I. Local Bond Markets During the Global Financial Crisis

II. Abstract (117 words)

It has been suggested in the literature that a shortage of sound and liquid financial instruments in emerging economies has steered global saving toward industrial countries, in particular the US, and generated the much discussed global financial imbalances. In the proposed research project we will focus on local currency bond markets as a subset of emerging market financial development that has the potential to mitigate the global asset shortage. After reviewing the recent surge in local bond market development, we will investigate cross-border holdings of local currency bonds. Recently released data will reveal how US investors reacted to the global financial crisis and will allow an assessment of the potential stabilizing properties of these newly developed markets.

III. Project Description (word count = 1481)

1. Objective of Proposed Work

The process of financial globalization has been quite a roller coaster ride – especially in emerging markets. After a boom in the 1990s the global system was rocked by the Asian Financial Crisis which was particularly damaging to emerging economies that had borrowed in foreign currency (a currency mismatch). Many emerging markets have since learned the lessons of the Asian crisis and reacted by developing local currency bond markets and by accumulating foreign exchange reserves.

In previous research with co-authors we have compiled evidence of significant success in the development of local currency bond markets in emerging markets and also documented some movement by US investors into these markets during the 2002-06 period. Although this evidence suggests the potential for emerging economies to borrow from abroad in their own currency (and thus avoid the fragility associated with a currency mismatch), the data is taken from a remarkably tranquil period in global financial markets.

The objective of this study is to follow up with more recently released data which will allow us to evaluate the impact of the recent global financial crisis on these bond markets. The US Treasury's most recent survey of US holdings gives us data as of Dec. 31, 2008 – in the heart of the global crisis. This holdings data will allow us to examine how investors reacted during a time of stress – relative to the prior survey conducted during a tranquil period.

Questions of interest include:

- To what extent did US investors reduce their holdings of emerging market bonds during the recent crisis?
- Did US investors discriminate among emerging markets in their portfolio adjustments during the crisis or did they treat all emerging markets as equally risky?
- What changes occurred in the currency denomination of US investor's cross-border bond holdings? After increasing exposure to local currency bonds during the 2002-06 period was there a reversion to US dollar denominated assets during the crisis?

2. Significance of Proposed Work

Global investors initially reacted to the Asian Financial Crisis (late 1990s) by paring down their exposure to emerging markets and channeling funds to the most developed markets, in particular the US. In time, emerging economies recovered and many, including China, Brazil, and India, experienced rapid *economic* growth but their financial market development continued to lag behind. The result was a disproportionate fraction of growing global wealth flowing to US and other developed financial centers. These flows generated the much discussed "global imbalances" where some nations are borrowing from abroad on a massive scale. These imbalances have attracted significant attention by policymakers and academics with many suggesting that this pattern set the stage for the most recent global financial crisis. Bernanke (2005) attributes the imbalances to a "global savings glut." Cabellero, Farhi, and Gourinchas (2008a,b) suggest that the root cause of these imbalances is a shortage of sound and liquid financial instruments to act as a store of value for growing global wealth.

One potential path toward restoring global financial balance would involve improved financial development in emerging markets that might attract cross-border investors from the developed and developing world alike. With improved prospects at home, emerging market wealth might be less likely to flow to developed markets. By examining the data on US holdings as of end-2008 we will be able to evaluate the extent to which these newly developed local currency bond markets remained attractive to cross-border investors during the global financial crisis.

The importance of the proposed research project became clear to me when my co-authors and I were invited to participate in a G8 sponsored conference hosted by the German Bundesbank in January 2008. The G8 representatives were particularly interested in determining whether the growing local currency bond markets in emerging economies would have a stabilizing or destabilizing impact on the global financial system.

In their 2007 *Financial Stability Review*, the Bundesbank focused attention on investor behavior in emerging bond markets. The following passage from the Bundesbank report highlights the need for studies such as the one proposed here (EME = Emerging Market Economy):

> The extent to which distortions in one country may spread to financial market developments in the other EMEs will depend to a great degree also on whether international investors look at the EMEs as a homogeneous asset class or whether they take an increasingly differentiated view in their evaluations of individual EMEs and their respective progress towards achieving macroeconomic stability. The varying reactions of bond markets in some EMEs following a rise in volatility over the last two years indicate that international investors are beginning to make a greater distinction between those countries' bond markets depending on how the fundamentals are assessed; yet it remains to be seen whether, and to what extent, this development is a lasting one.

It is interesting to note that this discussion by the G8, and the Bundesbank more specifically, was taking place before the recent global crisis erupted. The subprime financial crisis in the US had begun but the international implications were unclear at the time. We all wondered how investors in these emerging bond markets would react during times of stress. Now we have the ability to find out.

The proposed research therefore offers a contribution to ongoing discussion between academics and policy makers about global financial stability. It has the potential to garner international attention for Loyola University. And finally this research will support my teaching of global macroeconomic issues in the undergraduate and MBA programs.

3. Plan to Accomplish Propose Work.

I have been reviewing the literature in this area and plan to continue that effort. The next step will be to gather the necessary data and organize it in a fashion that allows econometric (regression) analysis. Data on US investor's cross-border bond holdings are readily available from the US Treasury, as mentioned above. We will also need contextual data on the size of bond markets to be studied which is primarily available from the Bank of International Settlements (BIS). Bond market data can be a challenge to gather, but my co-authors and I have established significant experience in the area (and some contacts at the BIS) so I am confident we can gather the necessary data.

After gathering the relevant bond market data we will analyze US cross-border bond holdings as they vary across countries and also as they have changed relative to the pre-crisis survey of 2006. We will use ordinary least squares regression and explanatory variables gathered for each country including:

- Institutional factors – creditor or property rights
- Macroeconomic factors – inflation and exchange rate volatility
- Returns – historical data on the mean and variance of bond returns
- Proxies for currency mismatch

The regression analysis will allow us to determine the extent to which cross-border bond investors differentiate their holdings based on the country specific factors listed above.

Approximate Timeline

Spring 2010	Continue literature review, begin gathering data
Sum 2010	Complete data gathering process early in summer and turn to regression analysis. Initial draft composed in late summer.
Fall 2011	Present findings at a regional or national conference.
Jan 2012	Submit to an academic journal, such as the *Journal of International Money and Finance.*

4. Broader Context of the Proposed Work

This proposal is part of an ongoing research agenda that I have been conducting with my co-authors for several years. Our initial breakthrough was an investigation of the factors that determine the *development* of local currency bond markets. In our first paper we demonstrated that creditor-friendly policies and institutions were important determinants of a country's ability to borrow in local currency. This result was in stark contrast to the "Original Sin" hypothesis that suggested emerging markets were predestined to rely on foreign currency borrowing. Additional studies have supported our results, and more importantly events in the world have proven the point – many emerging economies have implemented the necessary policies and greatly reduced their reliance on foreign currency borrowing.

After establishing that the development of local currency bond markets was possible, the next stage of our agenda was to examine the extent to which cross-border investors would hold these bonds. We have done two prior examinations along these lines, the initial study found extremely low holdings by US investors as of end-2001. Our more recent work, referenced above, finds increased holdings over the tranquil

2002-06 period. Now it is important to revisit this issue with end-2008 data in the midst of the global financial crisis.

I have not received any Loyola summer grants in the past five years, but I was awarded a sabbatical during spring 2007. Sabbatical outputs include:

- "The development of corporate bond markets in emerging Asia" presented at the Banking Association of Colombia, Medellin, Colombia, May 2007.
- "Ingredients for a Well-functioning Capital Market," *Korea's Economy 2008*, 24:31-38.
- Early stages of current working paper, "Investing in Local Currency Bond Markets," soon to be submitted to *Financial Analyst Journal*.

IV. Cited References

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