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Household indebtedness in Korea: Its causes and sustainability☆

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ABSTRACT

This paper investigates why household debt in Korea has increased so rapidly over the past decade and whether it is sustainable, adopting a multi-faceted approach which includes a time series analysis, a quantitative analysis based on household panel data, and an analysis using a debt dynamics equation derived from the household budget constraint. A regression analysis reveals that household debt growth has been significantly related to house price increases, banks' lax attitudes toward household lending, and financial institutions' favorable funding conditions. Also 70–80% of the total debt increase has been accounted for by high income or newly indebted households. The debt dynamics equation analysis shows that the rapid rise in the ratio of household debt to disposable income is attributable not only to the increase in household asset purchases but also to the dampened growth in disposable income and the reduced savings rate. The sustainability analyses indicate that Korean households' debt sustainability is unlikely to deteriorate sharply within a short period of time unless two extreme scenarios, under which house prices decline by 5% a year over the next five years, or a significantly large macroeconomic shock similar to the 1997 crisis hits the economy, would be realized.

1. Introduction

A debt contract is an inter-temporal financial transaction made based upon the borrower's future income, with its basic role being to promote the efficient allocation of resources over time. Household debt enables consumption smoothing in response to changes in household income, while corporate debt facilitates investment smoothing for firms facing variable sales and profits. Likewise, government debt allows consumption smoothing across generations and enables tax smoothing. In this way, debt promotes economic growth and improves social welfare by smoothing economic activities and making efficient resource allocation possible (Cecchetti et al., 2011). Beyond a certain level, however, debt can have the opposite effects on economic fluctuations and growth due to its contractual feature—that is, the limited liability of the borrower. This characteristic often becomes a source of financial crisis and ensuing economic recession, by leading to risk shifting[4] among economic agents and asset price bubbles as a result (Allen and Gale, 2000).

While consumers' consumption and savings behaviors have long been scrutinized by economists, household debt only began to draw attention relatively recently (Debelle, 2004; Dynan and Kohn, 2007; Cecchetti et al., 2011). Many advanced economies had witnessed continuous and rapid increases in household indebtedness in the two or three decades before the 2008 global financial crisis. And many studies have pointed to increasing home mortgage loans and rising asset prices as the primary causes driving this trend. The provision of real assets as collateral can facilitate debt contracts by supplementing for market

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[4] When an investor invests in a project by borrowing from financial institutions, he or she can limit their loss by defaulting on their loans if the project goes sour. They can meanwhile enjoy a higher expected rate of return if the project is riskier, and investors thus tend to make investments in riskier projects.

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imperfections such as information asymmetry, while real assets provided as collateral in debt contracts may serve as financial accelerators that amplify the business cycle through the interaction between asset prices and credit availability (Bernanke et al., 1999). The fundamental factors underlying the causes for these continuous increases in household debt over the past few decades are considered to include financial deregulation,[5] financial innovations including asset securitization, and demographic changes such as increases in the proportions of the middle-aged in populations as a whole.

This robust increasing trend in household indebtedness has been changing since the recent global crisis, however, in that in major economies including the U.S. and the U.K., where the crisis broke out, the ensuing household sector deleveraging took place simultaneously with asset price declines. In Korea the increases in household debt and asset prices—particularly in the Seoul metropolitan area—had also been closely linked up until the global financial crisis. Korea has differed from other countries, however, in that its household debt has continued to increase since the crisis, even though real estate prices, especially in the Seoul metropolitan area, have been stagnating. The continuing momentum of household debt growth in the Korean economy can be partly explained by the increases in real estate prices ever since housing prices outside of the Seoul metropolitan area, which had been stable in the pre-crisis period, began to rise in recent years. However, as the increase in household debt since the global financial crisis has been a nationwide phenomenon, there must be other reasons behind it as well.

The research analyzing household debt in advanced economies has been growing since the recent crisis. Mian and Sufi (2009) investigate the origins of the subprime mortgage crisis using detailed ZIP code-level data, to show that the substantial mortgage expansion observed in the U.S. between 2002 and 2005 can mainly be accounted for by a rise in the credit supply. Enguld (2011) and Attansio et al. (2009) also conduct empirical research on the increases in household debt—in Sweden and the U.K. respectively. Sufi (2012) analyzes US household debt with a focus on identifying whether the expansion in household credit has been mainly supply-driven—caused by credit expansion by financial institutions—or demand-driven—caused by an increase in productivity or in the permanent incomes of borrowers. Finally, Cecchetti et al. (2011) define an excessive household debt threshold in terms of a growth-hampering level of debt. According to them, the level of debt reaches a critical point when its level is so excessive as to negatively affect economic growth, and this point is estimated to be 84% of GDP.[6]

Relatively small attention, however, has been paid to emerging economies like Korea, in that a rigorous empirical literature trying to explain the economic fundamentals behind the rise in household debt and its sustainability in emerging economies is rarely found.[7] Against this background, this paper attempts to answer the question of why household debt has increased so fast over the last 10 years in Korea, and whether Korea's household debt, which is higher than those of some major economies that have highly developed financial sectors, is sustainable. In this vein, this paper may fill some gaps in the literature by providing a comprehensive discussion of the household indebtedness issue in emerging economies, including rich analyses on the issue of household debt sustainability.

The analysis is conducted mainly in three ways—depending upon the data and the methodology used: the first being a standard time series analysis including a regression and a VAR using aggregate data; the second a quantitative analysis based upon household panel data including Sufi (2012)'s method of identifying whether the increase in household debt is supply- or demand-driven; and the last one, which is our novel approach, analysis using a debt dynamics equation derived from the household budget constraint, in which we apply the method of Ghosh et al. (2011) for analyzing sovereign debt sustainability to the household debt problem. An analysis based upon several approaches can be quite useful in revealing the causes and macroeconomic implications of household indebtedness more thoroughly. Moreover, as shown below, the findings drawn from these three approaches are mutually coherent and complementary.

The results estimation for identifying the main reasons behind the increase in household debt in Korea over the past 10 years can be summarized as follows. First, the regression and VAR analyses reveal that the run-up in house prices, the risk-taking attitudes of banks as proxied by their leverage ratios, and the rate of growth in deposits at non-bank financial institutions have all contributed significantly to the increase in household debt in Korea throughout the 2000s. Second, the analysis using household panel data shows that the majority of the increase in household debt in Korea, both before and after the global financial crisis, has been due mainly to newly indebted households (70–80%), i.e. those having had no debts in the previous year, and to the 4th and 5th income quintile groups (73–74%). Lastly, the decomposition results using the debt dynamics equation show that, before the Asian currency crisis, the expansion in households' asset holdings was financed mainly by the relatively high growth in their disposable incomes and their high savings rate, resulting in a limited increase in the average annual change in the household debt ratio, while for the sub-periods of 1998–2007 and 2008–2011 in contrast, the household debt ratio increased at a faster pace owing mainly to the much lower growth in disposable income and savings rate during that time.

Overall, the factors contributing to the consistent and rapid increase in household debt in Korea are not so different from those explaining the similar trends in advanced countries—including asset price hikes, financial deregulation and a stable macroeconomic environment. Consequently, the trend of household debt increase can be understood as a process of financial deepening or widening of access to consumer credit, accompanied by a robust increase in income in the Korean household sector. As Korea's ratio of household debt to disposable income is relatively high, however, given the relative underdevelopment of its financial market compared to those of advanced economies, the question can be raised of whether the level of household debt in the economy is sustainable.

The results of estimation as to the sustainability of household debt in Korea can be summarized as follows. First, analysis employing a univariate threshold method as proposed by Mendoza and Terrones (2008) shows that the increases in household debt during 2005–2007 and 2010–2011, when it grew by 9–11% annually, do not deviate so much from the long-term trend seen between 1985 and 2011, and that Korea has approached a credit boom threshold only twice: right before both the 1997 foreign currency and the early-2000s credit card crises. To check the robustness of this method we also estimate a multivariate threshold panel regression following Hansen (1999), with results largely in line with those based on the first method. Second, quantitative analysis following Sufi (2012) illustrates that the debt growth of liquidity-constrained households is much slower than

[5] When financial deepening takes place due to financial deregulation, trend household credit expands much more rapidly than trend GDP, leading thereby to a rapid increase in the debt-to-GDP ratio.

[6] Reinhart and Rogoff (2009) estimate the growth-hampering level of sovereign debt as 90% of GDP. For a further review of the literature concerning the relationship of household indebtedness to housing prices and the macroeconomy, please see Finocchiaro et al. (2011).

[7] One exception is Karasulu (2008) conducting stress testing for household debt in Korea.