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The effects of global excess liquidity on emerging stock market returns: Evidence from a panel threshold model[☆]

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ABSTRACT

The expansion of global liquidity, exacerbated by the unconventional monetary policies implemented by the major central banks over the past several years, has contributed to the debate on the cross-border impact of those measures. This paper examines the impact of global excess liquidity on asset prices for a set of seventeen emerging market countries taking into account nonlinearity by using a panel threshold model. We find that in a period of global investors' high risk appetites, global excess liquidity is a positive determinant of asset prices in emerging market countries. However, the link between the two variables changes when global risk aversion strengthens.

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1. Introduction

The 2007–2009 global financial crisis sparked a renewed interest in the topic of global liquidity by those involved in the policy debate. In the context of severe financial market disruptions and impaired financial intermediation following the Lehman Brothers collapse, central banks aggressively lowered their rates to near zero and ultimately used unconventional measures to address issues related to shortages in many financial market segments. These non-standard monetary policy measures, which ranged from forward guidance to credit and quantitative easing, have contributed to the boom in global liquidity. In particular, quantitative easing measures have consisted of a massive expansion of central bank balance sheets via several asset purchase programs.

Monetary base growth has indeed exploded in most advanced economies. The monetary base created by the Bank of England tripled between mid-2007 and mid-2010 to reach U.K. £336 billion by the end of 2012 (from £64 billion in mid-2007),¹ whereas in the Euro

zone, the monetary base surged by almost €2900 billion between mid-2007 and the end of 2012.² During the same period, the monetary base of the U.S. Federal Reserve Bank more than tripled;³ in Japan, it increased by two-thirds.⁴ However, not only advanced economies but also emerging markets participated in the global monetary expansion. Central banks in many emerging countries intervened in foreign exchange markets to prevent their currencies from excessive appreciation and to prevent a deterioration in competitiveness resulting from strong capital inflows from international investors searching for higher yields (Brana et al., 2012). Foreign exchange reserves have thus risen strongly, particularly in Asian countries, oil exporting countries and Brazil. The partial sterilization of reserve inflows contributed to the expansion of domestic monetary bases and ultimately, to the global monetary expansion (Filardo and Yetman, 2012). According to Borio (2013), the buildup of foreign currency reserves is not precautionary but instead is a by-product of zero lower bound and unconventional monetary policies in advanced economies.

Global excess liquidity provides international investors with relatively cheap liquidity, inducing them to increase their portfolio returns by investing in assets that earn a higher rate. The major channel for global spillovers in emerging countries is capital flows, along with the

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¹ Source: Bank of England.

² Source: European Central Bank via Eurostat.

³ Source: Federal Reserve Bank.

⁴ Source: Bank of Japan.

impact on exchange rates and other asset prices (Chinn, 2013). To what extent is global liquidity responsible for upward pressure on asset prices, especially in emerging countries? Few studies have tackled this question.

Due to substantial increases in international capital flows, the concept of “global liquidity” and the analysis of spillover effects attracted growing attention at the beginning of the 2000s. Most studies consider the impact of global monetary growth on interest rates, GDP and inflation rates only in industrialized countries (Rüffer and Stracca, 2006; Sousa and Zaghini, 2008). They identify significant consumer price reactions to global liquidity shocks, but the link to asset prices is mixed. Baks and Kramer (1999) find that for the G7 countries, global monetary growth has a positive impact on equity prices; however, Belke et al. (2010), who study the interaction between global liquidity and prices levels for goods and assets in 11 OECD countries, find that equity prices do not react to liquidity shocks. Their results are consistent with those of Giese and Tuxen (2007) and Darius and Radde (2010), who show that global liquidity has an impact on housing prices but not on stock prices. All of these authors use VAR models and impulse functions. Other authors find significant impacts of global liquidity on commodity prices (Beckmann et al., 2014; Ratti and Vespignani, 2013).

Studies of the impact of global liquidity on emerging countries are scarcer. Chudik and Fratzscher (2011) compare the role of the tightening of monetary conditions (estimated by the change in the 3-month money market interest rate) and the collapse in risk appetite (evidenced by a shock on the VIX index or the TED spread) in the global transmission of financial crises, as measured by changes in the stock market index. They show that liquidity shocks are felt more in leading countries, whereas changes in risk appetite are felt more in emerging economies. The IMF (2010) analyzes the link between global liquidity and equity prices in emerging countries and presents evidence of a positive impact between 2003 and 2009. Matsumoto (2011) finds the same result in some Latin American countries. Finally, Brana et al. (2012), using a PVAR model, confirm the positive impact of surplus global liquidity on asset prices for a sample group of 16 emerging economies in Latin America and Asia.

Following the financial crisis of 2008, a growing body of literature has studied the effects of unconventional monetary policies on international financial markets⁵ but empirical works about cross-border effects on emerging markets remain scarce. Fratzscher et al. (2013) analyze the effects of the Federal Reserve's unconventional policies on 65 foreign markets. They highlight the opposite effects of QE1 and QE2 on emerging asset prices via substantial rebalancing in global portfolios. Investors seem to have shifted out of emerging markets into U.S. equity and bond funds during the QE1 program, whereas the QE2 program prompted portfolio rebalancing in the opposite direction with strong capital flows into emerging markets. Using event study methodology and a GVECM model, Chen et al. (2011) provide empirical evidence on the short-run, cross-border effects of unconventional policies on asset prices in emerging economies, especially in Asia and Latin America. Over the long term, the expansionary impact seems to be stronger for some emerging economies than it is for the U.S. These results are in line with those of the IMF (2013) and Chinn (2013), although to this author, the impact seems to be mitigated by the exchange rates of some emerging economies. Morgan (2011) analyzes the impact of Federal Reserve LSAPs on Asian economies and financial markets and concludes that the LSAPs do not have a significant impact. In the same way, Moore et al. (2013) conduct an empirical analysis of the impact of LSAP announcements on ten emerging government bond market yields. They found that unconventional policies have contributed to U.S. outflows into emerging economies and explain marginal reductions in long-term government bond yields.

Our paper is part of the recent literature on the impact of unconventional monetary policies on asset prices especially in emerging markets. However, our approach, which extends recent research, differs from previous studies on different aspects, and our main contribution is threefold.

First, previous research has focused exclusively on linear models and neglected the possibility of nonlinearities in the relationship between monetary policy and asset prices. However, as noted by Beckmann et al. (2014) there are several reasons for nonlinearities in the context of a global monetary policy analysis. As previously mentioned, several authors have noted different—even opposing—effects of different programs of quantitative easing on asset prices in advanced and emerging economies according to different phases of the cycle (see Chen et al., 2011; Darius and Radde, 2010; Fratzscher et al., 2013; Glick and Leduc, 2012). Moreover, the usual channels of monetary policy transmission may have been impaired following the global financial crisis and pre-crisis relationships may have become obsolete (Chen et al., 2011). Our study introduces non-linearity into empirical methodology. To consider the non-linear response of emerging asset prices to quantitative easing measures of monetary policy, we use a panel threshold model developed by Hansen (1999). To our knowledge, such an empirical specification has not yet been used to account for the non-linear process between monetary policy and asset prices.

Second, along with the impact of global liquidity, our paper considers the literature on the impact of variations in global investor sentiments on financial stability (Bruno and Shin, 2012; Forbes and Warnock, 2012; González-Hermosillo, 2008). These empirical works focus on investors' risk appetites as a key determinant of capital flows and financial contagion. Jaramillo and Weber (2012) estimate the impact of a large drop in investor sentiment on bond yield for a set of emerging countries. We extend this literature to study the non-linear impact of unconventional measures on asset prices in emerging economies after controlling for the shift of international investor sentiment. In this paper, we present empirical evidence of a non-linear impact of global excess liquidity on equity prices using a panel threshold model for a set of 17 emerging market economies. More specifically, we use an index of global investor sentiment as a transition variable that separates “tranquil periods” from periods of financial stress. We find that global excess liquidity has a positive impact on asset prices during “tranquil” periods. However, when investors' risk aversion increases suddenly—i.e., when financial markets are under stress—the impact on asset prices changes.

Third, we calculate an original exhaustive global excess liquidity index for each country in our sample. In previous studies, global liquidity has referred only to monetary expansion in the U.S. or in some advanced economies. Cerutti et al. (2014) confirm the explanatory power of U.S. financial conditions on cross-border bank flows, but show that similar variables for other countries, like the U.K. and the Euro zone, are also important, sometimes even more so. Thus, the global liquidity variable cannot be restricted to U.S. monetary variables but must include other developed countries, including emerging countries that contribute to the growth of the global monetary base through the accumulation of foreign exchange reserves.⁶ Our global excess liquidity indicator, based on monetary bases, takes into account 49 countries, including developed, newly industrialized and emerging countries. Moreover, in our empirical study, this global excess liquidity indicator is exogenous for each country, which allows us to consider spillover effects between countries.

The remainder of the paper is organized as follows. Section 2 describes the data and the methodology employed to calculate our global excess liquidity index. Section 3 presents the panel threshold

⁶ For example, Ratti and Vespignani (2014) show that increases in the BRIC countries' liquidity is associated with significant increases in commodity prices that are much larger than the effect of increases in G3 liquidity.

⁵ See for example Neely (2013), Glick and Leduc (2013), or Bauer and Neely (2014).

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