New Investors in Developing Countries: Opportunities, Risks and Policy Responses, the Case of Hedge Funds

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1. Introduction

In the recent financial turmoil, hedge funds have played an important, though not central, role. For example, it was two hedge funds internal to Bear Stearns that precipitated both the crisis itself, in the summer of 2007, and the ultimate demise of the bank. This adds to previous very problematic experiences, of developing countries, e.g. the large role of hedge funds in attacking currencies in East Asia during the 1997/8 East Asian crisis.[2]

This paper will argue that there is a strong case to both regulate the activity of hedge funds in both developing and especially developed countries. That emerging markets have escaped a crisis at the time of writing by no means indicates that the risks have gone away. Indeed, the present increases in food prices, with the concomitant negative effects on malnutrition and food riots, indicates negative effects of speculators like hedge funds, especially when they are in search of quick gains to make up for recent losses.

How then are we to make democratically *accountable* the highly mobile activity of institutions like hedge funds? How can democratic control be exercised over actors only guided by the search for high profits, with no concern for their potentially very negative effects on the real economy and, above all, on people? We will argue that a very large step forward will be through improved transparency and indirect as well as direct regulation.

The answer provided here outlines two themes: *transparency and regulation*. It is now clear that the consequences of the virtually unbound activities of hedge funds far exceed the narrow confines of a contract between hedge funds and wealthy people. It is not simply that vast amounts of money are invested; it is that vast amounts are *borrowed*, usually from the formal banking system. This passes hedge fund risk on to the larger credit system, making their business everyone's business. And yet considering the risks, we have little meaningful information about the activity of hedge funds, information that would facilitate robust regulation. These funds must therefore be brought out of the shadows and made transparent, providing a basis for regulation to reduce their negative effects.

Further, if borrowing is a major source of risk, then we must regulate also at the source. Hedge funds and other highly-leveraged institutions (HLI)—"leverage" simply meaning borrowing that increases one's investment bet—can be indirectly regulated by discouraging or limiting the amount that they are permitted to borrow from other institutions, particularly banks. Tighter prudential norms for the total amount of leverage could be put in place. These norms could be augmented by appropriate "counter-cyclical" measures, i.e. regulation that becomes more stringent just as speculation begins to gets out of hand, and credit is booming.[3]

The recent turmoil categorically proves the need for more transparency and better regulation across the whole financial system. However, regulatory activity must act both as a check on potentially harmful speculation as well as an enabler for efficient investment, when they can do so. After all, pension funds increasingly invest in hedge funds, hoping they may have an above-

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[2] See Goodhart and Dai (2003), and longer version of this paper.

[3] See Charles Goodhart and Avinash Persaud, "How to Avoid the Next Crash," *Financial Times*, January 30th, 2008.

normal chance at generating the above-normal returns that are sorely needed to support societal commitments to social security, (whether these commitments are provided privately or publicly).[4] In playing this role, while exposing the public to risk, hedge funds are as susceptible to regulation as other financial entities.

Emerging Market Vulnerabilities and Hedge Funds

Developing countries seem less vulnerable to the crises they had experienced in the last two and a half decades. This is because many of them have large current account surpluses and strong foreign exchange reserves; furthermore, their level of external debt tends to be lower, in proportion to exports, than in the past and the average maturity of this debt is longer.

However, in spite of these efforts, developing countries face new sources of financial vulnerability.

1) A first new source of financial vulnerability for developing countries lies in the existence, and rapid growth, of new actors—such as hedge funds (HFs)—as well as new instruments, such as derivatives. HF are opaque, highly leveraged, and practically unregulated. They are also increasingly important actors in developing countries, accounting for 45% of trading in emerging markets bonds.
2) A second source arises from the risks of a serious slow down of the developed economies' growth, resulting from recent financial turbulence and/or adjustment of global imbalances. This could have large negative effects, via the trade channel or financial contagion through HFs and derivatives, as previous crises have shown. Though at the time of writing, fortunately this contagion was limited, the risk of it occurring is non-negligible and the impact could be large on growth, investment and poverty reduction.

Financial crises are complex and have many causes. Bad country fundamentals can cause or accentuate crises. However, the inherent instability in the functioning of financial markets—due to prevalent market imperfections—is often a main or major cause of crises (Keynes 1936: Kindleberger 1978; Stiglitz 2001). Within financial actors, hedge funds clearly played important roles in triggering or deepening crises like that of the ERM, those in Mexico, East Asia, Russia, LTCM and Brazil. As pointed out above, they also played an important—though not central—part in the current financial turbulence.

The critique is however broader. Market failures and imperfections prevalent in poorly or insufficiently regulated financial markets which have grown explosively and become increasingly globalised have meant that in the last two decades financial crises have become both very frequent and very costly. <u>There is therefore a need, across the board, for more effective and more comprehensive transparency and regulation, both by countries and globally, to help achieve better outcomes for the real economy and the financial sector itself.</u> Effective transparency and regulation implies measures that both encourage financial development and innovation, which will support economic growth, while preventing excessive risk-taking.

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[4] This intimate connection of hedge funds to the pensions of the developed world stems from the "collapse of public social security systems," as Aldo Caliari has recently outlined (2007). The point is echoed by *The Economist's* latest Special Report on Asset Management, (March 1st, 2008).

The following is organized as follows. Section 2 analyses the theoretical and empirical case for regulating hedge funds. Section 3 briefly looks at the subprime crisis and its links to hedge fund activity in emerging markets. Section 4 outlines the development of this activity. Section 5 concludes with some detailed proposals for directions that regulation might take.

2. The Case for Policy Action

There is wide recognition that there are at least three grounds for improving transparency and regulation of financial institutions: systemic risk, market dynamics and investor protection.

The first reason is to limit systemic risks and so ensure the safety of the financial system as a whole. HFs create systemic risks to the extent that they can disrupt the ability of financial intermediaries or financial markets to provide credit. This can happen through the liquidation of a HF leading to sharp declines of asset prices, creating uncertainty about credit risk and disrupting credit creation in broader financial markets; this can happen also through banks e.g. via them reducing their direct exposures through their lending to HFs, or indirectly through reduced liquidity to other banks or HFs, (see for example, U.S. President Working Group on Financial Markets 1999, FSF 2007).

It is important to stress that there is wide recognition that it is precisely the defining characteristics of HFs that create the potential for them causing or accentuating large financial market disruptions (Kambhu et al. op.cit, Chan et al. 2006, De Brouwer 2000 and others). These key characteristics of HFs are:

a) they are not restricted by the type of trading, strategies and financial instruments they can use;
b) there tends to be no regulatory limit on the amount of leverage hedge funds can use; many authorities and experts have emphasised this as a key concern for systemic risks linked to HFs;
c) opacity to outsiders, also linked to lack of regulation. This opacity and lack of regulation means that not only regulators, but also other market actors (including banks lending to them, called prime brokers) have little knowledge about hedge funds and their risks;
d) hedge funds have specific and different compensation structures from other institutional investors. Hedge funds' fees increase sharply if profits are very high, but fall only mildly with poor performance (Rajan 2005); this provides strong incentives for hedge fund managers to take on more risk and leverage than other institutions.

Indeed, hedge funds' opacity and incentive structure increase the risks that they disrupt broad financial market activity as managers turn to high-risk strategies. Leverage, in turn, can amplify the impact of a given shock and result in wider and larger losses, as occurred in the 1998 LTCM crisis.

As discussed below, the first line of defence against hedge funds causing systemic risk is counterparty risk management exercised by banks and security firms. However, specific market failures, which are particularly acute in hedge funds, limit the effectiveness of such market based controls.

There are for example agency problems; this arises from participants' different incentives; in a context of imperfect information, this implies that the principal, the counter-party, cannot control the agent, in this case the hedge funds. Hedge fund opacity and their fee structure imply this market failure will lead to excessive risk-taking by hedge funds. Externalities and lack of provision of public goods are also an important market failure relevant in this case. Whilst every bank should monitor its exposure and limit excess risk-taking by hedge funds, there are incentives to "free-ride" on efforts of other banks; the underprovision of monitoring by private actors provides a rationale for official sector intervention (Kambhu et al. op.cit). Finally, competition for hedge fund business can erode counter-party risk management, and lead to low spreads, too low initial margin levels and lax collateralisation practices. This is a concern which emerged already in the wake of the Asian and LTCM crisis (U.S. President Working Group on Financial Markets 1999), and is reflected in more recent discussions by key actors (Bernanke 2006; Weber 2007 and FSF 2007). It also arose, in interviews carried out by the main author of this paper in Brazil, where some banks not only highlighted the erosion of counterparty risk management (e.g. not requiring any margin on certain products) by them due to strong competitive pressures but actually suggested that the Central Bank should design regulation to prevent them taking such excessive risk. It could be said the banks, that were acting as prime brokers, were asking regulators to protect them against themselves, as reflected in their own and their counter-parties', e.g. hedge funds, excessive risk taking.

Besides concerns of systemic stability, the literature tends to focus on two issues that would justify improved transparency and regulation of hedge funds; these are market dynamics and investor protection (see, for example, Crockett 2007). The former concern may be also especially important from a developing country perspective, given the risk that hedge funds and other HLIs exacerbate pro-cyclical trends in crucial macro-economic variables, such as exchange rates, contributing to overshooting both in the face of devaluation and appreciation pressures. This may have severe negative macro-economic effects (see, for example, Dodd and Griffiths-Jones 2006) for an analysis of Brazil and Chile; the FSF (FSF 2000) emphasizes how large players such as hedge funds had a disproportionate effect on market prices during the East Asian crisis.

As regards investor protection, a traditional argument against regulating hedge funds has been that their investor pool relates to wealthy and supposedly sophisticated investors, who have the understanding and wealth to protect their own investors. However, as hedge fund investing has spread to retail investors and---to an important extent---to funds managing pension funds, calls for regulation of hedge fund for investor protection reasons have increased and may have some important justification.

More generally, the concern with market dynamics relates to fears that hedge fund activity can drive prices away from equilibrium values and create instability. This could happen as a result of market abuse (collusion by market actors, here powerful actors can profit by moving the system from a "good" to a "bad" equilibrium) or through "herding" as individual actors respond similarly. This "herding" can accentuate the procyclical trend in market prices. Hedge funds also use momentum trading (that is buy assets if their price has risen a great deal and sell when prices are falling), which ignores fair value or equilibrium values, by definition leading to overshooting of prices, which is harmful for both financial and macro-economic stability, as well as growth.[5]

[5] I thank Paul Woolley for this valuable point

There are therefore a number of theoretical and empirical reasons for improving transparency and considering the best form of increased regulation of hedge funds, and there seems to be here a common interest between developed and developing countries for internationally coordinated measures. The recent crisis provides a good opportunity to put this coordination in place.

3. The Subprime Crisis and Emerging Markets

i. The subprime crisis

Among the swathe of new financial instruments have been instruments that securitize debt into assets. Many of these debts were high-risk loans made to home buyers with poor credit or little income--the so-called subprime borrowers. Such loans do not conform to the criteria for “prime” mortgages, and so have a lower expected probability of full repayment.

Securitized mortgages were then taken off the originator's balance sheet and assembled into Special Purpose Vehicles that issued so-called Collateralized Debt Obligations, CDOs. These asset-backed papers were then split into tranches and subject to various kinds of credit-enhancements that made them eligible, in the "senior" most cases, for AAA ratings. These CDOs were now bonds, ready to be used to collateralized a broad range of leveraged activity.

Many of the subprime loans had introductory teaser rates that reset after two or three years. With the US economy slowing, interest rates rising and house prices falling, subprime mortgage defaults climbed. As this market was hit hard, those securities were repriced downward. This, in turn, infected the CDOs because following the losses on the underlying subprime mortgages nobody any longer trusted either the models or the ratings. (See EIU,2007)

After some investment managers realized losses in the subprime mortgage markets, investment banks asked hedge funds to reduce their leverage. In order to obtain the necessary cash, hedge funds had to sell assets, but since mortgage-linked CDOs are not liquid, they decided to sell liquid high-quality equities. As the prices of quality liquid assets started falling other Quants funds - which in a crunch scenario were programmed to go long on this type of assets and short on illiquid high beta stocks - started making losses as market prices were not confirming their assumptions. Hence the margin calls and the need to sell high quality assets forced the market to do exactly the opposite of what models predicted. Losses were amplified by their initial leverage and by the fact that most Quants worked with similar models.[6]

Two of the main hedge funds to suffer were run by the investment bank Bear Stearns. One of these funds invested in cash and derivative instruments tied to CDOs backed by subprime residential mortgages. As this market was hit hard those securities were repriced downward. In addition other hedge funds faced margin calls from lenders forcing them to sell good assets to raise cash. Sometimes certain funds had to implement other measures. BNP for example froze withdrawals by investors in three of its hedge funds.

All of this was occurring parallel to corporate borrowing costs soaring, mergers and acquisitions drying up, and stock prices falling. Most seriously, the biggest institutions became reluctant to

[6] Note by the UNCTAD secretariat on Recent Development on Global Financial Markets. Gillian Tett and Anuj Gangahar (2007). Limitations of Computer Models, *Financial Times*, August 14th, 2007.

lend to each other in the interbank market since it was difficult for lenders to assess other financial institutions' exposure to subprime losses. As a consequence, the supply of funds in money markets was squeezed restricting the supply of short-term financing for financial institutions and threatening a systemic liquidity crisis. Massive, unprecedented central bank intervention has now calmed the situation, and the question of institutional reform can now come to the fore.

ii. The effects in emerging markets

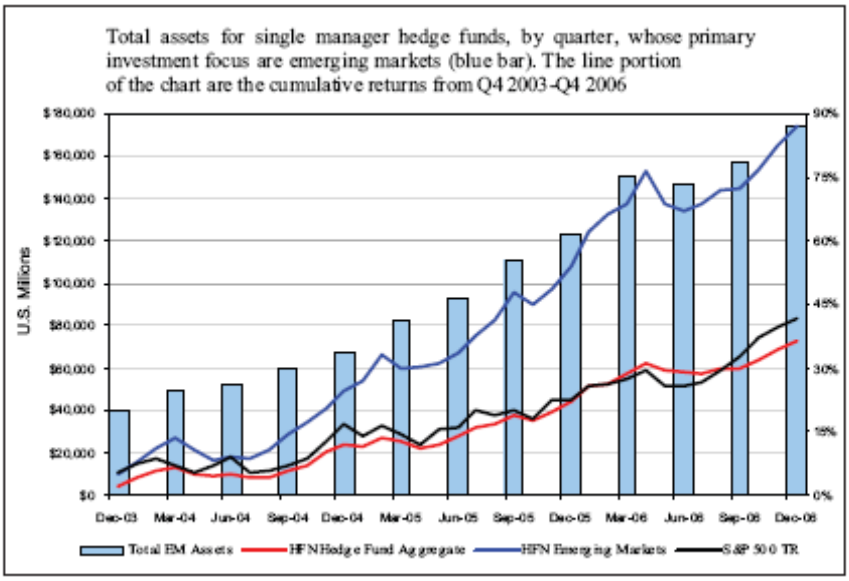
The same drive for returns that push pension funds to "alternative investments" like hedge funds push fiduciaries to emerging markets. Often hedge funds are themselves the conduits for such exposure. Asset bubbles in mature markets and volatility in emerging markets can therefore emerge from the same source, and the present crisis has had negative effects in the South, for example via increases in food prices. How have these flows to emerging markets increased, and how can they be channeled productively?

There are several vulnerable points where EMs can be affected by additional volatility in mature markets. These weaknesses are related to the growing market of privately placed syndicated loans in emerging markets that share similar evidence of credit indiscipline as in the leveraged loan segment; emerging market banks in some regions are relying increasingly on international borrowing to finance rapid domestic credit growth; emerging market corporates appear increasingly engaged in the carry trade; and some emerging market financial institutions in several countries are increasingly using structured and synthetic instruments to increase returns, potentially exposing them to losses as volatility rises.

4. Hedge Funds in Emerging Markets

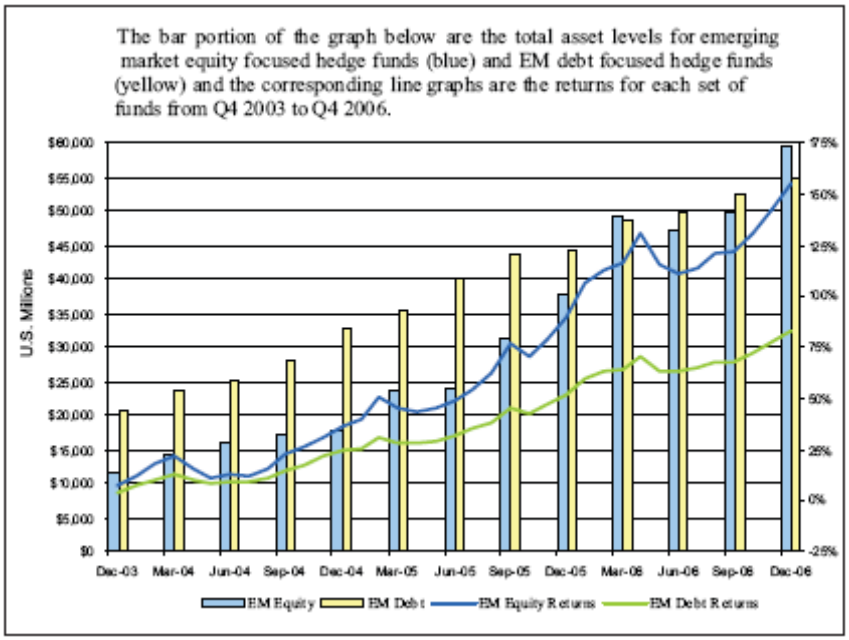
Hedge funds' (HF) assets under management (AUM) have grown dramatically in the last few years, increasing five-fold since 1999 to an estimated $1.6 trillion at the end of 2006. The number of funds has reached approximately 9,000 (FSF, 2007). The growth of the HF industry globally has been accompanied by a rapid increase in capital allocation into emerging markets. Between 2004 and 2006, HF's AUM in emerging economies increased more than four times to an estimated $175 billion (Laurelli, 2007). These trends reflect the unrestrained search for yield by investors worldwide within an environment characterized by ample liquidity. They also reflect improved macroeconomic fundamentals and external positions in many emerging economies.

Figure 1: Total AUM assets in Emerging markets and cumulative returns



Furthermore,, in recent years emerging markets equity-focused funds have surpassed fixed-income-specific funds in terms of AUM, also thanks to their superior performance (Laurelli, 2007).

Figure 2: Emerging Markets HF Asset Focus



Source: Laurelli (2007)

In addition, according to the IMF some hedge funds are also seeking what seems to be seemingly uncorrelated risk by moving into illiquid products, such as investment in so called more exotic equity markets (e.g., Vietnam, Sri Lanka) and real assets (e.g., private equity, real estate). Sub-Saharan Africa is the "new frontier",[7] while there has been significant growth in the private placement loan market in many emerging economies.

7 The hedge funds and institutional investors trading volume survey by the Emerging Market Traders Association (EMTA) shows that sub-Saharan debt trading volume reached $12.7 billion in 2006, nearly double the volume in 2005. IMF, Financial Stability Report, April 2007.

Growth in Asia-focused hedge funds has outpaced the rapid expansion of the global hedge fund industry in recent years. Assets under management (AUM) of Asian hedge funds - broadly defined as hedge funds with a predominant investment mandate in Asia and/or managers located in Asia - have increased almost sevenfold, from $22 billion in 2001 to $146 billion at the end of the first quarter of 2007, compared with a sixfold increase of the global industry to about $1.5 trillion (IMF, 2007). Within Asia, the main impetus for growth has come from emerging markets. With AUM of some $100 billion at end-2006, emerging Asia hedge funds accounted for nearly 60 percent of emerging market funds worldwide.

5. Global Transparency and Regulation of Hedge Funds: Modest Proposals

Introduction

The growth of HF assets and the "search for yield" that has characterised financial markets in recent years has been accompanied by a "retailization" of HF investment and their spread to emerging markets. Through funds of HFs, an increasing number of individuals and institutional investors such as pension funds, insurance companies, charities, universities and foundations have showed interest in HFs (see Caliari, op. cit). Finally, in parallel with the increased concentration of the HF industry, there has been an augmented concentration in prime brokerage and counterparty relationships: three investment banks account for about 60% of HF assets (The Economist, 2007).

In an integrated world economy, financial stability can be considered a global public good (Griffith-Jones and Ocampo, 2007). It can be achieved in many different ways; yet it requires an internationally coordinated response. Insofar as HF activity is concerned, a key policy challenge is to ensure a fair trade-off between the potentially positive contribution of HFs to financial market efficiency and the possible negative implications for systemic stability. Systemic instability may arise indirectly from the impact that the failure of a large HF or a group of HFs may have on banks and brokers. It may also arise directly from HF market activity if this results in spreading or magnifying a shock occurred elsewhere (IMF, 2007).

It is possible to identify two main channels through which HF activity might disrupt the financial system. First, they could impact directly regulated financial institutions that provide them prime brokerage and counterparty services. HFs usually leverage their positions through derivatives and other arrangements, which are subject to margin requirements, or through repos and securities lending. Credit lines for liquidity purposes are also frequently used. If a HF or a group of HFs fails, this can put at risk prime brokers' safety and soundness. Second, in times of stress HFs might be forced to liquidate their positions to meet margin calls and refinance short-term debt. This can led to sell off in a number of markets, with disruptive effects for asset prices across a wide range of investment categories. This latter scenario might have substantive effects especially on emerging markets.

Our Modest Proposals

1) Improved information

There is increasing consensus (including by the HF industry itself) that improved information on HFs would be valuable to investors, to counterparties (and thus strengthen counterparty management) as well as to regulators. The fact that HFs are practically unregulated at present implies that they are not obliged to disclose information that would be very valuable. Furthermore, as Ryback, (2007) stresses, the fact that HFs often operate through over-the-counter derivatives markets, where participants are not required to report their open positions as well as operating in the structured debt markets, makes their positions even more opaque.

Transparency about the risk exposure, leverage and market positions of HLIs would firstly provide very important information to the authorities. This would facilitate any measures they could take that would help prevent building up of HF or HLI positions which could undermine otherwise sustainable policies; it could also lead to policy changes, in the case of economic inappropriate policies, to be made earlier rather than later. Furthermore, the current system implies an unsustainable information asymmetry (De Brouwer 2001; Griffith-Jones and Ocampo 2003); currently, much information is provided by the public sector (especially of developing countries) to the private sector; however certain parts of the private sector, like HLIs and HFs in particular, provide practically no information, on their activities. This limits the public sector's ability to respond.

Secondly, greater transparency about HLIs could improve decision-making by market participants in ways that would enhance financial stability. For example, if there is knowledge that certain excessively large positions are being held, market actors may not wish to maintain or increase them; indeed, other market participants may be willing to take contrarian positions. This could be especially the case in currency markets, where both developing and developed countries have suffered from speculative attacks by HLIs. Of course this is not a necessary outcome as other players could think large hedge fund positions suggest a trend and could then mimic their positions. However, this is less likely with monthly data; on the other hand, real time information could encourage such herding.

Furthermore, the public release of data on aggregate positions would remove the current powerful and asymmetric advantage that HFs have, and would limit the effectiveness of building gradually positions, as HFs did in Hong Kong, to later try to shift prices in a major way. Furthermore, counter-party risk management by banks and others could be significantly improved if sufficient, appropriate and timely information were revealed, as at present they do not know the total exposure of their HF clients.

The key issues are what is to be disclosed, with what periodicity and to whom; additional important questions are whether this information should be voluntary or obligatory and whether it should be provided by all HFs or only those systematically important.

A minimum requirement would be to have aggregate positions by HLIs in different markets and countries reported. To be effective, and meaningful, this would require reporting <u>total</u> aggregate positions worldwide, implying that HLIs in all jurisdictions (or at least in all the main ones) would have to report. In this aspect our proposals build on the Deutsche Bundesbank proposal of creating an <u>international</u> credit register, as well as on the ECB's, op.cit emphasis on the need for international measures. More recently, the German Federal Government advocates improving transparency of HFs and stresses that "the only possible way is through a concerted international approach."

There may be a need for other data to be disclosed. Here a balance has to be struck between the real needs of regulatory authorities and other market participants and the aim not to increase the cost of information excessively. On balance, however, it seems socially desirable, to reduce asymmetries of information, in ways that increase financial stability.

Building on the "Fisher II" working group (2001) recommendations it may be appropriate that institutions like hedge funds periodically report market risk, liquidity risk, and credit risk. To the extent that HFs did not disclose this information on a voluntary basis, the Fisher II working group recommended that relevant authorities require this disclosure. Other variables that may be helpful both to the authorities and to other market actors are the level of long and short positions, the level of leverage and others, such as the level of trading.

As regards periodicity of reporting, positions can be reported in real time or with a lag. Though real time reporting would be particularly useful it could be possibly costly, through much of this information must be already privately available. The alternative - possibly initially more realistic - would be to require data at the end of the month, possibly with a one month lag (De Brouwer 2001). The problem of fixed point in time disclosure is the risk of window dressing for the particular moments. The solution may be to require also maximum and minimum positions during this period, to avoid such window dressing[i].

It would seem best if information would be made publicly available, e.g. on the internet. It may be sufficient if positions are reported in aggregate by class of institution, e.g. bank, securities firms, hedge funds, other HLIs, etc. The aggregate reporting would avoid revealing individual positions; the latter could reduce trading by HLIs and adversely affect liquidity in financial markets, which would be broadly undesirable, (see also De Brouwer, op.cit, for a more detailed discussion).

It seems important to find an institution that would be efficient at collecting and processing speedily such data, without compromising confidentiality. The institution with the best experience in similar data gathering would be the Bank for International Settlements (BIS), which already collects detailed information on banks and other financial institutions. The reputation of the BIS would also ensure confidentiality of individual positions.

2) Indirect and direct regulation

Indirect regulation of Hedge Funds and other HLIs can be done through banks and securities firms that provide credit to these institutions. Therefore, it is the preferred route, by countries such as the U.S. and the U.K, as it implies merely extending existing regulation, rather than creating a new system of regulations. Indirect means could also be used, even without direct regulation, to provide a market incentive for HLIs to report their aggregate positions to a central authority, say the BIS. Banks could be required to impose a substantial penalty margins on swap, forward and repo facilities provided to HLIs that do not report; implying that both offshore and onshore HLIs would have an incentive to report.

For the reasons outlined in section 2 (e.g. competition eroding banks' counter-party control of HLIs), it seems crucial also to directly regulate HLIs. More direct regulation of HLIs - to be most effective - would be international. However, developing countries could also - though less

effectively - impose regulations or ad hoc limits either in periods of excessive inflows or outflows by HLIs.

A simple, but potentially powerful, proposal would be to require minimum amounts of capital (called margin requirements). This would limit the scale of HF positions. It would be somewhat more complex, but possibly desirable, to increase margin (capital) requirements when HLI positions become very large in a particular market, or grow very quickly. This would imply introducing a counter-cyclical element into regulation.

3) Developing country potential actions

Concerns in the debate on hedge funds registered in developing financial markets are still marginalised (Cornford, 2007). Threats to the integrity of financial markets posed by hedge funds began to be taken seriously by countries exerting the main influence on the international regime for regulation and control only when the threats involved their own markets (rather than the developing ones). This marginalisation may unfortunately remain true in the formulation of any new international initiatives regarding hedge funds. This trend is reinforced by the fact that developing countries are practically not represented in the international decision fora where those decisions are taken (e.g. FSF). As stated in interviews with senior Latin American policy-makers, and as reflected in the writings of several senior East Asian policy-makers, they strongly feel that developing countries' concerns tend to be largely ignored even when they are invited to meetings. The fact that IOSCO (the International Securities Regulator) has developing countries' representation implies it should be given a greater role in the discussions; this is appropriate anyway, given IOSCO's remit. Membership in the FSF and Basle Bank Regulatory committee should also be broadened to include developing countries. These governance changes are not only important for greater legitimacy and democracy, but also for greater efficiency of regulation. It is crucial that civil society, academics and developing country governments exercise pressure for such governance changes in regulation.

Countries with emerging financial markets may have to continue to rely on national policy solutions, even though these are clearly second-best to internationally coordinated solutions.

Some of the measures available to deal with problems posed by HLIs may involve on occasions some form of capital controls, especially those that distinguish between long-term and short-term investments. For example, the shorting of a country's currency by a non-resident entity such as a hedge fund to benefit from devaluation is frequently undertaken through borrowing followed by repayment in devalued currency. Such transactions can be countered by limiting HLIs access to swap facilities. This was done by most countries affected by the East Asian crises as well as by Singapore and Taiwan.

The strategy of limiting swap access to non-residents needs to be strictly enforced by banks if it is to work. De Brouwer, op.cit reports that for example in South Africa in 1998, swap limits were placed on non-residents, but local banks ignored the regulations, and were not obliged to do so by the authorities, making them ineffective. On the other hand, Malaysia and Singapore banks - at the same time - enforced such limits, partly due to fear of penalties.

While such drastic measures may be justified in extreme circumstances, and are likely to be adopted in developing countries if the international community does not address issues of

destabilising speculation, for example by HLIs such as hedge funds, they have also long term disadvantages. Even when such measures are effective for long periods of time, as they have been in Singapore, they have the problem that they limit the ability of banks and non-financial companies to shift foreign exchange exposure to players offshore; such hedging may be very useful for example for companies with large external debt but producing for the local markets. It is also very valuable for avoiding banks having large net foreign exchange exposure, that can become destabilising, when there are large fluctuations in the exchange rate (see Dodd and Griffith-Jones 2007).

Destabilising movements in local financial (stock and money) markets can also be made more difficult by the imposition of disclosure requirements on local financial institutions which enable the identification of positions, as Cornford, op.cit suggests. Again, this would be second-best to internationally coordinated measures for transparency (see above) should those ever be adopted.

Furthermore, developing countries could attempt to limit such positions, especially if these have grown rapidly and/or imply threats to financial or macro-economic stability. Similarly, developing countries' regulatory authorities could attempt to impose minimum margin (capital) on HLIs on their transactions in their countries. Again, such measures would be far more effective if they were internationally coordinated.

Far more research is needed on what disclosure and regulatory measures would be most effective in developing countries, in different circumstances, to help protect financial stability and market integrity. Such research should be interactive with policy makers in both developed and, especially developing, countries, so that political and technical feasibility can be at the centre of the comparative evaluation, and so their experience can be built on.

It is important to involve civil society and parliaments in the discussion of regulatory matters, so that they ensure accountability and democratic governance of financial markets. Furthermore, this is a crucial moment, as the major financial turmoil has opened up much space for a discussion of comprehensive transparency and regulation of financial markets, including hedge funds. Coordinated action between academics, civil society, politicians and regulators is particularly crucial.

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