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The introduction of emerging currencies into a portfolio: Towards a more complete diversification model

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Abstract. We have drawn on portfolio theory and international diversification in order to analyse strategies that help reduce emerging economy exposure to exchange-rate risk. We show that it may be efficient for an investor, by taking into account the several components of the global risk, to build up a portfolio of emerging-country assets denominated in local currency - unhedged against currency risk - compared with a strategy that includes emerging-country securities denominated in foreign currencies. This strategy would lead to a reduction in the "original sin" (i. e. the inability of emerging economies to borrow in local currency), and *de facto* to a reduction in currency mismatches in balance sheets of emerging economies.

JEL Classification: G11; E44; F34.
Keywords: International Portfolio Diversification; Original Sin; Emerging Countries; Downside Risk.

Résumé. Nous nous appuyons sur la théorie du portefeuille et de la diversification internationale afin d'analyser les stratégies permettant de réduire l'exposition des économies émergentes au risque de change. Nous montrons qu'il peut être efficient pour un investisseur, une fois prises en compte toutes les composantes du risque, de constituer un portefeuille d'actifs émergents libellés en monnaie nationale non couvert contre le risque de change par rapport à une stratégie qui inclurait dans le portefeuille des titres émergents libellés en devises. Cette stratégie conduirait à une diminution du « péché originel » (i. e. l'incapacité des économies émergentes à emprunter en monnaie nationale), et de fait à une réduction des déséquilibres en devises dans les bilans des économies émergentes.

Classification *JEL* : G11; E44; F34.
Mots-clefs : Diversification internationale des portefeuilles ; péché originel ; pays émergents ; risque asymétrique.

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1. Introduction

Balance sheet mismatches in emerging economies, particularly currency mismatches, have played a fundamental role in financial crises that have hit these economies for more than ten years. In the late 1990s, Eichengreen and Hausmann (1999) highlighted the fact that a major source of financial fragility in emerging economies was related to the currency composition of their external debt. With what they called the original sin theory, the two authors showed that emerging economies were more vulnerable to financial crises than industrialized countries because of their inability to borrow in international capital markets in their own currency. Indeed, the weight of outstanding external liabilities denominated in foreign currencies increases financial vulnerability because of the high exposure to foreign exchange and interest rate risk of these economies. It can trigger foreign exchange crises.

For Eichengreen *et al.* (2004, 2007), the original sin primarily reflects characteristics of international financial markets. In particular, the shortfall in hedging possibilities and the existence of transaction costs result in international investors giving their preference to a small number of currencies when building their portfolio. The portfolio allocation initiated by international investors is thus combined with a transfer of currency risk to emerging economies, which are ill-prepared to support this risk. Using a portfolio diversification approach we show that emerging economies might free themselves from such a risk in order to improve their resilience to shocks.

To do so, we show that a strategy consisting in including local-currency denominated emerging assets, not hedged against currency risk, in the portfolio of a foreign investor is not necessarily riskier than a foreign-currency denominated asset allocation. This is because the potential reduction of market risk (currency risk), *via* diversification of portfolios composed of emerging securities denominated in local currency, can be higher than the potential in terms of reduction in credit risk (or default risk) related to an international portfolio including foreign currency-denominated emerging securities, thereby steering the debt structure of emerging countries towards a structure in the local currency that would be more stable and less risky.

The rest of the article is as follows. Section 2 presents the theoretical model we draw upon, by justifying notably our choice to use an asymmetric measure of the portfolio's risk. Section 3 presents the methodology used while we empirically assess the various components of the portfolio's risk in Section 4. We draw our conclusions in Section 5.

2. Theoretical model

We use the portfolio diversification theory proposed by Markowitz (1952, 1959) so as to break down several components of the global risk of an internationally diversified portfolio. Initially, Markowitz's model, which is based on strong hypothesis that economic agents have a quadratic utility function, uses standard deviation (or the variance) of returns on securities to measure portfolio's risk. A first limitation of this measure is that it takes into account, without

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