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Journal of Asian Economics 15 (2005) 1103–1118
JOURNAL OF ASIAN ECONOMICS

Bank lending and real estate in Asia: market optimism and asset bubbles

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Received 10 January 2004; received in revised form 24 June 2004; accepted 12 November 2004

Abstract

This paper investigates the Asian real estate price run-up and collapse in the 1990s. We identify financial intermediaries' underpricing of the put option imbedded in non-recourse mortgage loans as a potential cause for the observed price behavior. This underpricing is due to behavioral causes (lender optimism and disaster myopia) and/or rational response of lenders to market incentives (agency conflicts, deposit insurance, or limited liability of bank shareholders). The empirical evidence suggests that underpricing occurred in Thailand, Malaysia, and Indonesia. Consequently, these countries experienced a more severe market crash than Hong Kong and Singapore, where

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1049-0078/$ – see front matter
doi:10.1016/j.asieco.2004.11.004

underpricing was kept under control by strong government intervention and/or more appropriate incentive mechanisms.

Keywords: Real estate bubble; Lender optimism; Disaster myopia; Asian financial crisis

1. Introduction

Excessive bank lending to the real estate sector has been noted as an explanation of the Asian financial crisis. For instance, while Sachs and Woo (2000) point to macroeconomic problems as the basis for the crisis, they also note that "too much money was poured into speculative real estate projects, e.g., in downtown Bangkok." More directly, Krugman (1998), states that "(t)he problem began with financial intermediaries—institutions whose liabilities were perceived as having an implicit government guarantee, but were essentially unregulated and therefore subject to severe moral hazard problems. The excessive risky lending of these institutions created inflation—not of goods but of asset prices." Krugman goes on to identify the need for a more complex analysis of the Asian financial crisis based on an option value approach.

In a recent theoretical paper Pavlov and Wachter (2004), hereafter PW, formalize an options-based model of financial intermediaries. As PW show, non-recourse asset-backed loans imbed a put option which gives the borrower the right to default. If the value of the underlying asset falls below the outstanding balance of the loan, the borrower may simply "put" the asset to the lender, and walk away from any future payments of the principal or interest on the loan. The lender is compensated for providing this option through a higher interest rate on the loan. PW demonstrate that, if lenders underprice this put option, asset markets incorporate this mistake in higher asset prices. They further identify the conditions that induce lenders to rationally underprice the put option.

In this paper, we apply the PW model to the Asian financial crisis. In particular, we examine the underpricing hypothesis for its impact on asset prices, using data for five Asian countries. This underpricing is initiated by short-term bank managers who rationally underestimate the default risk of their loans in order to capture larger market share. Under certain conditions, competition then forces all remaining managers to underprice the put option as well. PW show such these effects can lead to an underpricing equilibrium in the lending market, as well as inflated prices in the asset market. Importantly, these results hold even when market participants are fully rational.

Of the five Asian countries we examine, we empirically find evidence consistent with the PW underpricing phenomena in Thailand, Malaysia, and Indonesia. Hong Kong and Singapore, on the other hand, do not seem to exhibit the symptoms of underpricing. Interestingly, the first three countries experienced real estate price declines of 95, 86, and 81 percentage points, respectively, while Singapore and Hong Kong saw relatively more tempered declines of 33 and 38 percentage points. These findings are consistent with the widely accepted notion that there was a shift in demand for real estate assets caused by macroeconomic negative demand shock but this shift was substantially magnified by the excessive bank lending in certain countries.