds could be issued. The measure was aimed at attracting credit in domestic currency. In 2003 Uruguay instituted a banking policy which set banks open foreign currency position at 150 percent of the minimum bank capital requirement. In 2007, Paraguay introduced a banking policy setting the net limit to banks opened foreign currency position at 50 percent. These policies were equally aimed at minimizing risk in the financial system with respect to the proliferation of dollar transactions and asset holdings in excess of domestic currency.

Market driven policies have been preferred to interventionist policies, because they move simultaneously with stabilization efforts and a gradual rebuild of market confidence. The caveat is that such stability efforts must be sustained over a long period without reversal in order for de-dollarization to be successful. In the case of Peru for example, Garcia-Escribano (ibid) accounts

that eight years later following the launch of de-dollarization program in 2001, dollarization declined by a good percentage, but the country remained dollarized by 52 percent in 2009.

However, Chilean experience with de-dollarization is considered the most successful in Latin America. It was a mix of macroeconomic policy initiatives and monetary regulations similar to those of Peru and Bolivia. But the bottom line is that those policy initiatives were preceded by a long period of institutional development as a buffer to absorb policy shocks during the de-dollarization process. The drawback on emulating Chile's good example is that the accompanying costs are exceptionally high and are not affordable in many developing countries.

For instance, Herrera and Valdes (2004) account that the government of Chile spent about 35 percent of its GDP in macroeconomic rescue operations to save the economy from de-facto dollarization afflictions of the 1960s and 70s which were primarily generated by liberalization and deregulation policies. Intervention and liquidation of the financial sector involving 16 banks and financial institutions from 1980 – 1986 was part of the institutional rescue of a failed banking system. Also part of the rescue package was a 50 percent exchange rate subsidy to debtors as most bank loans prior to the crisis were dollar denominated. Banks were offered up to 5 years indexed bonds by the central bank as macro operational assistance.

This institutional set-up was followed by credibility policies monetary policy regulations and fiscal consolidation. The main credibility driver was indexation based on historical inflation. Indexation was not restricted to only financial assets, but also to wages. Monetary regulations were similar to those of Bolivia and Peru including capital controls, exchange rate management, reserve requirements and monetary supervision (Herrera and Valdes (2004).

The idea behind indexation was to build economic agents' confidence in domestic currency by providing insulation against exchange rate risks. The drawback however is that indexation itself has inflationary tendencies and may help fuel inflation in smaller economies.

4.4 Why has De-dollarization Hardly Succeeded?

As indicated earlier, developing countries have become dollarized by de-facto not because dollarization was unavoidable, but rather because of weakness and complacency in monetary policies. A late effort to restore credibility to the system after economic agents have taken self-defence measures against currency shocks is unlikely to succeed just by mere pronouncements and new credibility policies in a short run. Market agents tend to resort to a "wait and see game" when credibility policies are introduced. During these periods of struggle to regain monetary policy credibility, any intermittent inflationary and exchange rate shocks are likely to return mistrust to the system. Hence one major factor hindering de-dollarization is lack of trust by economic agents in monetary policies, policy makers and the governments of developing. It is a psychological effect which makes it difficult to defeat.

Peiers and Wrase (n.d.) for example argue that de-dollarizing economies following protracted periods of mistrust of the system go beyond the imple-

mentation of credibility policies. The contention is that the larger the historical inflation, the more likely it is for dollarization to remain persistent in an economy. Hence, they opine that reversing the situation is possible only if domestic inflation is lowered enough to an extent where gains in inflation cut are adequate to overcome a transaction cost differential between the use of the dollar vis-à-vis the domestic currency. The cost Peiers and Wrase refer to in this case is the cost of switching from dollars to domestic currency which Duffy et al (2006) refers to as dollarization trap. Guidotti and Rodriguez (1991) in their model established that the cost of using foreign currency for transaction have a negative influence on market participants as they continue to hold on to dollars for transactions as long as they see their market counterparts do so.

What these authors suggest is that, despite credibility measures being instituted, de-dollarization has hardly being successful because developing countries have hardly reduced inflation to levels which make domestic currencies more attractive than foreign currency. The incentive proposition by Peiers and Wrase and Duffy et al as a way of compensating for inflation and erasing the inflation psychology is very attractive. But the drawback is that such incentives may be too costly for developing countries. The important issue associated with such incentives which is not given attention in literature is the size and potential costs to developing countries.

A similar point is made by Antinolfi, et al. (2007). They argue that dollarization is a market-driven phenomenon which comes about when inflation exceeds the threshold range of 10 – 40 percent. Their contention is that in order for de-dollarization to be successful, the rate of inflation must be lowered to a level lower than the threshold. But this benchmark is difficult to meet in developing countries even in a medium term especially when global price level keeps rising than falling. This could therefore help to explain why developing countries have struggled to roll back dollarization following hyperinflation.

Kamin and Ericsson (2003) in a similar line argue that the success of de-dollarization is hinged on the opportunity cost of holding domestic currency. The reason why de-dollarization has hardly been successful in highly dollarized economies is that the opportunity cost of holding domestic currency in terms of foreign currency as an alternative may not be sufficient to induce a substitution away from dollars to local currency. Hence making domestic currency attractive to hold and engineering the alternative cost of holding foreign currency such that it is undesirable to hold is almost an unattainable target in developing countries. Attempts to achieve such may require high costs, some of which may be distortionary to overall economic goals. Conflict of interest between long economic goals and immediate political stability makes it a hard choice.

However, the main reason why de-dollarization efforts have hardly succeeded in developing countries is the lack of institutional and legal framework to support regulatory policies. Though they are a necessary condition upon which credibility policies are to gradually reduce dollarization, they are either too costly to implement or too difficult to establish. Ize and Yeyati (2005:20) for example emphasize that "policy reform should thus concentrate on institutional and capacity building measures that gradually improve the central bank's capacity to conduct an independent and sound monetary policy" Herrera and

Valdes (2004:37) also sound a caveat regarding the use of monetary controls and regulations "[…] that to implement them successfully, one requires as a precondition to have legal, administrative and judicial tools to enforce them effectively, which are rarely available".

For this reason, some countries have pursued crude intervention methods such as force conversion of foreign currency deposits into local currencies and closure of foreign currency windows other than pursuing market-led processes. But coercing economic agents to the use of a currency in which they have no trust may only lead to under-ground marketing and financial disintermediation which have a tendency to re-dollarize economies by de-facto.

Notwithstanding, even for countries which have pursued market-driven policies to de-dollarize, implementation have not only being difficult but also requiring protracted periods of patient expectations. Hence, (Herrera and Valdes 2004:1) have cautioned that "[…]despite the success of the Chilean experience, the policy implications for other countries considering de-dollarization are not easy to implement elsewhere" Pundits Guidotti and Rodriguez (1992,), and Duma (2011) are of the conclusion that dollarization is an irreversible phenomenon.

4.5 Chapter Summary

De-dollarization in developing countries has been pursued through two alternative mechanisms – either through intervention policies or through market-driven policies. The former is more of a coercive mechanism whereas the latter is planned processes supported by institutional and structural foundations. It follows that countries which have pursued de-dollarization forcefully without institutional and structural reforms such as Bolivia have only succeeded in prompting the creation of underground markets for foreign currency transaction and foreign currency flight leading to liquidity constraints for reserve currency. Others which follow market-driven processes like Chile have done so by painstakingly pursing credibility policies based on well-established institutional and structural framework. But credibility of policies is hinged on long-term macroeconomic stability which is only achieved at high costs. Even so, based on ratios of foreign currency composition of bank deposits and bank loans, there is hardly any evidence that dollarization has been successfully wiped out in any developing country that has experienced hyper-inflation and de-facto dollarization.

It is suggested thus far that only Pakistan and Israel have been successful in rolling back dollarization using crude intervention policies. However, the historical causes and the level of de-facto dollarization and the mechanisms used to roll back de-facto dollarization in these countries remain unattended to literature. Hence, they cannot be suggested cases of successful de-dollarization.

Chapter 5 Conclusion

The cardinal objectives of this research paper were to assess the merits of the arguments for dollarization in developing countries, to investigate empirical the evidence which lends support to the arguments for dollarization, and to look at the experiences of countries have attempted to de-dollarize. The current level de-facto dollarization in developing countries and the wave of countries of already acceding to official dollarization, most notably Panama, Ecuador and El Salvador in the Western Hemisphere; and the political endorsement of dollars in Liberia and Zimbabwe of recent for all public and private transactions was the motivating force behind this research.

The paper began with a review of theoretical literature on dollarization. The objective was to find out the underlying rationale for which dollarization is being encouraged in developing countries. In order to give the review a balanced merit, critical consideration was given to literature from diverse persuasions and influence including mainstream academics, policy papers, and working papers from the IMF and the World Bank. The consensus from literature is heavily linked to recurrent hyperinflationary tendencies in developing countries as the prime rationale for which dollarization is being sought. Central to proponents' argument is that developing countries are predisposed to inflation and financial crises because they are incapable of managing independent monetary policies. It follows from the propositions that dollarized countries experience very low inflations relative to global average. Apart from inflation, it is suggested that dollarized countries tend to experience low currency risk which eventually promotes financial and trade market integrations. Financial integration is said to be achieved through international financial intermediaries that are encouraged by a risk-free currency environment. It is also proposed that dollarization enforces fiscal discipline and enhances labour market reform. The former is widely believed to be central to inflationary problems in developing countries due to monetization of budget deficits, while unemployment and labour market rigidities are blamed on the latter. The bottom line is that dollarized countries are believed to experience higher and faster economic growth than developing countries with independent monetary policies.

However, this paper has established that the anticipated benefits for which dollarization is being proposed to developing countries are a mere conglomeration of assumptions which have no foundation in standard macroeconomic theory. Some literatures make passive reference to Mundell's Theory of Optimum Currency Area (OCA)[9], but none emphatically bases the rationale for dollarization on the OCA. The implicit reason for this is that no developing countries meet the OCA criteria for dollarization in respect of adopting a large country's currency

Moreover, while proponents of dollarization have placed much emphasis on inflation cutting as a major break-through for countries prone to currency

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[9] Mundell, R., A. (1969), A Theory of Optimum Currency Areas, t*he American Economic Review* 51 (4) 657-665.

problems, opponents somewhat unanimously place their emphasis on the loss of influence over monetary policy, specifically in respect of the loss of seignorage and the loss of central banks' lender of last resort role. Interestingly, neither proponents have offered any details regarding the mechanisms through which benefits of dollarization are achieved nor opponents do also question them.

The main analytical issues unearthed by this paper are that inflation cutting, which is the key rationale for dollarization, is not achieved by any adjustment policies. Instead, it is achieved by a crude method – simply preventing countries from printing money. Realistically, this drastically reduces money supply and savings. By standard economic theory, growth is hindered in this process, hence making economic growth stagnant in dollarized countries. The policy implication for developing countries is that countries which adopt dollarization will be unable to influence faster economic growth.

Additionally, the fiscal discipline and labour market reform propositions of dollarization are superficially weak assumptions. The basis for the former is that 'retrieving the money printing machine' compels developing economies to run balanced budgets. But this paper has established that there is no guarantee in theory that dollarized countries are prevented from borrowing locally and externally to finance budget deficits, especially from international financial intermediaries which are attracted by the risk-free currency environment. There is also no theoretical guarantee, if fiscal discipline will also assume its usual meaning of fiscal misuse in developing countries, that dollarization will prevent countries from resource misallocation and misappropriation. Embracing dollarization is by policy implication relegating the necessary institutional and structural reforms required in developing countries to curb these problems and to sustain growth and employment. With growing labour unionism on a global skill, and the doctrine of capitalistic self-interest, there is no guarantee that dollarization cuts down the rate of unemployment through low inflation. Workers will still opt for higher wages while employers will shift to capital intensive investments as long as institutional and structural issues are not addressed in developing countries.

Hence, the rationale for dollarization in developing countries is not only weak, but lack any theoretical justification in standard macroeconomic theory. There is more of a hidden factor in the political economy agenda of large nations such as the United States other than real benefits of dollarization for developing countries.

The second aspect of this paper reviewed empirical literature with the objective of ascertaining evidence of macroeconomic success of dollarization in officially dollarized countries. There is, emphatically, a general consensus with respect to inflation. Results from Edwards (2001), Ghosh, Gulde and Wolf (1998), Abrego et al (2006), Soto (2009), Godlfain and Olivares (2000) all indicate that officially dollarized countries experience lower inflation than countries with currencies of their own. However, results from Edwards' panel data analysis and multivariate regressions of eleven dollarized countries and a large sample of developing countries with own currency; and cross-country descriptive statistical analysis by Abrego et al and Gold fain and Olivares do not support the proposition that dollarized countries are fiscally disciplined than non-

dollarized countries. Fiscal deficits in Panama, for instance, tend be higher than average in the Western Hemisphere. Moreover, credit ratings by Moody's and S$P rates Panama lower than non-dollarized counterparts in the Western Hemisphere. It highlights the point that dollarized countries lack adjustment mechanisms in monetary policy to influence their debt position.

Also results from Soto and Goldfain and Olivares show, contrary to proponents' labour market reform proposition. No dollarized country has been able to influence its rate of unemployment in the long term. Unemployment in Panama and Ecuador remain higher than most non-dollarized countries in the same geographic region.

On the other hand, Welfens and Ryan (2011) results, using the export platform model, show positive impact of financial integration on trade in the European. But the case of the EMU cannot be aptly inferred on developing countries because they have dissimilar economic structures and institutions. Although data from WDI also show positive signs of trade impact in dollarized countries, imports contribute more to the trade volume. This does not strengthen dollarized countries export competitiveness.

Finally, empirical results by Edwards (2001) Abrego, (2000) Soto (2011), Ghosh, Gulde and Wolf (1998) and Goldfain and Olivares (2000) are not suggestive that dollarized countries experience faster and higher economic growth than non-dollarized countries. In fact Edwards and Goldfain and Olivares results show that dollarized countries experience lower growth rates than non-dollarized countries considering Brazil, Chile and Costa Rica against Panama. The veracity of these results were verified using current data (2002 – 2010 and 2015 projections) from the World Bank and the IMF.

The general findings from empirical literature are in no way contradicted by this research analysis of trend data from the WDI and WEO. The low inflation findings are strongly supported but the fiscal discipline, labour market reform and economic growth claims are equally refuted by this paper. Findings by this paper corroborate no evidence of macroeconomic success in officially dollarized countries.

The third aspect of this paper reviewed literature on de-dollarization attempts by countries dollarized by de-facto. The objective was to find out the experiences of countries in trying to roll back de-facto dollarization. A standard benchmark of 30 percent deposit or loan dollarization was set to determine if a country is highly dollarized. Successful de-dollarization was verified against this benchmark.

This paper has established that dollarization is almost an irreversible trend. De-dollarization by forceful means lead to the creation of underground markets for foreign exchange, capital flight resulting into foreign currency liquidity shortfalls and higher inflation. The potential reason established is that economic agents can hardly regain faith in credibility policies by their governments after a system has been dollarized due to currency crises. The alternative use of market-processes is more appealing for de-dollarization, but the implications are that they take very long years of institutional and structural set-ups and they are also too costly. They require huge alternative policy sacrifices which most developing countries cannot afford. Whether by harsh intervention mecha-

nisms or slowly driven market mechanisms, developing countries have experienced mixed success in attempts to de-dollarize.

It is therefore the conclusion of this paper that official dollarization has not served developing countries the general purpose it intended. De-dollarization experiences of de-facto dollarized countries show that it is even more difficult, if not, impossible to de-dollarize if a country officially dollarizes. The policy alternative is that developing countries should consider structural and institutional reforms cum prudent monetary policies in the face of perennial currency fragilities other than dollarize. Dollarizing will worsen rather the cure the problem.

Annexes

Annex 1 Table 8: List of Dollarized Countries[10]

Country	Popula-tion	Political Status	Currency Use	Since
Andorra	63,000	Independent	French franc and Spanish Peseta	1278
Bhutan	1.5mn	Independent	Indian rupee	1948
Channel Islands	140,000	British dependencies	Pound sterling	1797
Cocos Islands	600	Australian external territory	Australian dollar	1955
Ecuador*	15mn	Independent	U.S. dollar	2000
Cyprus, Northern	180,000	De facto independent	Turkish lira	1974
Greenland	56,000	Danish self-governing region	Danish krone	Before 1800
Guam	150,000	U.S. territory	U.S. dollar	1898
Kiribati	80,000	Independent	Australian dollar	1943
Liechtenstein	31,000	Independent	Swiss franc	1921
Marshall Islands	60,000	Independent	U.S. dollar	1944
Micronesia	120,000	Independent	U.S. dollar	1944
Monaco	30,000	Independent	French franc	1865
Nauru	8,000	Independent	Australian dollar	1914
Niue	2,000	New Zealand self-governing territory	Australian dollar	1914
Norfolk Island	2,000	Australian external territory	Australian dollar	Before 1900
Northern Mariana Islands	48,000	U.S. commonwealth	U.S. dollar	1944
Palau	18,000	Independent	U.S.	1944
Panama	2.5mn	Independent	U.S. dollars	1904
Pitcairn Island	56	British dependency	New Zealand and U.S. dollars	1800s
Puerto Rico	3.5mn	U.S. commonwealth	U.S. dollar	1899
Saint Helena	6,000	British colony	Pound sterling	1834
Samoa, American	60,000	U.S. territory	U.S. dollar	1899
San Marino	24,000	Independent	Italian lira	1897
Tokelau	1,600	New Zealand territory	New Zealand dollar	1926
Turks and Caicos Islands	14,000	British colony	U.S. dollar	1973
Tuvalu	10,000	Independent	Australian dollar	1892
Vatican City	1,000	Independent	Italian lira	1929
Virgin Islands, British	17,000	British dependency	U.S. dollar	1973
Virgin Islands, U.S.	100,000	U.S. territory	U.S. dollar	1917
*Source: Goldfajn and Olivares (2000: pp.41). *Ecuador is the author's own inclusion*				

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[10] Information contained in this table is prior to the birth of the Euro.

Annex 2. Table 9: Foreign Direct Investment (% of GDP)

Country Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	0.8	2.1	1.3	2.7	2.9	2.6	2.5	3.0	1.3	1.7
Bangladesh	0.2	0.1	0.5	0.8	1.3	1.1	1.0	1.3	0.8	1.0
Bolivia	8.7	8.6	2.4	0.7	-2.5	2.5	2.8	3.1	2.4	3.1
Botswana	-1.2	12.0	9.5	7.4	4.8	6.7	5.2	6.6	2.2	3.6
Cape Verde	1.7	2.4	4.9	7.3	8.0	11.9	14.4	13.6	7.5	6.8
Chile	6.1	3.8	5.8	7.5	5.9	5.0	7.6	8.9	8.0	7.4
Costa Rica	2.8	3.9	3.3	4.3	4.3	6.5	7.2	7.0	4.6	4.1
Ecuador	*2.5*	*3.1*	*3.0*	*2.6*	*1.3*	*0.7*	*0.4*	*1.8*	*0.6*	*0.3*
El Salvador	*2.0*	*3.3*	*0.9*	*2.3*	*0.3*	*0.1*	*0.5*	*1.7*	*1.1*	*0.0*
Ghana	1.7	1.0	1.8	1.6	1.4	3.1	3.5	4.3	6.4	8.1
Indonesia	-1.9	0.1	-0.3	0.7	2.9	1.3	1.6	1.8	0.9	1.9
Kazakhstan	12.8	10.5	6.8	9.6	3.5	7.8	10.6	10.7	11.9	7.0
Kenya	0.0	0.2	0.5	0.3	0.1	0.2	2.7	0.3	0.5	0.4
Nigeria	2.5	3.2	3.0	2.1	4.4	3.3	3.6	4.0	5.1	3.1
Pakistan	0.5	1.1	0.6	1.1	2.0	3.4	3.9	3.3	1.4	1.2
Panama	*4.0*	*0.8*	*6.3*	*7.2*	*5.9*	*14.9*	*9.0*	*9.5*	*7.4*	*8.8*
Paraguay	1.3	0.2	0.5	0.5	0.7	1.9	1.7	1.7	1.4	2.3
Peru	2.1	3.8	2.2	2.3	3.2	3.8	5.1	5.5	4.4	4.8
Philippines	0.3	1.9	0.6	0.8	1.8	2.4	2.0	0.9	1.2	0.9
Rwanda	0.3	0.2	0.3	0.4	0.3	0.4	1.8	2.2	2.3	0.8
South Africa	6.1	1.3	0.5	0.3	2.6	-0.1	2.0	3.5	1.9	0.4
Sri Lanka	1.1	1.1	1.2	1.1	1.1	1.7	1.9	1.8	1.0	1.0
Tanzania	3.7	3.7	3.1	1.8	6.6	2.8	3.5	1.9	1.9	1.9
Uruguay	1.4	1.4	3.5	2.4	4.9	7.5	5.6	5.8	4.0	4.0
Vietnam	4.0	4.0	3.7	3.5	3.7	3.9	9.4	10.6	7.8	7.7

Source: WDI

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Annex 3. Table 10: Trade (% of GDP)
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Trade (% of GDP)										
Country Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	21.7	40.5	39.2	43.4	44.3	44.0	45.0	45.1	37.4	39.8
Bangladesh	36.9	33.3	34.2	36.3	39.6	44.2	46.5	49.1	46.0	43.5
Bolivia	45.2	49.4	52.0	57.5	67.6	74.5	76.1	82.9	68.6	62.4
Botswana	79.6	82.0	79.7	81.1	85.7	77.7	82.9	83.4	79.3	60.5
Cape Verde	94.0	99.5	98.0	68.6	67.2	77.0	80.8	83.2	86.9	
Chile	65.1	65.7	68.9	72.3	74.1	76.5	80.5	85.7	69.5	69.5
Costa Rica	86.0	90.0	95.2	95.7	102.5	104.4	102.4	101.4	85.4	85.5
Ecuador	*57.9*	*55.8*	*53.5*	*57.1*	*62.7*	*67.0*	*69.8*	*76.2*	*93.8*	*64.9*
El Salvador	*67.5*	*67.4*	*70.0*	*72.9*	*71.7*	*74.0*	*72.3*	*73.6*	*60.0*	*64.0*
Ghana	110.0	97.5	97.3	99.7	98.2	65.9	65.4	69.5	71.8	63.7
Indonesia	69.8	59.1	53.6	59.8	64.0	56.7	54.8	58.6	45.5	47.6
Kazakhstan	92.8	94.0	91.5	96.4	98.3	91.6	92.2	94.3	75.8	71.5
Kenya	55.9	55.2	54.1	59.5	64.5	62.7	63.0	69.4	63.5	64.9
Nigeria	75.3	64.4	83.1	75.0	77.6	70.6	67.0	71.2	64.7	66.0
Pakistan	30.4	30.5	32.8	30.3	35.3	38.5	35.5	36.7	33.2	31.9
Panama	*138.6*	*129.7*	*122.1*	*131.5*	*144.5*	*146.2*	*155.1*	*157.7*	*141.8*	*133.9*
Paraguay	79.2	92.6	98.8	96.0	106.8	111.9	104.8	105.9	98.1	114.6
Peru	33.5	33.4	35.5	39.3	44.3	48.4	51.3	54.5	44.4	44.6
Philippines	98.9	102.4	101.8	102.6	97.9	94.9	86.6	76.3	65.6	71.4
Puerto Rico	181.2									
Rwanda	34.9	34.3	32.7	35.9	36.6	36.3	36.5	44.6	40.6	
South Africa	56.2	62.0	53.4	53.1	55.2	62.5	65.5	74.2	55.7	52.7
Sri Lanka	80.9	76.3	75.3	79.5	73.6	71.3	68.6	63.4	49.1	45.4
Tanzania	38.3	37.4	41.4	45.7	50.6	58.3	61.5	61.7	58.4	61.7
Uruguay	36.3	40.0	51.8	61.5	58.9	61.0	58.1	62.7	52.3	50.2
Vietnam	111.5	118.8	126.9	139.0	142.9	151.8	169.6	171.1	147.0	153.3

Source: WDI

Annex 4. Table 11: Exports of Goods and Services
(%of GDP)

Country Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	11.5	27.7	25.0	25.3	25.1	24.8	24.6	24.5	21.4	22.3
Bangladesh	15.4	14.3	14.2	15.5	16.6	19.0	19.8	20.3	19.4	18.5
Bolivia	20.0	21.6	25.6	31.1	35.5	41.8	41.8	44.9	35.7	33.9
Botswana	44.3	46.6	45.4	44.2	51.2	47.0	47.5	41.6	34.1	28.6
Cape Verde	30.3	31.5	31.7	14.9	17.1	20.7	21.4	22.2	23.1	
Chile	33.3	34.0	36.5	40.8	41.3	45.8	47.2	44.8	38.7	34.6
Costa Rica	41.5	42.4	46.7	46.3	48.5	49.1	48.8	45.9	43.3	41.3
Ecuador	*26.7*	*24.7*	*25.6*	*27.5*	*30.9*	*34.1*	*35.4*	*38.1*	*40.9*	*31.2*
El Salvador	*25.8*	*26.4*	*27.1*	*27.8*	*26.5*	*27.2*	*25.4*	*25.6*	*22.3*	*22.6*
Ghana	45.2	42.6	40.7	39.3	36.4	25.2	24.5	25.0	30.5	25.3
Indonesia	39.0	32.7	30.5	32.2	34.1	31.0	29.4	29.8	24.2	24.6
Kazakhstan	45.9	47.0	48.4	52.5	53.5	51.2	49.4	57.2	42.0	44.9
Kenya	22.9	24.9	24.1	26.6	28.5	26.4	26.0	27.6	25.2	26.0
Nigeria	43.0	31.9	42.7	44.0	46.5	42.9	41.0	41.7	36.8	39.4
Pakistan	14.7	15.2	16.7	15.7	15.7	15.2	14.2	12.9	12.8	12.9
Panama	*72.7*	*67.5*	*63.6*	*67.6*	*75.5*	*76.7*	*81.2*	*81.8*	*79.1*	*65.0*
Paraguay	34.8	43.8	47.5	46.0	51.2	53.7	50.9	50.4	46.5	55.8
Peru	15.7	16.1	17.7	21.5	25.1	28.5	28.9	27.6	24.2	23.9
Philippines	46.0	46.7	47.2	48.6	46.1	46.6	43.3	36.9	32.2	34.8
Puerto Rico	80.8									
Rwanda	9.4	8.1	7.6	11.1	11.4	11.1	11.0	14.4	11.6	
South Africa	30.1	32.9	27.9	26.4	27.4	30.0	31.3	35.6	27.4	25.5
Sri Lanka	37.3	34.9	34.7	35.3	32.3	30.1	29.1	24.8	21.3	18.9
Tanzania	17.0	17.6	18.6	19.7	20.8	22.6	24.3	22.6	23.2	24.0
Uruguay	16.8	20.6	27.4	32.1	30.4	29.6	28.5	29.2	26.6	25.7
Vietnam	54.6	56.8	59.3	65.7	69.4	73.6	76.9	77.9	68.3	70.7

Source: WDI

Annex 5. Table 12: Imports of Goods and Services (% of GDP)

Country Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	10.2	12.8	14.2	18.2	19.2	19.2	20.3	20.7	16.0	17.6
Bangladesh	21.5	19.0	20.0	20.8	23.0	25.2	26.7	28.8	26.6	24.9
Bolivia	25.3	27.7	26.4	26.3	32.1	32.8	34.3	38.0	32.9	28.5
Botswana	35.4	35.4	34.4	36.9	34.5	30.7	35.4	41.8	45.2	31.9
Cape Verde	63.7	68.1	66.3	53.8	50.1	56.3	59.4	61.0	63.8	
Chile	31.8	31.6	32.4	31.6	32.8	30.7	33.2	40.9	30.8	34.9
Costa Rica	44.5	47.6	48.5	49.5	54.0	55.3	53.6	55.6	42.1	44.2
Ecuador	*31.1*	*31.2*	*27.9*	*29.6*	*31.8*	*33.0*	*34.4*	*38.1*	*52.9*	*33.8*
El Salvador	*41.6*	*41.1*	*43.0*	*45.1*	*45.2*	*46.9*	*46.9*	*48.1*	*37.8*	*41.4*
Ghana	64.8	54.9	56.6	60.4	61.7	40.7	40.8	44.5	41.3	38.4
Indonesia	30.8	26.4	23.1	27.5	29.9	25.6	25.4	28.8	21.4	23.0
Kazakhstan	47.0	47.0	43.0	43.9	44.7	40.5	42.8	37.1	33.8	26.6
Kenya	33.0	30.3	30.0	32.9	36.0	36.3	37.0	41.8	38.3	38.9
Nigeria	32.3	32.6	40.4	31.1	31.0	27.7	25.9	29.5	27.9	26.6
Pakistan	15.7	15.3	16.1	14.6	19.6	23.2	21.3	23.9	20.4	19.0
Panama	*65.9*	*62.3*	*58.5*	*63.9*	*69.1*	*69.5*	*73.9*	*75.9*	*62.7*	*68.9*
Paraguay	44.4	48.8	51.3	50.0	55.6	58.2	53.9	55.6	51.6	58.8
Peru	17.8	17.3	17.8	17.8	19.2	19.9	22.4	27.0	20.3	20.7
Philippines	52.9	55.7	54.7	54.1	51.7	48.4	43.4	39.4	33.4	36.6
Puerto Rico	100.4									
Rwanda	25.5	26.2	25.1	24.8	25.2	25.3	25.5	30.2	29.0	
South Africa	26.1	29.1	25.5	26.7	27.9	32.5	34.2	38.6	28.3	27.1
Sri Lanka	43.6	41.4	40.7	44.2	41.3	41.1	39.5	38.5	27.8	26.5
Tanzania	21.3	19.8	22.8	26.1	29.7	35.7	37.1	39.1	35.2	37.7
Uruguay	19.5	19.4	24.3	29.4	28.5	31.4	29.6	33.5	25.7	24.4
Vietnam	56.9	62.0	67.7	73.3	73.5	78.2	92.7	93.1	78.7	82.6

Source: WDI

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