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Tip of the Iceberg: The Global Ramifications of a China Debt Crisis

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Introduction

A hard landing in China remains a looming threat to the global economy and especially to the rest of Asia. Chinese authorities have averted such a scenario so far, but rising leverage in China's financial system magnifies the risk of a policy misstep. This paper considers the consequences of a China debt crisis for the Chinese and global economies, with a special focus on Southeast Asia and emerging markets.

Tip of the Iceberg: The Global Ramifications of a China Debt Crisis

BY STEVEN G. COCHRANE AND JESSE ROGERS

A hard landing in China remains a looming threat to the global economy and especially to the rest of Asia. Chinese authorities have averted such a scenario so far, but rising leverage in China's financial system magnifies the risk of a policy misstep. This paper considers the consequences of a China debt crisis for the Chinese and global economies, with a special focus on Southeast Asia and emerging markets.

More specifically, we assume that slowing growth in China, tighter financial conditions in the shadow banking system, and diminishing returns to government stimulus result in a severe deterioration in credit conditions. As asset and property values decline, defaults on corporate and personal loans cascade through the banking system, causing systemically important financial institutions to fail. As authorities struggle to contain the damage, credit markets freeze over, firms and households slash spending, and the Chinese economy falls into recession.

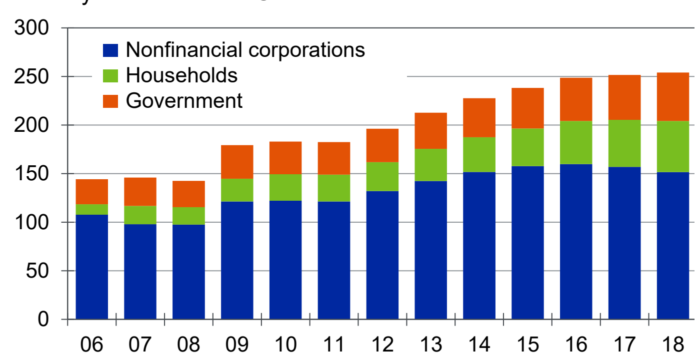
In this dark scenario, unemployment rises, China's stock market plunges, house prices fall, and the balance sheets of banks and local governments worsen. As domestic demand shrivels, Chinese imports plunge. The hit to global trade and accompanying capital flight send shock waves through global financial markets, causing global sentiment to darken and risk premiums to rise. As global financial conditions tighten and spending contracts, the global economy plunges into recession.

Tip of the iceberg

China's slowing economy has brought financial system risks to the fore. Borrowing by Chinese firms and households surged in the aftermath of the global financial crisis as global trade slowed and Beijing turned to credit-fueled stimulus to prop up growth. As China's share of global exports topped off, successive rounds of stimulus did more to raise debt levels than to boost growth. Borrowing by firms and households shot up by a factor of four in the past decade, causing China's total debt-to-GDP ratio to increase by more than half (see Chart 1). Government leverage has remained relatively stable, but borrowing by local governments, much of it slow to appear in official statistics, likely understates the debt burden borne by the public sector.[1]

Chart 1: China's Rising Debt Burden

Debt by sector as % of GDP



Sources: Bank for Intl. Settlements, Moody's Analytics

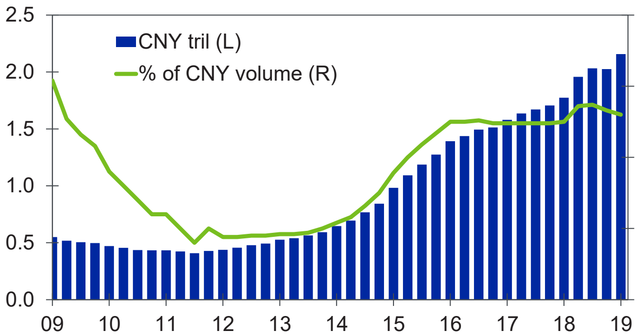
In a bid to curb excessive borrowing and tame risks posed by the shadow banking system, where regulation is light and credit quality opaque, Chinese authorities have stiffened capital requirements and forced banks and asset managers to better account for nonperforming loans. As a result, credit provided by the shadow system has shrunk at near double-digit rates over the past year (see Charts 2 and 3). While Chinese officials have engineered a gradual pullback in shadow lending, financial conditions for small and medium-size firms have tightened, spurring a wave of defaults that have threatened the health of the country's smaller lenders.

Although contagion risks have since ebbed, the recent credit crunch underscores the dilemma posed by Beijing's deleveraging

1 Investment in fixed assets as a share of total GDP at the provincial level has nearly doubled over the past decade, suggesting that official statistics may understate local and total central government debt. See Steven G. Cochrane, Shu Deng, Abhilasha Singh, Jesse Rogers, Brittany Merollo, "China's Provincial Economies: Growing Together or Pulling Apart?" Moody's Analytics, January 2019.

Chart 2: Credit Quality Still a Concern

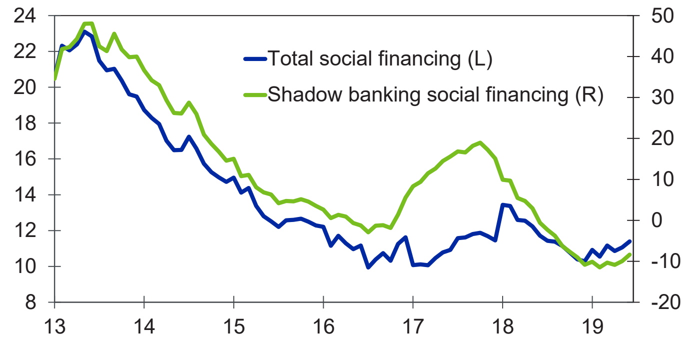
Nonperforming loans



Sources: China Banking Regulatory Commission, Moody's Analytics

Chart 3: Shadow Lending Contracts

% change yr ago



Sources: PBoC, Moody's Analytics

campaign. Efforts to clean up the financial system can yield results but at the expense of credit-fueled stimulus. Given the ratcheting-up of the U.S.-China trade war and the broader slowdown in China's economy, authorities appear inclined to pursue the latter. In May, the People's Bank of China cut the reserve requirement ratio—the amount of funds that banks must hold at the PBoC as a proportion of their total deposits—by a stunning 350 basis points for small and medium-size lenders, bringing the cumulative reduction in the ratio to 600 basis points over the past year. Tax cuts and increased quotas for local government bond issuance round out recent stimulus measures.

Given dual risks posed by financial leverage and a slowing economy, striking the right policy mix will be a tightrope. Making things more difficult is reduced fiscal space and already-favorable monetary conditions. Should financial conditions sour, prior reserve ratio cuts and China's shrinking current account surplus limit officials' ammo.

Methodology

To investigate the implications of a severe downturn in the Chinese economy on the economies of Southeast Asia and the rest of the world, we use the Moody's Analytics model of the global economy. The model links more than 70 countries through trade, global financial markets, exchange rates, sentiment, and capital flows.

In this exercise, we assume Chinese credit markets freeze over as bad loans mount and Chinese banks race to cut exposures, culminating in a full-blown debt and banking-system crisis. To simulate the stress of a severe crisis in Chinese financial markets on the Chinese and global economies, we shock Chinese interest rates, equity and house prices, and household and business sentiment. The shocks begin in the third quarter of 2019 and last four to six quarters.

We then measure the fallout from the initial shock in China on the economies of the U.S., Southeast Asia, and the rest of the world in terms of GDP, stock prices, interest rates, exchange rates, and other economic and financial variables of interest. The result is a sharp contraction in real economic activity in China that propagates through the rest of the global economy.

Trade flows, financial markets, exchange rates, consumer and business sentiment, and capital flows are the primary channels in the model that link the Chinese economy to the rest of the world. The severity of the impact on economies in Southeast Asia and the rest of the world depends on individual countries' trade patterns, the volatility of exchange rates, the integration of their financial markets with the global and Chinese economies, and their role in cross-border capital flows.

China and the U.S.

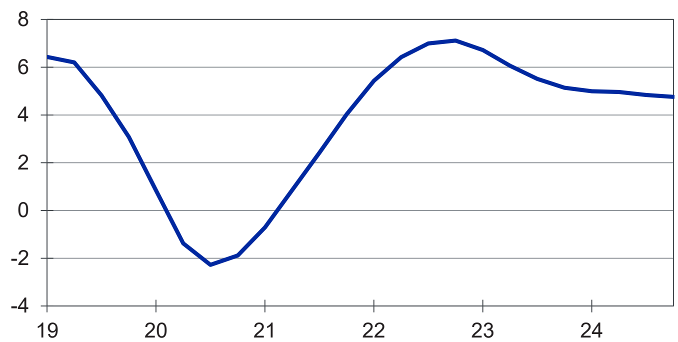
The ramifications of a Chinese debt crisis are far-reaching and entail large negative consequences for the world's two largest economies. In this scenario, China's economy stalls as policymakers struggle to balance stimulus with stricter regulation of the shadow banking system, a critical source of capital for small and medium-size firms.

As the Chinese economy slows and returns on investment decline, firms struggle to meet loan obligations. Meanwhile, tighter regulation of wealth management products and other securitized loans originating in the shadow system raises funding costs. Squeezed by falling returns, troubled firms default in greater numbers. Losses cascade throughout the financial system, causing credit markets to seize up. As the credit crunch deepens, formerly healthy firms begin to pare workers. Unemployment rises and household incomes fall, triggering a wave of defaults on mortgage loans and a broader crash in real estate markets.

By the time officials marshal a bailout of troubled firms and banks and ease credit conditions for households and businesses, the economic damage is palpable. China's GDP contracts by nearly 1.8% in the first three quarters of 2020 and its economy is more than 2% smaller when it bottoms in the final quarter of that year (see Chart 4). Stock markets lose more than half their value, while house prices fall nearly 40% as income and debt-constrained households default on mortgage loans. Because land values are a critical source of income for local governments, their balance sheets worsen, limiting their ability to inject stimulus.

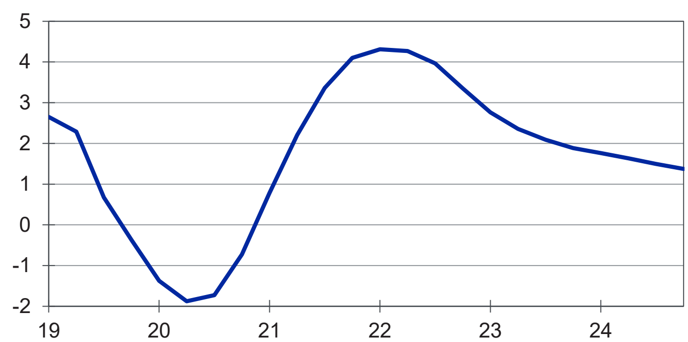
As capital flees the country, officials intervene in currency markets in a bid to stabilize the yuan. However, they quickly change course as dollar sales run down the bank's

Chart 4: China Real GDP Growth



Sources: National Bureau of Statistics, Moody's Analytics

Chart 5: U.S. Real GDP Growth



Sources: BEA, Moody's Analytics

large stock of reserves. The PBoC allows the yuan to float, triggering a steep depreciation. Capital outflows briefly intensify before leveling off as the devaluation runs its course.

Although U.S. financial institutions have little direct exposure to Chinese banks, U.S. stock prices decline abruptly as farm, energy and auto producers grapple with plunging prices and reduced export demand. The hit to U.S. stock prices stems not only from the decline in direct exports by U.S. firms but also from reduced sales of U.S. autos, consumer goods and electronics produced in China and sold to Chinese consumers. As U.S. corporate profit margins shrink and the selloff deepens, volatility spikes, causing yields on riskier corporate debt and short-term loans to rise. U.S. tech firms that export directly to China or have large operations within the country cut investment in both China and the U.S., causing stock prices to tumble further and volatility to increase further.

The decline in stock prices clouds business and consumer sentiment. As financial markets swerve, firms postpone or slash investments, while financial jitters cause consumers to cut back spending. As households and businesses reduce outlays, unemployment rises and the U.S. economy falls into recession. The economic pain falls short of that experienced during the Great Recession but is nonetheless substantial. GDP growth declines in the second half of 2019, and the economy contracts by nearly 2% by mid-2020 (see Chart 5).

The Federal Reserve responds swiftly as the U.S. economy weakens. The Fed cuts rates in late 2019 as the U.S. economy begins to weaken, and successive cuts in early 2020 bring the federal funds rate to the zero lower bound. To further loosen financial conditions and stabilize the economy, the Fed restarts quantitative easing. Long-term rates—including longer-dated government bonds and riskier corporate debt—trend lower as the fed funds rate declines and as the global flight to quality compresses long-term yields.

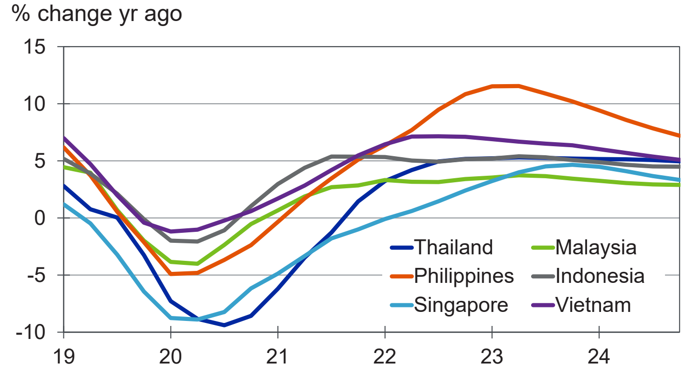
As China and the U.S. tip into recession, financial panic spreads to Europe and emerging markets. Germany's export-oriented economy contracts deeply as reduced exports to China and the U.S. and financial market contagion exact a painful toll; other large European economies follow Germany into recession. The economic woes of the U.S., China and Europe roil Southeast Asia and other emerging markets.

Southeast Asia

The economic and financial turmoil in China sends shock waves throughout Southeast Asia, resulting in a deep and protracted recession across the region (see Chart 6). As trade flows plummet, Southeast Asian firms respond by cutting production and investment, causing labor market conditions to deteriorate and unemployment to rise. Households cut expenditures in response, intensifying the shock to trade flows and financial markets. The magnitude of the blow varies across countries depending on trade and financial linkages to China and their own economic vulnerabilities. Thailand, Indonesia, Malaysia, the Philippines, Singapore and Vietnam experience especially large downturns. These Southeast Asian economies all have large exposures to China via trade and financial channels; all six send a significant share of their total exports to China (see Table 1).

Hong Kong and Taiwan are similarly impacted by the collapse in trade across the region. As China's financial and economic troubles worsen, Hong Kong's financial sector—a critical source of capital for Chinese firms—absorbs heavy losses. The damage also extends to manufacturing exports. While Hong Kong's high-tech manufactur-

Chart 6: Southeast Asia Real GDP Growth



Sources: Central banks, Moody's Analytics

Table 1: Share of Exports to China

% of total, 2018

Indonesia	14.9
Malaysia	15.4
Philippines	7.0
Singapore	14.8
Thailand	13.1
Vietnam	15.8

Sources: IMF, Moody's Analytics

ers are small relative to those in mainland China, they nonetheless play an important part in regional supply chains as suppliers of high-value computer and electronics components. The economic fallout in Taiwan is similar in magnitude to that of Hong Kong; the island plays a similarly important role in high-tech supply chains and plays host to the corporate headquarters of several of China's largest manufacturers.

The fallout from China's contracting economy stretches beyond direct trade linkages. Supply chain linkages to third countries magnify individual countries' exposures. For example, Malaysia also exports to Japan, Singapore and other markets. As a result, China affects Malaysia not only directly by reducing demand for imports but also indirectly by hurting Malaysia's exports through Japan, Singapore and other markets. As the negative shock in China spreads to Japan and Singapore, demand for Malaysia's exports contracts further.

Because of this, each country's export-oriented industries are tightly linked to Chinese demand either by direct or indirect channels. These include computer and vehicle manufacturing in Thailand; integrated circuits and refined petroleum production and palm oil in Malaysia; integrated circuits and computer manufacturing in the Philippines; iron ore, coal briquettes, petroleum and palm oil in Indonesia; integrated circuits and refined petroleum in Singapore; and textiles, computers and electronics, and high-tech components in Vietnam.

Laos, Cambodia and Myanmar suffer large declines in economic activity as well, but the fallout is somewhat lighter because of their smaller role in regional supply chains. Although the three countries' manufacturing sectors have benefited from rising wages in China and growing trade and financial integration, domestic textiles and electronics manufacturers are relatively small in scale and have only recently started to attract large sums of foreign investment.

Financial linkages further transmit the recession in China to Southeast Asian markets. Co-movements of Southeast Asian financial markets are highly correlated with China. This is especially so in times of economic duress (see Table 2). Given tight integration of capital markets across the region, financial markets react immediately to the Chinese stock market turbulence. Capital flows out of these markets to safe harbors such as the U.S. and Germany, causing currencies in the Southeast Asian countries to depreciate sharply. Despite the boost to competitiveness from cheaper currencies, the deep contraction in domestic demand in China and the rest of the world causes exports to wither.

Foreign direct investment inflows from China and developed markets plummet, exacerbating the decline in investment. Chinese outward direct investment has risen at a rapid clip over the past decade, making the decline in FDI flows especially painful. Direct investment has flowed into individual manufacturing industries as well as regional infrastructure projects under the banner of China's One Belt One Road, with investments across Thailand, Vietnam and Indonesia.

Higher interest rates also play a role in curtailing business investment. As capital takes flight, yields on sovereign bonds spike, pushing up interest rates and reducing credit availability. As the economic and financial shocks spread throughout the region, government balance sheets deteriorate and infrastructure investments decline, worsening the already-poor quality of infrastructure in emerging Asia, and

Table 2: Stock Market Correlation With China

	2002-2018	2006-2008
Indonesia	0.69	0.91
Malaysia	0.65	0.94
Philippines	0.57	0.88
Singapore	0.76	0.81
Thailand	0.51	0.60
Vietnam	0.77	0.68

Source: Moody's Analytics

in the Philippines, Vietnam, Indonesia and Thailand in particular.

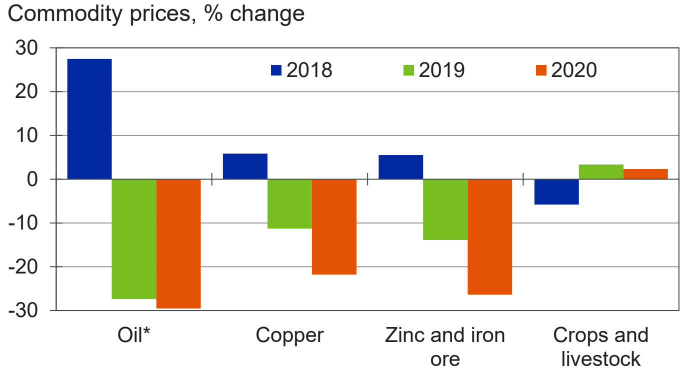
Latin America and beyond

Latin America's reliance on commodity exports, and in particular, on trade with China, has only increased over the past two decades, heightening its vulnerability to a China-centric economic shock. South America experienced an especially sharp slowdown in 2015 as China's cooling economy sent commodity prices to decade lows, and overall economic growth in Latin America has trended lower in the past eight years as China's economy slowed. Mexico is an exception to this trend, but investments by Chinese firms in sectors as diverse as energy, autos and electronics have grown in recent years and create exposure to a downturn in China.

In this scenario, China's economic troubles exact an especially severe toll on Latin America given large negative impacts on oil prices, agricultural commodities, and industrial metals exports and prices (see Chart 7). Latin America's eight largest economies contract

Chart 7: China Tremors Hit Commodities

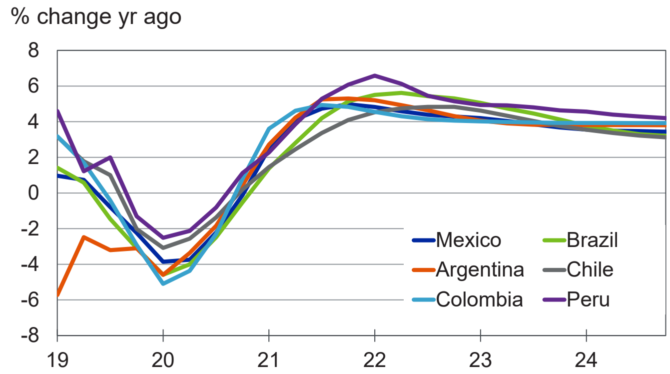
Commodity prices, % change



Sources: EIA, LME, USDA, Moody's Analytics

*West Texas Intermediate

Chart 8: Latin America Real GDP Growth



Sources: Central banks, Moody's Analytics

severely as falling commodity prices erode the terms of trade and capital flight drives down currencies and pushes up inflation. Mexico, Argentina, Brazil and Colombia experience the largest declines in GDP growth given the dual crises in China and the U.S.—the countries' top two trade partners—but effects are widespread throughout the region. The decline in copper and other metals prices tightens the vise on Chile and Peru, while Colombia's economy weakens on account of the collapse in oil prices and global crude demand (see Chart 8). Venezuela's economy weakens further as oil revenues decline.

The repercussions of China's debt-triggered crisis go well beyond Latin America: Emerging economies large and small are roiled by the meltdown in Chinese financial markets and the subsequent contraction in trade and international capital flows. These include oil and metals producers such as Russia, Nigeria, Saudi Arabia and South Africa as well as emerging economies with persistent current account deficits such as Turkey, India and Pakistan. Emerging European economies also experience sharp contractions in GDP as global credit spreads tighten, pushing up sovereign yields in peripheral Europe.

A delicate dance

With the Chinese economy now facing its most vulnerable window of growth since the global financial crisis, officials' push to address financial system risks and stabilize growth will prove a particularly challenging proposition. Policy missteps on either front could lead to a rapid deterioration in credit conditions, with severe consequences for the Chinese and global economies. While this paper does not consider further escalation of the trade war between China and the U.S., increased tensions would likely leave the Chinese and global economies in a more precarious position, magnifying the fallout of a debt crisis and subsequent credit crunch.

The integration of the Chinese and global economies over the past three decades has hoisted global growth and boosted incomes and productivity. However, increased interdependencies raise risks of contagion should economic and financial conditions in China turn south. With the Chinese economy now at a crossroads, risks to the Chinese financial system bear a close watch.

Appendix 1: China Debt Crisis: China and Southeast Asia

		2019	2020	2021	2022	2023	2024
				Gross domestic product, % change			
China	Baseline	6.3	6.0	5.7	5.2	4.9	4.6
	Debt crisis scenario	3.8	-1.6	3.2	6.8	5.4	4.8
	Difference from baseline, ppt	*-2.5*	*-7.6*	*-2.5*	*1.7*	*0.5*	*0.2*
Hong Kong	Baseline	2.4	2.7	2.5	2.3	2.0	2.0
	Debt crisis scenario	0.7	-1.9	2.4	5.1	4.8	3.5
	Difference from baseline, ppt	*-1.7*	*-4.6*	*-0.1*	*2.8*	*2.9*	*1.5*
Taiwan	Baseline	1.5	2.8	1.9	2.1	1.8	1.5
	Debt crisis scenario	-1.2	-3.5	3.0	3.1	2.3	1.6
	Difference from baseline, ppt	*-2.8*	*-6.3*	*1.0*	*1.1*	*0.5*	*0.1*
Indonesia	Baseline	5.3	5.1	5.1	5.0	4.8	4.8
	Debt crisis scenario	2.7	-1.0	4.5	5.1	5.3	4.6
	Difference from baseline, ppt	*-2.5*	*-6.1*	*-0.6*	*0.1*	*0.4*	*-0.2*
Malaysia	Baseline	4.6	3.8	3.1	3.0	3.3	3.2
	Debt crisis scenario	1.8	-2.7	2.0	3.3	3.6	3.0
	Difference from baseline, ppt	*-2.9*	*-6.5*	*-1.1*	*0.2*	*0.4*	*-0.2*
Philippines	Baseline	6.6	6.8	6.8	6.7	7.0	6.8
	Debt crisis scenario	2.0	-4.0	2.5	8.6	11.0	8.2
	Difference from baseline, ppt	*-4.6*	*-10.8*	*-4.3*	*1.9*	*4.0*	*1.5*
Singapore	Baseline	2.1	2.9	2.4	2.4	2.1	2.3
	Debt crisis scenario	-2.2	-8.0	-2.8	1.1	4.1	3.9
	Difference from baseline, ppt	*-4.3*	*-10.9*	*-5.2*	*-1.3*	*2.0*	*1.6*
Thailand	Baseline	3.6	3.6	2.6	2.2	1.9	1.9
	Debt crisis scenario	0.1	-8.5	-2.4	4.4	5.3	5.1
	Difference from baseline, ppt	*-3.6*	*-12.1*	*-5.1*	*2.2*	*3.3*	*3.1*
Vietnam	Baseline	6.6	6.5	5.9	5.8	5.3	4.9
	Debt crisis scenario	3.3	-0.5	3.6	7.0	6.6	5.5
	Difference from baseline, ppt	*-3.3*	*-7.0*	*-2.3*	*1.2*	*1.3*	*0.6*
				Unemployment rate, %			
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
China	Baseline	3.9	3.9	4.0	4.0	4.0	4.0
	Debt crisis scenario	4.4	5.8	6.0	5.7	5.1	4.8
	Difference from baseline, ppt	*0.5*	*1.8*	*2.0*	*1.7*	*1.2*	*0.8*
Hong Kong	Baseline	2.9	3.0	3.0	2.9	2.9	2.9
	Debt crisis scenario	3.2	4.3	4.6	3.9	3.1	2.7
	Difference from baseline, ppt	0.3	1.3	1.6	1.0	0.2	-0.2
Taiwan	Baseline	3.7	3.6	3.6	3.7	3.8	3.8
	Debt crisis scenario	3.8	4.3	4.2	3.8	3.7	3.8
	Difference from baseline, ppt	0.1	0.7	0.5	0.1	-0.0	-0.0
Indonesia	Baseline	5.2	5.2	5.2	5.2	5.2	5.3
	Debt crisis scenario	6.2	8.9	9.9	9.4	8.2	7.1
	Difference from baseline, ppt	*1.0*	*3.7*	*4.7*	*4.2*	*3.0*	*1.8*
Malaysia	Baseline	3.1	3.1	3.1	3.1	3.1	3.1
	Debt crisis scenario	3.5	5.3	5.6	4.8	4.0	3.6
	Difference from baseline, ppt	*0.4*	*2.2*	*2.4*	*1.7*	*0.8*	*0.4*
Philippines	Baseline	5.4	5.3	5.3	5.5	5.5	5.5
	Debt crisis scenario	5.6	6.3	7.6	8.7	9.0	8.7
	Difference from baseline, ppt	*0.2*	*1.0*	*2.3*	*3.2*	*3.5*	*3.2*
Singapore	Baseline	2.3	2.3	2.2	2.2	2.1	2.0
	Debt crisis scenario	2.6	3.9	4.3	3.7	3.1	2.8
	Difference from baseline, ppt	*0.2*	*1.6*	*2.1*	*1.5*	*1.0*	*0.8*
Thailand	Baseline	0.71	0.53	0.6	0.64	0.69	0.73
	Debt crisis scenario	1.12	2.12	2.21	1.85	1.51	1.32
	Difference from baseline, ppt	*0.4*	*1.6*	*1.6*	*1.2*	*0.8*	*0.6*
Vietnam	Baseline	2.14	2.17	2.21	2.23	2.24	2.25
	Debt crisis scenario	2.45	3.03	3.22	3.2	3.12	2.97
	Difference from baseline, ppt	*0.3*	*0.9*	*1.0*	*1.0*	*0.9*	*0.7*

Source: Moody's Analytics

Appendix 1: China Debt Crisis: China and Southeast Asia (Cont.)

		Stock price index, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
China	Baseline	-0.8	4.4	15.1	9.8	4.8	4.2
	Debt crisis scenario	-25.6	-38.3	12.2	28.5	20.7	14.0
	Difference from baseline, ppt	*-24.9*	*-42.7*	*-2.9*	*18.6*	*15.9*	*9.8*
Hong Kong	Baseline	-0.8	2.3	11.5	6.0	3.5	3.3
	Debt crisis scenario	-22.0	-42.7	8.7	20.1	16.0	15.3
	Difference from baseline, ppt	*-21.2*	*-45.1*	*-2.7*	*14.2*	*12.6*	*12.0*
Taiwan	Baseline	0.8	4.4	3.4	0.3	0.7	1.5
	Debt crisis scenario	-13.0	-8.2	17.6	9.3	5.4	1.9
	Difference from baseline, ppt	*-13.8*	*-12.6*	*14.1*	*9.0*	*4.8*	*0.4*
Indonesia	Baseline	14.2	-0.7	5.2	6.4	5.5	5.5
	Debt crisis scenario	-3.6	-19.8	12.4	19.8	15.8	10.5
	Difference from baseline, ppt	*-17.8*	*-19.2*	*7.2*	*13.4*	*10.3*	*5.0*
Malaysia	Baseline	-4.0	-2.6	3.6	4.5	4.1	4.8
	Debt crisis scenario	-21.2	-27.7	3.3	9.1	6.9	9.1
	Difference from baseline, ppt	*-17.2*	*-25.1*	*-0.3*	*4.6*	*2.9*	*4.3*
Philippines	Baseline	8.9	0.8	16.1	10.8	7.4	5.6
	Debt crisis scenario	-14.1	-6.7	17.5	17.0	11.7	9.3
	Difference from baseline, ppt	*-22.9*	*-7.5*	*1.4*	*6.2*	*4.4*	*3.7*
Singapore	Baseline	6.8	6.7	2.0	2.8	3.2	3.1
	Debt crisis scenario	-11.0	-16.4	7.6	14.6	11.1	7.7
	Difference from baseline, ppt	*-17.8*	*-23.2*	*5.6*	*11.8*	*7.9*	*4.6*
Thailand	Baseline	-3.5	2.1	11.7	5.2	2.5	3.0
	Debt crisis scenario	-20.5	-20.5	20.6	17.0	11.1	9.2
	Difference from baseline, ppt	*-17.1*	*-22.6*	*8.9*	*11.8*	*8.6*	*6.2*
Vietnam	Baseline	-0.4	-1.2	7.3	6.0	2.3	2.4
	Debt crisis scenario	-19.2	-26.6	12.5	22.6	14.8	8.9
	Difference from baseline, ppt	*-18.9*	*-25.4*	*5.2*	*16.6*	*12.5*	*6.5*
		Short-term interest rate, money market, %					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
China	Baseline	3.7	3.5	3.8	4.3	4.8	5.3
	Debt crisis scenario	4.5	2.4	1.8	1.6	1.6	2.0
	Difference from baseline, ppt	*0.8*	*-1.1*	*-2.0*	*-2.7*	*-3.2*	*-3.3*
Hong Kong	Baseline	2.3	2.4	2.5	2.7	2.7	2.8
	Debt crisis scenario	2.6	1.0	0.7	0.6	0.5	1.4
	Difference from baseline, ppt	*0.3*	*-1.4*	*-1.8*	*-2.2*	*-2.2*	*-1.3*
Taiwan	Baseline	0.7	1.0	1.4	2.2	2.5	2.6
	Debt crisis scenario	1.2	0.5	0.3	1.2	1.5	1.7
	Difference from baseline, ppt	*0.4*	*-0.5*	*-1.2*	*-1.0*	*-1.0*	*-0.9*
Indonesia	Baseline	6.5	6.5	6.5	6.5	6.5	6.5
	Debt crisis scenario	7.6	2.6	2.2	2.1	2.3	3.4
	Difference from baseline, ppt	*1.2*	*-3.9*	*-4.3*	*-4.4*	*-4.2*	*-3.1*
Malaysia	Baseline	3.6	4.0	4.0	4.0	4.0	4.0
	Debt crisis scenario	4.2	2.3	1.3	1.2	1.3	1.5
	Difference from baseline, ppt	*0.6*	*-1.8*	*-2.7*	*-2.8*	*-2.8*	*-2.6*
Philippines	Baseline	4.9	4.7	4.6	4.6	4.6	4.6
	Debt crisis scenario	5.4	2.2	1.7	1.8	2.2	2.9
	Difference from baseline, ppt	*0.6*	*-2.5*	*-2.9*	*-2.8*	*-2.4*	*-1.7*
Singapore	Baseline	1.3	1.0	1.0	1.0	1.1	1.1
	Debt crisis scenario	2.0	0.6	0.3	0.3	0.5	1.0
	Difference from baseline, ppt	*0.7*	*-0.4*	*-0.7*	*-0.7*	*-0.6*	*-0.1*
Thailand	Baseline	2.0	2.4	2.6	3.0	3.2	3.3
	Debt crisis scenario	2.0	0.4	0.2	0.3	0.4	0.9
	Difference from baseline, ppt	*-0.0*	*-1.9*	*-2.4*	*-2.8*	*-2.8*	*-2.4*
Vietnam	Baseline	7.2	7.1	7.2	7.2	7.1	7.1
	Debt crisis scenario	7.6	3.7	3.6	3.6	3.6	3.8
	Difference from baseline, ppt	*0.4*	*-3.4*	*-3.6*	*-3.6*	*-3.5*	*-3.3*

Source: Moody's Analytics

Appendix 1: China Debt Crisis: China and Southeast Asia (Cont.)

		House price index, % change					
		2019	2020	2021	2022	2023	2024
China	Baseline	4.1	2.4	3.9	5.2	5.5	5.3
	Debt crisis scenario	-5.5	-25.8	-7.1	7.9	12.2	10.7
	Difference from baseline, ppt	*-9.6*	*-28.2*	*-11.0*	*2.8*	*6.7*	*5.5*
Hong Kong	Baseline	-6.4	-2.6	5.7	5.0	0.8	1.5
	Debt crisis scenario	-13.1	-21.9	-3.7	7.8	7.3	6.0
	Difference from baseline, ppt	*-6.7*	*-19.3*	*-9.4*	*2.8*	*6.5*	*4.5*
Indonesia	Baseline	4.9	6.6	6.2	6.7	6.6	6.6
	Debt crisis scenario	3.5	1.9	-0.1	-0.4	0.5	2.7
	Difference from baseline, ppt	*-1.4*	*-4.7*	*-6.3*	*-7.1*	*-6.1*	*-4.0*
Malaysia	Baseline	2.2	5.0	4.3	4.8	4.5	4.6
	Debt crisis scenario	-0.5	-0.2	-2.8	-3.4	0.7	4.3
	Difference from baseline, ppt	*-2.7*	*-5.3*	*-7.1*	*-8.2*	*-3.8*	*-0.3*
Philippines	Baseline	8.7	5.1	2.4	3.2	2.8	2.5
	Debt crisis scenario	6.0	5.7	-6.9	-2.4	1.6	2.6
	Difference from baseline, ppt	*-2.7*	*0.7*	*-9.3*	*-5.5*	*-1.2*	*0.1*
Singapore	Baseline	4.2	11.3	12.7	5.1	1.2	1.5
	Debt crisis scenario	1.3	-5.7	-9.9	-4.9	5.9	8.2
	Difference from baseline, ppt	*-2.9*	*-17.0*	*-22.7*	*-10.0*	*4.8*	*6.8*
Thailand	Baseline	0.3	2.2	2.9	3.0	2.6	2.8
	Debt crisis scenario	-2.5	-10.0	-7.0	0.1	3.9	5.7
	Difference from baseline, ppt	*-2.8*	*-12.3*	*-9.9*	*-3.0*	*1.3*	*2.9*
		USD exchange rate					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
China	Baseline	6.7	6.7	6.8	6.8	6.8	6.8
	Debt crisis scenario	7.0	7.0	7.0	7.0	7.0	7.0
	Difference from baseline, %	*3.4*	*-3.3*	*-3.0*	*-2.5*	*-2.5*	*-2.8*
Hong Kong	Baseline	7.9	7.9	7.9	7.9	7.9	7.9
	Debt crisis scenario	7.9	7.9	7.9	7.9	7.9	7.9
	Difference from baseline, %	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Taiwan	Baseline	30.7	30.6	30.8	30.9	31.0	31.1
	Debt crisis scenario	30.9	31.2	31.3	31.4	31.4	31.4
	Difference from baseline, %	*0.8*	*-1.9*	*-1.8*	*-1.5*	*-1.1*	*-0.8*
Indonesia	Baseline	14054.8	14619.3	14578.1	14677.9	14787.0	14825.7
	Debt crisis scenario	15936.2	19596.5	17392.4	15721.2	15758.0	15803.0
	Difference from baseline, %	*13.4*	*-34.0*	*-19.3*	*-7.1*	*-6.6*	*-6.6*
Malaysia	Baseline	4.1	4.1	4.1	4.1	4.1	4.0
	Debt crisis scenario	4.6	5.5	5.1	4.5	4.5	4.5
	Difference from baseline, %	*12.7*	*-32.6*	*-23.3*	*-10.2*	*-9.8*	*-11.6*
Philippines	Baseline	53.2	53.5	53.0	53.0	53.3	53.4
	Debt crisis scenario	56.6	60.1	57.3	55.2	54.7	54.5
	Difference from baseline, %	*6.5*	*-12.4*	*-8.1*	*-4.0*	*-2.6*	*-2.1*
Singapore	Baseline	1.4	1.4	1.4	1.4	1.4	1.4
	Debt crisis scenario	1.5	1.6	1.5	1.5	1.5	1.5
	Difference from baseline, %	*8.0*	*-15.0*	*-9.4*	*-6.6*	*-5.8*	*-5.8*
Thailand	Baseline	31.9	32.0	31.7	32.1	32.6	32.9
	Debt crisis scenario	34.8	36.5	34.8	34.1	34.1	34.1
	Difference from baseline, %	*9.2*	*-14.1*	*-9.9*	*-6.4*	*-4.5*	*-3.9*
Vietnam*	Baseline	23216.7	23339.1	23464.0	23591.6	23721.7	23854.5
	Debt crisis scenario	24605.5	26227.0	25400.0	24838.6	24476.7	24404.0
	Difference from baseline, %	*6.0*	*-12.4*	*-8.3*	*-5.3*	*-3.2*	*-2.3*

*Lending rate

Source: Moody's Analytics

Appendix 2: China Debt Crisis: U.S., Germany, Japan, South Korea

		Gross domestic product, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
U.S.	Baseline	2.3	1.6	2.2	2.6	2.1	2.1
	Debt crisis scenario	1.2	-1.4	2.6	4.0	2.3	1.6
	Difference from baseline, ppt	*-1.1*	*-3.0*	*0.4*	*1.4*	*0.2*	*-0.5*
Germany	Baseline	1.1	1.6	1.4	1.2	1.1	1.0
	Debt crisis scenario	-1.7	-4.0	1.2	2.6	2.3	2.0
	Difference from baseline, ppt	*-2.8*	*-5.7*	*-0.2*	*1.3*	*1.2*	*0.9*
Japan	Baseline	0.8	0.5	0.7	0.3	0.5	0.4
	Debt crisis scenario	-2.5	-7.1	-3.9	0.5	4.6	3.3
	Difference from baseline, ppt	*-3.3*	*-7.6*	*-4.6*	*0.2*	*4.2*	*3.0*
South Korea	Baseline	3.0	2.8	2.5	2.4	2.1	1.6
	Debt crisis scenario	0.2	-3.4	2.5	3.9	3.4	2.0
	Difference from baseline, ppt	*-2.8*	*-6.2*	*0.0*	*1.5*	*1.2*	*0.4*
		Unemployment rate, %					
		2019	2020	2021	2022	2023	2024
U.S.	Baseline	3.7	3.6	4.3	4.6	4.7	4.7
	Debt crisis scenario	4.5	7.1	7.8	7.2	7.0	7.2
	Difference from baseline, ppt	*0.9*	*3.5*	*3.5*	*2.5*	*2.3*	*2.5*
Germany	Baseline	5.0	5.1	5.2	5.4	5.7	5.9
	Debt crisis scenario	5.3	6.8	7.4	7.6	7.8	7.9
	Difference from baseline, ppt	*0.3*	*1.7*	*2.2*	*2.2*	*2.1*	*2.0*
Japan	Baseline	2.4	2.3	2.2	2.1	2.0	2.0
	Debt crisis scenario	3.0	4.6	5.4	5.0	4.3	3.6
	Difference from baseline, ppt	*0.6*	*2.3*	*3.2*	*3.0*	*2.3*	*1.6*
South Korea	Baseline	4.0	3.8	3.7	3.6	3.6	3.7
	Debt crisis scenario	4.4	5.5	5.6	5.2	4.9	4.9
	Difference from baseline, ppt	*3.0*	*4.6*	*5.4*	*5.0*	*4.3*	*3.6*
		Stock price index, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
U.S.	Baseline	1.1	-6.4	6.7	6.9	5.0	5.5
	Debt crisis scenario	-8.2	-20.8	2.8	8.9	8.9	8.1
	Difference from baseline, ppt	*-9.3*	*-14.4*	*-3.9*	*2.1*	*3.9*	*2.5*
Germany	Baseline	-3.9	-2.2	6.3	8.3	3.5	1.7
	Debt crisis scenario	-13.8	-16.9	0.3	6.5	9.0	7.9
	Difference from baseline, ppt	*-10.0*	*-14.7*	*-6.0*	*-1.8*	*5.5*	*6.2*
Japan	Baseline	0.9	-1.3	0.5	1.2	1.8	0.5
	Debt crisis scenario	-12.9	-27.9	-1.4	5.2	9.7	11.0
	Difference from baseline, ppt	*-13.9*	*-26.6*	*-1.9*	*4.0*	*7.9*	*10.5*
South Korea	Baseline	-4.0	0.1	8.5	4.0	3.2	2.8
	Debt crisis scenario	-14.8	-10.7	13.1	11.1	8.2	4.1
	Difference from baseline, ppt	*-10.8*	*-10.8*	*4.6*	*7.1*	*5.0*	*1.3*

Source: Moody's Analytics

Appendix 2: China Debt Crisis: U.S., Germany, Japan, South Korea (Cont.)

		Short-term interest rate, money market, %					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
U.S.	Baseline	2.8	3.0	3.1	3.4	3.4	3.5
	Debt crisis scenario	2.8	1.5	0.9	0.9	1.2	2.4
	Difference from baseline, ppt	*0.1*	*-1.5*	*-2.2*	*-2.6*	*-2.3*	*-1.1*
Germany	Baseline	-0.4	-0.2	0.1	0.4	0.8	1.3
	Debt crisis scenario	0.2	-0.2	-0.4	-0.4	-0.4	-0.3
	Difference from baseline, ppt	*0.6*	*0.0*	*-0.5*	*-0.8*	*-1.3*	*-1.6*
Japan	Baseline	0.1	0.1	0.1	0.2	0.2	0.4
	Debt crisis scenario	0.2	0.1	0.0	0.0	0.0	0.0
	Difference from baseline, ppt	*0.1*	*0.0*	*-0.1*	*-0.1*	*-0.2*	*-0.3*
South Korea	Baseline	1.7	2.0	2.4	3.2	3.3	3.3
	Debt crisis scenario	2.0	1.1	0.9	1.5	1.5	1.8
	Difference from baseline, ppt	*0.3*	*-0.9*	*-1.5*	*-1.7*	*-1.8*	*-1.5*
		House price index, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
U.S.	Baseline	3.5	2.1	2.4	2.5	3.5	4.7
	Debt crisis scenario	3.2	1.8	1.2	0.9	1.5	1.5
	Difference from baseline, ppt	*-0.3*	*-0.3*	*-1.3*	*-1.6*	*-2.0*	*-3.2*
Germany	Baseline	9.4	5.1	2.6	1.5	1.0	1.2
	Debt crisis scenario	8.8	2.2	0.2	0.3	0.8	1.1
	Difference from baseline, ppt	*-0.6*	*-2.9*	*-2.5*	*-1.2*	*-0.2*	*-0.1*
Japan	Baseline	2.3	3.2	1.6	1.5	1.1	1.0
	Debt crisis scenario	-1.2	-4.1	-6.6	-7.5	-8.6	-7.5
	Difference from baseline, ppt	*-3.5*	*-7.4*	*-8.2*	*-9.0*	*-9.7*	*-8.4*
South Korea	Baseline	1.3	0.8	0.7	0.7	1.2	1.4
	Debt crisis scenario	0.6	-1.6	-0.9	-0.0	0.5	0.1
	Difference from baseline, ppt	*-0.7*	*-2.4*	*-1.6*	*-0.7*	*-0.7*	*-1.3*
		Exchange rate					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
U.S. broad dollar index, nominal	Baseline	122.3	114.9	117.5	117.0	115.5	114.2
	Debt crisis scenario	125.5	126.4	127.0	120.3	117.4	116.0
	Difference from baseline, %	*2.6*	*10.1*	*8.1*	*2.8*	*1.6*	*1.6*
Euro-dollar exchange rate:	Baseline	1.1	1.3	1.2	1.2	1.2	1.3
USD per EUR	Debt crisis scenario	1.1	1.2	1.2	1.2	1.2	1.2
	Difference from baseline, %	*-1.8*	*5.5*	*4.0*	*4.1*	*2.4*	*2.4*
Japan	Baseline	112.0	113.5	112.6	110.6	110.2	109.3
USD exchange rate	Debt crisis scenario	106.1	98.9	96.5	95.4	97.4	97.8
	Difference from baseline, %	*-5.2*	*-12.9*	*-14.3*	*-13.7*	*-11.7*	*-10.5*
South Korea	Baseline	1115.5	1094.9	1092.9	1095.4	1095.5	1083.0
USD exchange rate	Debt crisis scenario	1145.5	1213.4	1155.5	1029.0	937.1	885.3
	Difference from baseline, %	*2.7*	*10.8*	*5.7*	*-6.1*	*-14.5*	*-18.3*

Source: Moody's Analytics

Appendix 3: China Debt Crisis: Latin America

		Gross domestic product, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Mexico	Baseline	1.5	2.5	2.9	3.2	3.3	3.4
	Debt crisis scenario	-0.3	-2.5	4.1	4.5	3.9	3.5
	Difference from baseline, ppt	*-1.8*	*-5.0*	*1.2*	*1.3*	*0.6*	*0.1*
Brazil	Baseline	2.0	2.8	3.2	3.3	3.2	2.9
	Debt crisis scenario	-0.6	-2.9	3.4	5.5	4.6	3.4
	Difference from baseline, ppt	*-2.6*	*-5.8*	*0.2*	*2.1*	*1.4*	*0.5*
Argentina	Baseline	-1.4	2.8	3.4	3.7	3.8	3.8
	Debt crisis scenario	-3.7	-2.4	4.4	4.8	3.9	3.8
	Difference from baseline, ppt	*-2.3*	*-5.1*	*1.0*	*1.1*	*0.1*	*0.0*
Chile	Baseline	3.3	3.2	3.3	3.1	3.0	3.0
	Debt crisis scenario	1.0	-1.7	2.9	4.7	4.2	3.3
	Difference from baseline, ppt	*-2.3*	*-4.9*	*-0.4*	*1.6*	*1.2*	*0.3*
Colombia	Baseline	3.4	3.5	3.6	3.8	3.9	3.9
	Debt crisis scenario	0.4	-2.8	4.5	4.3	4.0	3.9
	Difference from baseline, ppt	*-3.0*	*-6.2*	*1.0*	*0.4*	*0.1*	*0.0*
Peru	Baseline	3.8	3.6	3.9	3.8	3.8	3.8
	Debt crisis scenario	1.6	-1.1	4.4	5.8	4.8	4.4
	Difference from baseline, ppt	*-2.2*	*-4.7*	*0.5*	*2.0*	*1.0*	*0.6*
		Unemployment rate, %					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Mexico	Baseline	3.6	3.8	3.9	3.9	3.9	3.9
	Debt crisis scenario	3.9	4.9	4.7	4.4	4.2	4.1
	Difference from baseline, ppt	*0.3*	*1.1*	*0.9*	*0.5*	*0.3*	*0.2*
Brazil	Baseline	12.0	11.4	10.9	10.4	10.0	9.7
	Debt crisis scenario	12.8	14.8	14.8	13.6	12.6	11.9
	Difference from baseline, ppt	*0.8*	*3.4*	*3.8*	*3.1*	*2.6*	*2.2*
Argentina	Baseline	10.2	9.8	9.2	8.7	8.3	7.9
	Debt crisis scenario	12.7	18.5	17.7	14.9	12.9	11.3
	Difference from baseline, ppt	*2.5*	*8.8*	*8.5*	*6.2*	*4.6*	*3.4*
Chile	Baseline	7.2	7.2	6.9	6.8	6.6	6.6
	Debt crisis scenario	9.0	10.9	9.2	7.8	7.2	6.9
	Difference from baseline, ppt	*1.8*	*3.7*	*2.3*	*1.1*	*0.6*	*0.4*
Colombia	Baseline	10.3	10.0	9.5	9.1	8.7	8.4
	Debt crisis scenario	11.7	15.1	15.3	13.9	12.3	11.1
	Difference from baseline, ppt	*1.4*	*5.2*	*5.8*	*4.8*	*3.5*	*2.6*
Peru	Baseline	3.5	3.4	3.5	3.4	3.4	3.4
	Debt crisis scenario	3.6	3.6	3.5	3.4	3.4	3.4
	Difference from baseline, ppt	*0.1*	*0.2*	*0.1*	*-0.0*	*-0.0*	*-0.0*
		Stock price index, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Mexico	Baseline	-9.7	5.1	8.4	5.9	5.0	4.8
	Debt crisis scenario	-21.8	-6.0	9.8	11.6	11.4	9.1
	Difference from baseline, ppt	*-12.1*	*-11.1*	*1.4*	*5.7*	*6.4*	*4.2*
Brazil	Baseline	14.4	3.9	3.6	2.0	3.0	3.5
	Debt crisis scenario	-5.3	-14.3	8.8	12.3	12.0	9.0
	Difference from baseline, ppt	*-19.7*	*-18.2*	*5.2*	*10.3*	*9.0*	*5.5*
Argentina	Baseline	23.9	22.7	27.4	19.1	11.5	7.9
	Debt crisis scenario	-2.2	8.4	46.3	23.3	15.1	10.1
	Difference from baseline, ppt	*-26.1*	*-14.4*	*18.9*	*4.2*	*3.5*	*2.1*
Chile	Baseline	-5.8	4.7	7.1	4.4	3.5	3.2
	Debt crisis scenario	-14.6	-14.6	6.7	13.3	10.4	7.4
	Difference from baseline, ppt	*-8.8*	*-19.3*	*-0.4*	*8.9*	*7.0*	*4.2*
Colombia	Baseline	9.5	9.0	7.7	6.1	7.2	7.0
	Debt crisis scenario	-5.9	1.1	20.3	17.9	9.0	3.4
	Difference from baseline, ppt	*-15.4*	*-8.0*	*12.6*	*11.8*	*1.8*	*-3.7*
Peru	Baseline	10.3	2.1	2.7	3.3	4.5	5.1
	Debt crisis scenario	-12.4	-30.8	6.7	25.1	20.3	12.7
	Difference from baseline, ppt	*-22.6*	*-32.9*	*3.9*	*21.8*	*15.7*	*7.6*

Source: Moody's Analytics

Appendix 3: China Debt Crisis: Latin America (Cont.)

		Short-term interest rate, money market, %					
		2019	2020	2021	2022	2023	2024
Mexico	Baseline	8.3	6.0	5.5	5.5	5.5	5.5
	Debt crisis scenario	8.9	5.9	5.4	5.4	5.5	5.5
	Difference from baseline, ppt	*0.6*	*-0.1*	*-0.0*	*-0.0*	*-0.0*	*-0.0*
Brazil	Baseline	6.4	6.9	7.5	7.3	7.2	7.2
	Debt crisis scenario	8.1	6.6	7.4	7.2	7.1	7.1
	Difference from baseline, ppt	*1.7*	*-0.3*	*-0.1*	*-0.1*	*-0.1*	*-0.0*
Argentina	Baseline	56.1	47.9	35.1	25.7	18.7	14.1
	Debt crisis scenario	69.9	65.1	27.6	19.2	14.3	10.9
	Difference from baseline, ppt	*13.8*	*17.2*	*-7.5*	*-6.5*	*-4.4*	*-3.2*
Chile	Baseline	3.0	3.5	3.6	4.0	4.1	4.1
	Debt crisis scenario	3.4	2.4	2.5	3.0	3.7	3.9
	Difference from baseline, ppt	*0.4*	*-1.1*	*-1.1*	*-1.1*	*-0.5*	*-0.2*
Colombia	Baseline	4.3	4.8	5.0	5.3	5.2	5.0
	Debt crisis scenario	5.8	5.6	4.2	5.1	5.2	5.0
	Difference from baseline, ppt	*1.5*	*0.8*	*-0.8*	*-0.1*	*-0.1*	*-0.0*
Peru	Baseline	2.9	3.2	3.3	3.8	4.1	4.1
	Debt crisis scenario	3.4	1.9	1.8	2.2	3.6	4.1
	Difference from baseline, ppt	*0.5*	*-1.3*	*-1.5*	*-1.6*	*-0.5*	*-0.0*
		House price index, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Mexico	Baseline	6.9	7.0	6.7	6.3	5.8	5.3
	Debt crisis scenario	7.4	5.5	5.9	5.9	5.6	5.2
	Difference from baseline, ppt	*0.5*	*-1.4*	*-0.8*	*-0.4*	*-0.2*	*-0.2*
Brazil	Baseline	3.9	3.4	3.8	4.1	4.2	4.2
	Debt crisis scenario	6.1	1.2	3.6	4.3	4.4	4.4
	Difference from baseline, ppt	*2.2*	*-2.2*	*-0.2*	*0.2*	*0.2*	*0.1*
Argentina	Baseline	37.7	17.2	11.2	6.8	5.2	4.3
	Debt crisis scenario	40.3	18.6	-1.7	-5.8	-3.7	-1.4
	Difference from baseline, ppt	*2.6*	*1.4*	*-12.9*	*-12.6*	*-8.8*	*-5.7*
Chile	Baseline	2.8	4.1	3.9	3.5	3.3	3.4
	Debt crisis scenario	2.6	-0.3	3.7	4.6	4.0	3.4
	Difference from baseline, ppt	*-0.1*	*-4.5*	*-0.3*	*1.2*	*0.7*	*0.0*
Colombia	Baseline	8.6	7.5	5.5	5.1	6.1	7.5
	Debt crisis scenario	9.6	5.8	-4.1	-13.6	-16.3	-13.3
	Difference from baseline, ppt	*1.0*	*-1.7*	*-9.6*	*-18.7*	*-22.4*	*-20.8*
Peru	Baseline	13.8	8.6	5.9	5.3	5.7	6.4
	Debt crisis scenario	13.9	12.3	8.8	5.5	5.0	4.5
	Difference from baseline, ppt	*0.1*	*3.6*	*2.8*	*0.3*	*-0.7*	*-1.9*
		USD exchange rate					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Mexico	Baseline	19.4	19.8	20.1	20.4	20.5	20.7
	Debt crisis scenario	20.6	20.0	20.2	20.4	20.6	20.7
	Difference from baseline, %	*6.0*	*1.0*	*0.5*	*0.2*	*0.3*	*0.2*
Brazil	Baseline	3.8	3.8	3.7	3.8	3.8	3.9
	Debt crisis scenario	4.5	3.9	3.9	3.9	3.9	3.9
	Difference from baseline, %	*19.1*	*4.8*	*4.0*	*2.6*	*1.3*	*0.3*
Argentina	Baseline	42.5	49.9	55.7	59.9	62.2	62.3
	Debt crisis scenario	46.0	66.0	69.2	66.7	64.5	62.3
	Difference from baseline, %	*8.4*	*32.2*	*24.2*	*11.5*	*3.7*	*-0.0*
Chile	Baseline	685.3	681.1	682.6	684.1	685.6	687.0
	Debt crisis scenario	708.5	726.2	707.0	698.5	694.0	694.4
	Difference from baseline, %	*3.4*	*6.6*	*3.6*	*2.1*	*1.2*	*1.1*
Colombia	Baseline	3133.8	3152.6	3202.6	3242.9	3281.9	3321.4
	Debt crisis scenario	3284.0	3592.9	3698.8	3629.5	3570.9	3533.8
	Difference from baseline, %	*4.8*	*14.0*	*15.5*	*11.9*	*8.8*	*6.4*
Peru	Baseline	3.3	3.3	3.3	3.3	3.3	3.3
	Debt crisis scenario	3.4	3.4	3.4	3.2	3.2	3.1
	Difference from baseline, %	*1.2*	*3.9*	*1.8*	*-2.4*	*-3.9*	*-5.1*

Source: Moody's Analytics

Appendix 4: China Debt Crisis: Select Emerging Markets

		2019	2020	2021	2022	2023	2024
		Gross domestic product, % change					
Russia	Baseline	0.8	1.6	1.5	1.1	1.6	1.3
	Debt crisis scenario	-2.4	-2.5	2.4	1.9	1.4	1.2
	Difference from baseline, ppt	*-3.2*	*-4.1*	*1.0*	*0.9*	*-0.3*	*-0.2*
Turkey	Baseline	-1.6	5.1	4.5	4.2	3.6	3.2
	Debt crisis scenario	-3.4	1.0	4.2	5.0	4.7	3.7
	Difference from baseline, ppt	*-1.8*	*-4.1*	*-0.3*	*0.9*	*1.1*	*0.6*
India	Baseline	7.5	7.1	7.0	6.2	6.2	6.4
	Debt crisis scenario	4.0	-0.2	3.7	7.0	6.9	8.1
	Difference from baseline, ppt	*-3.5*	*-7.3*	*-3.3*	*0.8*	*0.7*	*1.7*
Nigeria	Baseline	2.2	2.5	2.4	3.1	3.0	3.1
	Debt crisis scenario	1.4	-2.9	-2.8	1.6	4.2	5.4
	Difference from baseline, ppt	*-0.8*	*-5.4*	*-5.2*	*-1.5*	*1.2*	*2.2*
South Africa	Baseline	1.6	2.0	2.0	2.1	2.3	2.3
	Debt crisis scenario	-0.7	-1.3	2.3	2.9	2.7	2.3
	Difference from baseline, ppt	*-2.4*	*-3.2*	*0.3*	*0.8*	*0.5*	*0.0*
		Unemployment rate, %					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Russia	Baseline	6.0	6.2	6.1	6.0	5.9	5.9
	Debt crisis scenario	6.4	7.2	6.9	6.6	6.6	6.6
	Difference from baseline, ppt	*0.4*	*1.0*	*0.8*	*0.7*	*0.7*	*0.7*
Turkey	Baseline	12.7	11.9	11.2	11.1	10.8	10.5
	Debt crisis scenario	12.8	12.6	12.1	11.8	11.4	10.9
	Difference from baseline, ppt	*0.1*	*0.7*	*0.9*	*0.8*	*0.6*	*0.4*
India	Baseline	3.6	3.7	3.7	3.7	3.7	3.7
	Debt crisis scenario	4.2	5.9	6.5	6.4	5.7	5.1
	Difference from baseline, ppt	*0.6*	*2.2*	*2.8*	*2.6*	*2.0*	*1.4*
Nigeria	Baseline	14.3	13.9	13.1	12.1	11.2	10.3
	Debt crisis scenario	14.6	17.0	19.7	20.8	20.4	19.0
	Difference from baseline, ppt	*0.3*	*3.1*	*6.6*	*8.7*	*9.2*	*8.6*
South Africa	Baseline	26.0	25.3	25.1	24.8	24.5	24.1
	Debt crisis scenario	26.9	27.1	26.2	25.4	24.9	24.7
	Difference from baseline, ppt	*0.9*	*1.8*	*1.1*	*0.6*	*0.5*	*0.6*
		Stock price index, % change					
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Russia	Baseline	8.1	5.3	15.1	14.8	5.6	4.3
	Debt crisis scenario	-23.4	-37.5	24.7	32.9	23.4	17.4
	Difference from baseline, ppt	*-31.5*	*-42.7*	*9.7*	*18.1*	*17.8*	*13.2*
Turkey	Baseline	18.6	13.4	13.0	10.4	7.0	5.8
	Debt crisis scenario	-1.3	11.0	20.1	14.5	11.0	9.1
	Difference from baseline, ppt	*-19.9*	*-2.4*	*7.1*	*4.1*	*4.0*	*3.4*
India	Baseline	8.0	-0.7	3.4	2.7	1.8	2.5
	Debt crisis scenario	-5.5	-14.9	6.1	10.5	7.0	3.0
	Difference from baseline, ppt	*-13.4*	*-14.1*	*2.7*	*7.8*	*5.3*	*0.5*
Nigeria	Baseline	8.0	-0.7	3.4	2.7	1.8	2.5
	Debt crisis scenario	-5.5	-14.9	6.1	10.5	7.0	3.0
	Difference from baseline, ppt	*-13.4*	*-14.1*	*2.7*	*7.8*	*5.3*	*0.5*
South Africa	Baseline	-5.4	6.7	8.3	10.5	6.9	7.6
	Debt crisis scenario	-20.7	-26.6	5.9	19.2	19.0	18.3
	Difference from baseline, ppt	*-15.3*	*-33.4*	*-2.4*	*8.7*	*12.2*	*10.7*

Source: Moody's Analytics

Appendix 4: China Debt Crisis: Select Emerging Markets (Cont.)

		2019	2020	2021	2022	2023	2024
	Short-term interest rate, money market, %						
Russia	Baseline	8.7	7.4	6.8	5.9	5.6	5.5
	Debt crisis scenario	10.7	10.2	7.9	6.0	5.5	5.4
	Difference from baseline, ppt	*2.0*	*2.8*	*1.1*	*0.1*	*-0.1*	*-0.1*
Turkey	Baseline	20.0	13.7	12.1	10.7	8.6	6.5
	Debt crisis scenario	22.1	9.9	8.1	8.4	7.6	5.9
	Difference from baseline, ppt	*2.1*	*-3.8*	*-3.9*	*-2.4*	*-1.0*	*-0.6*
India	Baseline	6.1	6.0	6.0	6.2	6.2	6.1
	Debt crisis scenario	14.5	5.3	4.3	4.3	4.3	5.1
	Difference from baseline, ppt	*8.3*	*-0.7*	*-1.8*	*-2.0*	*-1.9*	*-1.1*
Nigeria*	Baseline	18.3	18.9	18.2	17.5	17.1	16.7
	Debt crisis scenario	18.8	20.7	19.8	19.1	18.4	17.7
	Difference from baseline, ppt	*0.5*	*1.9*	*1.5*	*1.6*	*1.3*	*1.0*
South Africa	Baseline	10.3	10.4	10.5	10.5	10.5	10.5
	Debt crisis scenario	11.5	10.9	10.6	10.6	10.6	10.6
	Difference from baseline, ppt	*1.2*	*0.5*	*0.1*	*0.1*	*0.1*	*0.1*
	House price index, % change						
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Russia	Baseline	1.1	1.5	2.5	1.9	1.4	1.3
	Debt crisis scenario	1.8	-3.8	-5.0	-2.0	0.6	1.7
	Difference from baseline, ppt	*0.7*	*-5.2*	*-7.5*	*-3.9*	*-0.8*	*0.4*
Turkey	Baseline	5.7	10.3	11.9	9.1	8.5	8.6
	Debt crisis scenario	5.1	7.5	11.9	10.0	7.0	5.8
	Difference from baseline, ppt	*-0.6*	*-2.8*	*0.1*	*0.9*	*-1.5*	*-2.8*
South Africa	Baseline	6.3	5.9	6.5	7.5	7.2	7.1
	Debt crisis scenario	3.1	5.0	10.2	7.8	7.0	7.4
	Difference from baseline, ppt	*-3.3*	*-0.9*	*3.7*	*0.3*	*-0.1*	*0.3*
	USD exchange rate						
		2019	**2020**	**2021**	**2022**	**2023**	**2024**
Russia	Baseline	66.8	59.0	60.5	61.2	60.4	59.6
	Debt crisis scenario	70.2	66.8	65.4	62.0	60.0	59.2
	Difference from baseline, %	*5.0*	*13.1*	*8.1*	*1.3*	*-0.8*	*-0.7*
Turkey	Baseline	5.7	5.8	6.0	6.1	6.1	6.1
	Debt crisis scenario	5.8	6.2	6.1	6.2	6.2	6.3
	Difference from baseline, %	*1.7*	*5.7*	*2.5*	*2.3*	*2.3*	*2.3*
India	Baseline	70.1	70.0	70.1	69.7	69.0	68.7
	Debt crisis scenario	78.6	87.6	81.0	80.5	79.8	79.4
	Difference from baseline, %	*12.0*	*25.2*	*15.5*	*15.5*	*15.6*	*15.7*
Nigeria	Baseline	306.8	306.9	307.7	309.0	311.0	315.5
	Debt crisis scenario	337.5	365.7	355.5	346.3	343.3	339.4
	Difference from baseline, %	*10.0*	*19.2*	*15.5*	*12.1*	*10.4*	*7.6*
South Africa	Baseline	13.9	13.4	13.3	13.2	13.2	13.1
	Debt crisis scenario	14.6	15.6	15.3	14.5	14.0	13.7
	Difference from baseline, %	*4.9*	*16.4*	*14.6*	*9.6*	*6.0*	*4.3*

*Lending rate

Source: Moody's Analytics

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