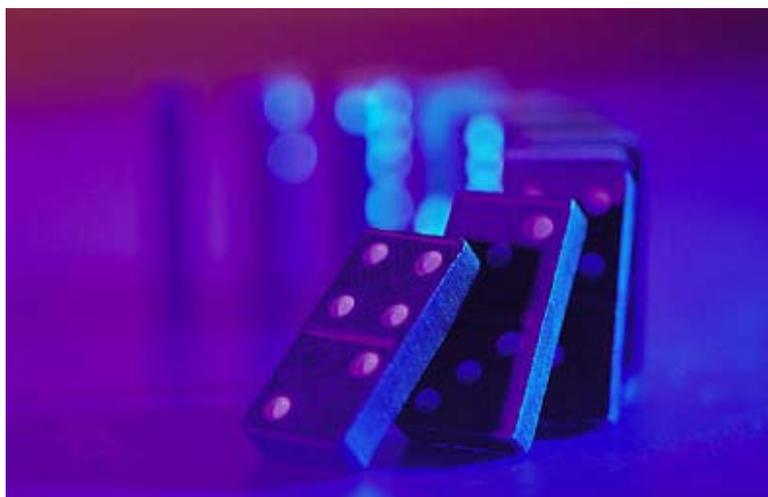


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**ECONOMICS DEPARTMENT POLICY NOTE No. 13**

# **INTERNATIONAL CAPITAL MOBILITY: STRUCTURAL POLICIES TO REDUCE FINANCIAL FRAGILITY**



Economics Department  
Organisation for Economic Co-operation and Development

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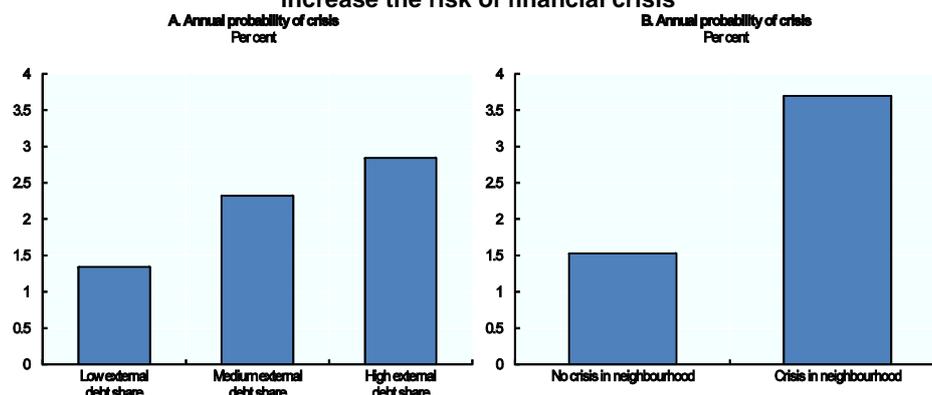
## INTERNATIONAL CAPITAL MOBILITY: STRUCTURAL POLICIES TO REDUCE FINANCIAL FRAGILITY

- Many OECD countries entered the recent global crisis with a financial account structure that made them particularly vulnerable to a financial shock.
- A country's financial account structure is more conducive to financial fragility when the share of debt – especially short-term bank debt – in total external liabilities is relatively high or when a large proportion of the latter is denominated in foreign currencies.
- Based on these and other financial account related risk factors in 2007, the banking sector of major non-OECD countries was in better conditions to withstand the recent financial crisis than that of the majority of OECD countries.
- Removing the tax bias that, in many countries, favours debt finance over equity finance would contribute to reduce financial fragility.
- The risk of financial crisis would also be diminished by the removal of policy-induced distortions favouring mortgage debt and the build-up of housing bubbles.
- Targeted controls on capital inflows from credit operations can help mitigate the impact of financial contagion by shifting the structure of the financial account.
- A better prudential framework, in particular tougher banking supervision, stricter information disclosure rules, or more stringent capital requirements reduces countries' financial crisis risk, as do macroprudential regulations preventing excessive credit growth.
- Further highlighting the potential importance of stringent regulation for financial stability, countries where the banking sector is less leveraged and relies more on deposits for funding have been less affected by financial contagion.

### **Policies can affect financial stability through different channels**

1. The recent financial crisis has underlined the need for reducing financial fragility, both by reducing the risk of financial crises occurring and by limiting their spreading and destructive impact when they occur. Financial crises have been more frequent in countries where debt represents a higher share of gross external liabilities (*i.e.* external debt, equity and FDI) and in countries exposed to crisis in their neighborhood (Figure 1). This note examines what part *structural policies* can play in reducing financial fragility via their influence on international capital flows, and more precisely via their impact on countries' liability structure and the risk of contagion. This role of structural policies comes over and above the effect of macroeconomic imbalances, such as misaligned exchange rates or fiscally unsustainable positions.

**Figure 1. External liabilities in the form of debt and crises in neighbouring countries increase the risk of financial crisis**



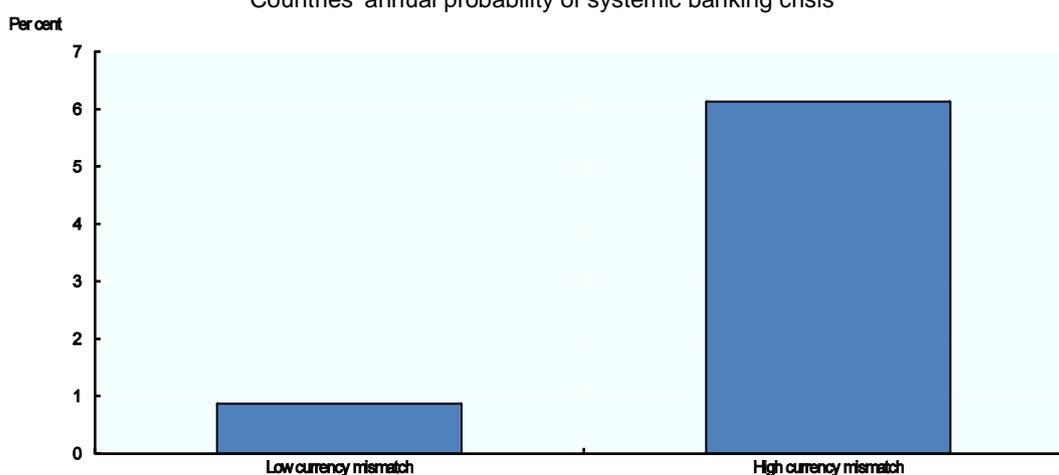
Note: Simple descriptive statistics based on data covering 184 countries from 1970 to 2007 for gross external debt as a percentage of total external liabilities and episodes of systemic banking crisis taken from Laeven and Valencia (2010). Low, medium and high external debt is defined based on the 33rd and 66th percentiles of the external debt to external liabilities ratio for each year. Systemic banking crises are defined based on both significant signs of financial distress in the banking system and policy interventions in response to such distress. Crisis in neighbourhood refers to the geographically closest 5 neighbouring countries, and indicates whether any of them experienced a crisis in the previous period.

Source: OECD calculations.

### Financial account structure strongly influences countries' financial vulnerability

2. New empirical analysis covering OECD and emerging economies over the past four decades finds that the structure of a country's external liabilities, more than the overall level, is a key determinant of the vulnerability to financial crises. The analysis shows more specifically that factors which increase crisis risk include a bias in gross external liabilities towards debt, in particular bank debt, and currency mismatch, *i.e.* a disproportionate share of foreign currency denominated external liabilities (Figure 2). An additional factor of risk is shorter banking debt maturities. While larger reserve holdings reduce the probability of crises, the size of external assets (excluding reserves) or liabilities as a share of GDP appears not to affect the probability of financial crises, the exception being when this size is very large. In this case – which concerns only few OECD countries – large external liabilities raise, and large external assets reduce the probability of a crisis.

**Figure 2. Large currency mismatch increases crisis risk**  
Countries' annual probability of systemic banking crisis

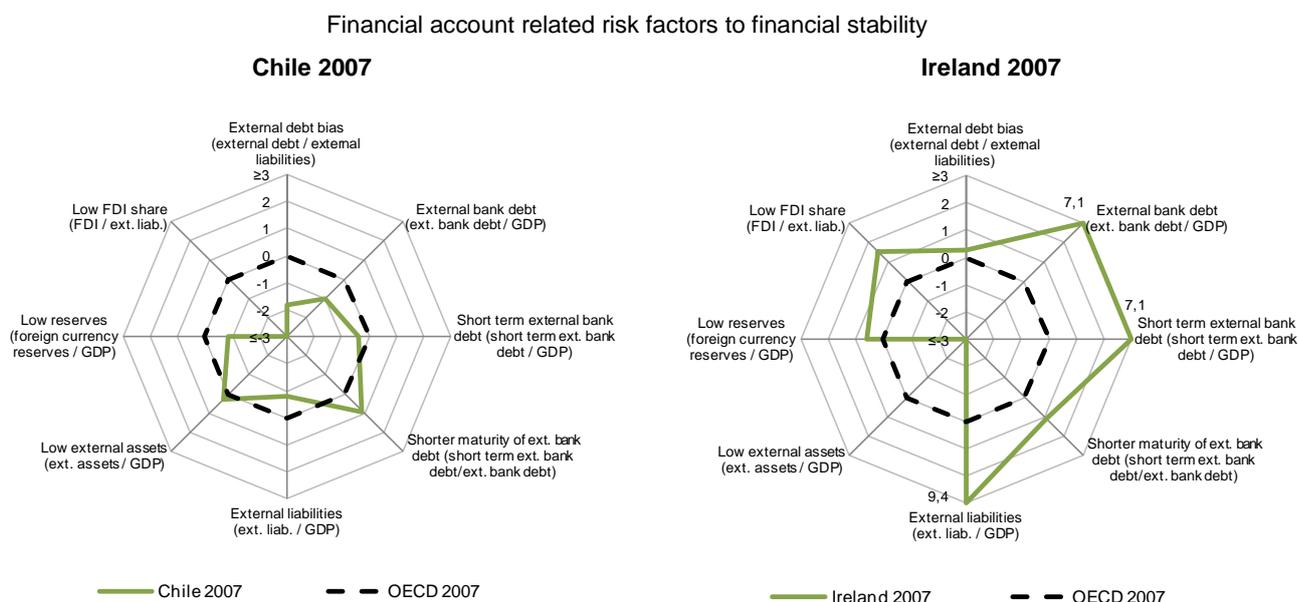


Note: Bars represent, for two different levels of currency mismatch, the annual probability of suffering a systemic banking crisis. OECD countries are split into two equally-sized groups based on the size of their currency mismatch. Low currency mismatch is defined as the average across the low currency mismatch group, with high currency mismatch being defined correspondingly. For example, the currency mismatch of Japan (Latvia) is close to the average of the low (high) currency mismatch group.

Source: OECD calculations based on Ahrend and Goujard (2012a).

3. Figures 3 and 4 show the position of selected countries along various dimensions of their financial account structure in 2007. Larger values indicate a financial account structure that is riskier compared with the OECD median. The diamonds show for instance that Chile had a safer financial account structure than most other OECD countries prior to the global financial crisis – a typical feature for commodity-exporting countries (Figure 3, left panel). In contrast, Ireland had a riskier financial account structure – a typical feature for countries with a large financial sector (right panel). Higher fragility resulted from increased leverage of the external balance sheet, which occurred through increased cross-border bank debt, often of short maturity. China had a pre-crisis financial account structure that appeared fairly safe – a typical feature for countries that were running large current account surpluses prior to the crisis (Figure 4, left panel). On the contrary, the 2007 financial account structure of Greece appeared relatively risky – a typical feature for countries with sizeable current account deficits in the years preceding the global financial crisis (right panel).

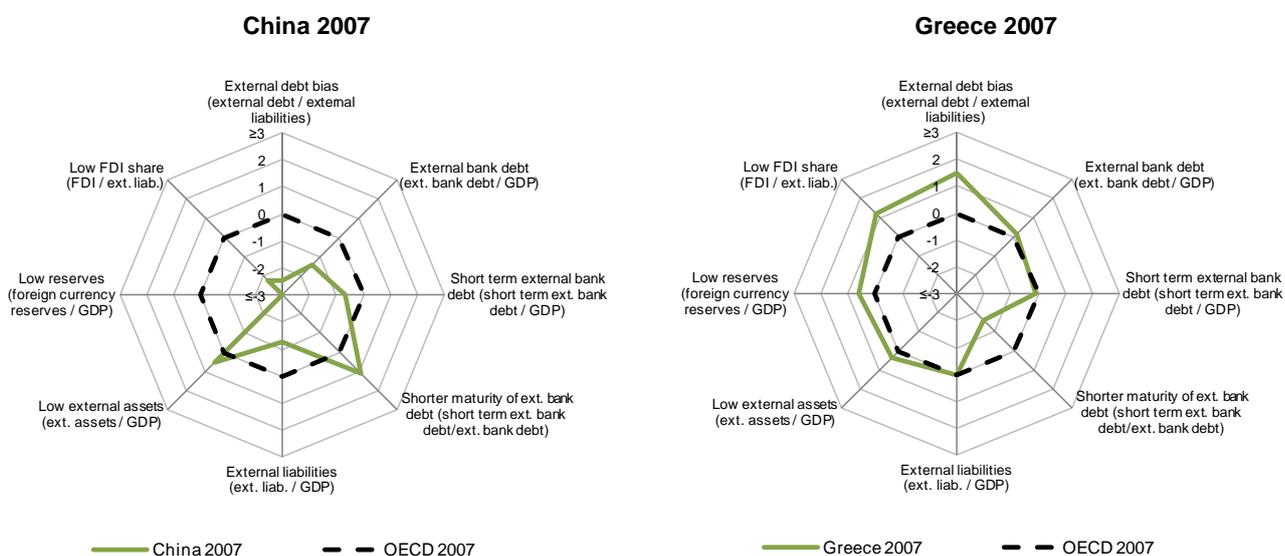
**Figure 3. In 2007, commodity-exporting countries generally had a safer, and countries with a large financial sector, a riskier financial account structure than the typical OECD country**



Note: For each variable, a larger value indicates a riskier financial account position. Indicators are measured in multiples of the standard deviation across countries for the variable in question. Each variable is presented for the country in question, compared to the OECD median (which is normalised to zero).

Source: Ahrend and Valdivia (2012).

**Figure 4. Countries with large current account surpluses prior to 2007 generally had a safer, and countries with large current account deficits a riskier financial account structure than the typical OECD country**  
Financial account related risk factors to financial stability

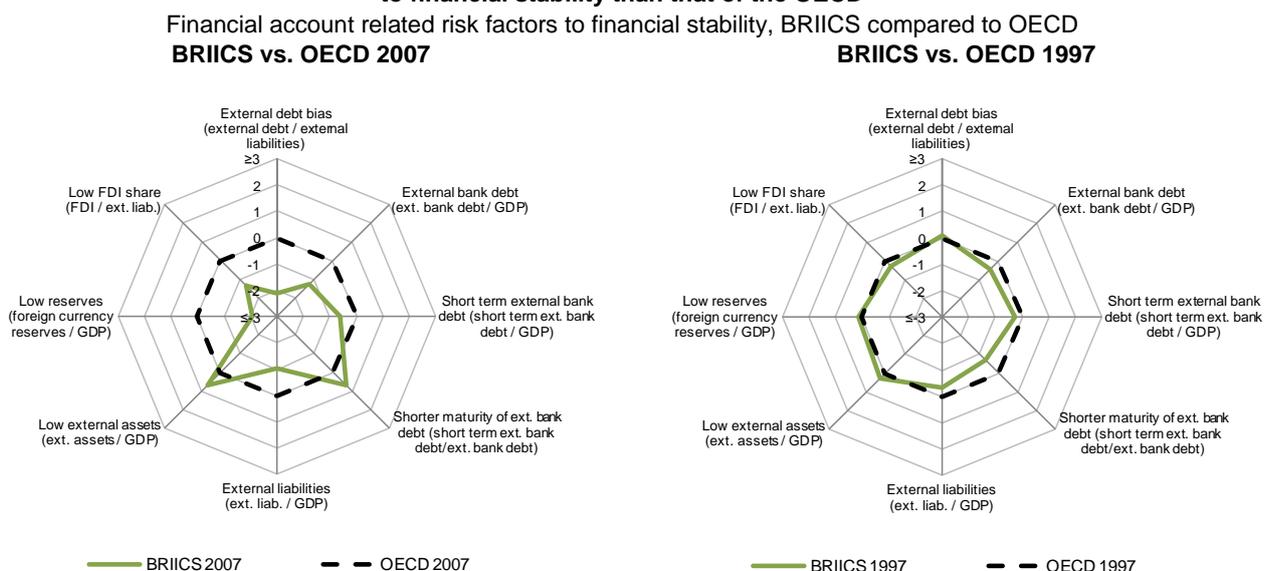


Note: For each variable, a larger value indicates a riskier financial account position. Indicators are measured in multiples of the standard deviation across countries for the variable in question. Each variable is presented for the country in question, compared to the OECD median (which is normalised to zero).

Source: Ahrend and Valdivia (2012).

4. More generally, prior to the recent global financial crisis, the BRIICS had a much safer financial account structure than OECD countries along most dimensions, the main exception being that OECD countries held larger external assets (as a share of GDP) than the BRIICS (Figure 5). This is in sharp contrast with the situation in 1997, when OECD countries still had a financial account structure similar to that of the BRIICS.

**Figure 5. In 2007, the financial account structure of the BRIICS was more conducive to financial stability than that of the OECD**

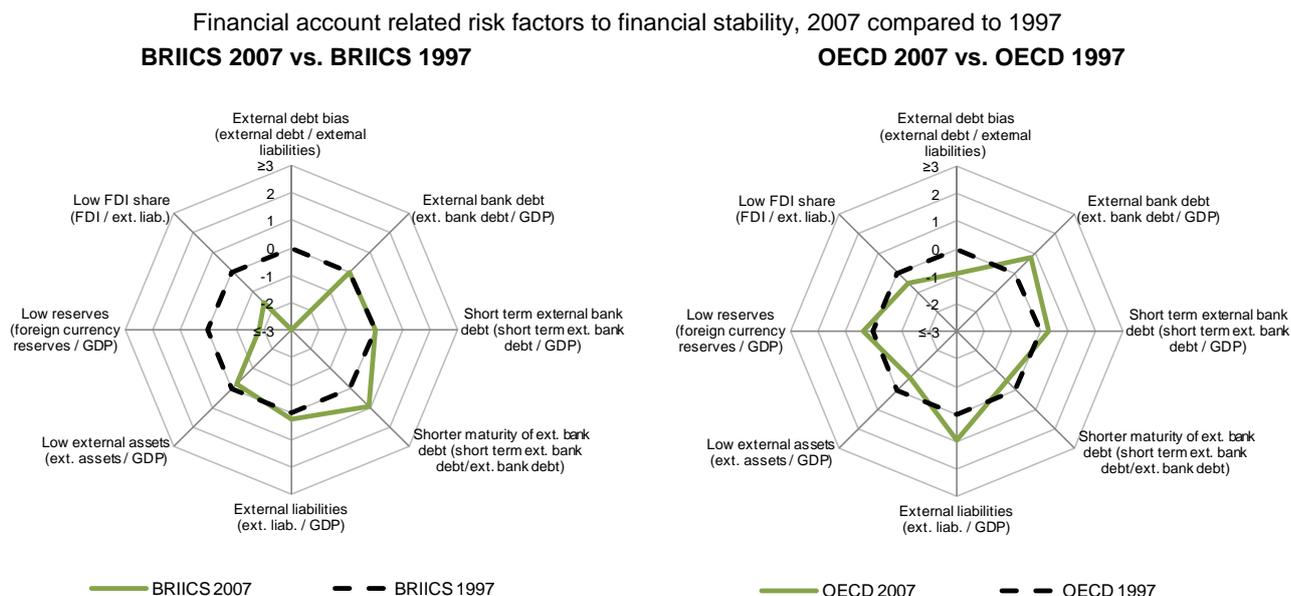


Note: Each variable is presented for the BRIICS median country, compared to the OECD median country (which is normalised to zero). For each variable, a larger value indicates a riskier financial account position. Indicators are measured in multiples of the standard deviation across countries for the variable in question.

Source: Ahrend and Valdivia (2012).

5. The change came in part from major efforts on the side of the BRIICS in the decade prior to the recent crisis to reduce their financial fragility, likely driven in part by the experience of the Asian and other ensuing emerging-market crises. Most notable changes were a shift in external liabilities from debt towards FDI and an increase in external assets, especially foreign currency reserves (Figure 6). Over the same period, the financial system in OECD countries became more fragile along several dimensions, including through leveraging up of their external balance sheet and a building up of bank debt which, moreover, was often of short maturity.

**Figure 6. In the decade prior to the recent financial crisis, financial account structure became more conducive to financial stability in the BRIICS while it became riskier in the OECD**



Note: Each variable is presented for the BRIICS (respectively OECD) median country in 2007, compared to the situation in 1997 (which is normalised to zero). For each variable, a larger value indicates a riskier financial account position. Indicators are measured in multiples of the standard deviation across countries for the variable in question.

Source: Ahrend and Valdivia (2012).

### Structural policies have affected financial stability mainly via financial account structure and financial vulnerability to contagion

6. Different groups of policies seem to work through different channels: Financial-sector related policies mainly seem to have contributed to financial stability through their impact on contagion risk, whereas structural policies not directly related to the financial sector have mainly affected financial stability through their impact on financial account structure.

### Distorted tax systems contribute to financial fragility

#### *Favouring debt over equity finance increases vulnerability*

7. Tax systems can strongly contribute to financial vulnerability by favouring debt over equity finance. Many countries grant corporations larger tax deductibility of interest payments than of dividends or capital gains which would be expected to bias corporate financing towards debt, including towards external debt. New analysis indicates that tax systems which favour debt over equity finance have indeed biased a country's external financing towards debt, thereby increasing crisis risk. This increase in financial fragility comes over and above corresponding tax-policy induced increases in bank leverage, with overly strong leverage in the financial sector generally being considered an important factor behind the 2007-09 global financial crisis.

### ***Tax treaties appear to increase FDI, thereby reducing crisis risk***

8. Firms may invest more in countries with which their home countries have tax treaties, as they then no longer face the cost of double taxation. Bilateral tax treaties have indeed been conducive to FDI while having no effect on other types of investment, with the resulting change in the structure of the financial account increasing financial stability.

### **Macprudential and structural policies can reduce financial fragility by curbing housing and credit booms**

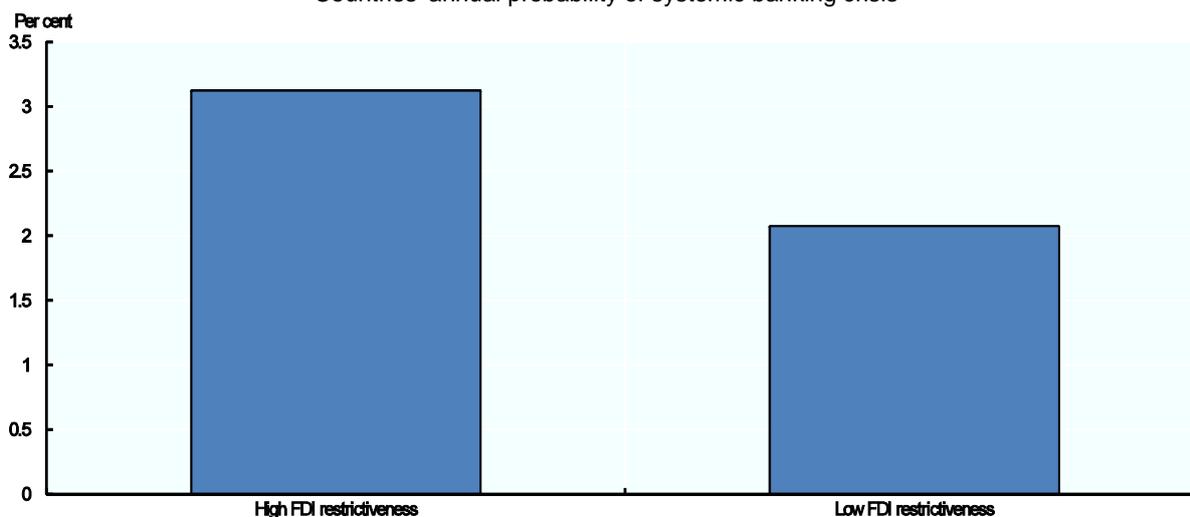
9. Strong credit growth to the non-financial sector has increased the external debt share and therewith the probability of a systemic banking crisis. Housing-related policies can also affect financial stability. For example, owner-occupied housing is commonly subject to special tax treatment such as mortgage-interest relief without parallel taxation of imputed rents, which has increased both household leverage and house price volatility. Aside from the impact of stronger volatility, new analysis has found fast-rising housing prices to have increased the bias towards external debt. For instance, a doubling of real house prices in the run up to the global financial crisis – which was observed in many countries – would have led to a re than threefold increase in a country's annual likelihood of suffering a banking crisis (from 2½ to 8½ per cent).

### **Restrictive regulations on FDI and in product markets contribute to financial risk**

10. Regulatory burdens on foreign direct investment, as well as strict product market regulation in general, contribute to financial risk. More precisely, higher regulatory barriers to FDI and equity investment, as measured by the OECD FDI Restrictiveness Index, result in an increased bias of external liabilities towards debt, driven both by increases in external debt and decreases in equity and FDI liabilities. Even though effects are less pronounced, stricter product market regulation, as measured by the OECD PMR indicator, also increases the bias towards external debt by orienting external financing away from equity and FDI. Countries with a high level of overall FDI restrictiveness (*e.g.* Turkey) have had an exposure to crisis risk higher by roughly one percentage points compared to countries with a lower level of FDI restrictiveness (*e.g.* France) – again sizeable given the average annual probability of a banking crisis of around 2½ per cent (Figure 7).

**Figure 7. Restrictive regulations on FDI increase crisis risk**

Countries' annual probability of systemic banking crisis



Note: Bars represent, for two different levels of FDI restrictiveness, the annual probability of suffering a systemic banking crisis. OECD countries are split into two equally-sized groups based on their levels of FDI restrictiveness. High FDI restrictiveness is defined as the average across the high FDI restrictiveness group, with low FDI restrictiveness being defined correspondingly.

Source: OECD calculations based on Ahrend and Goujard (2012a).

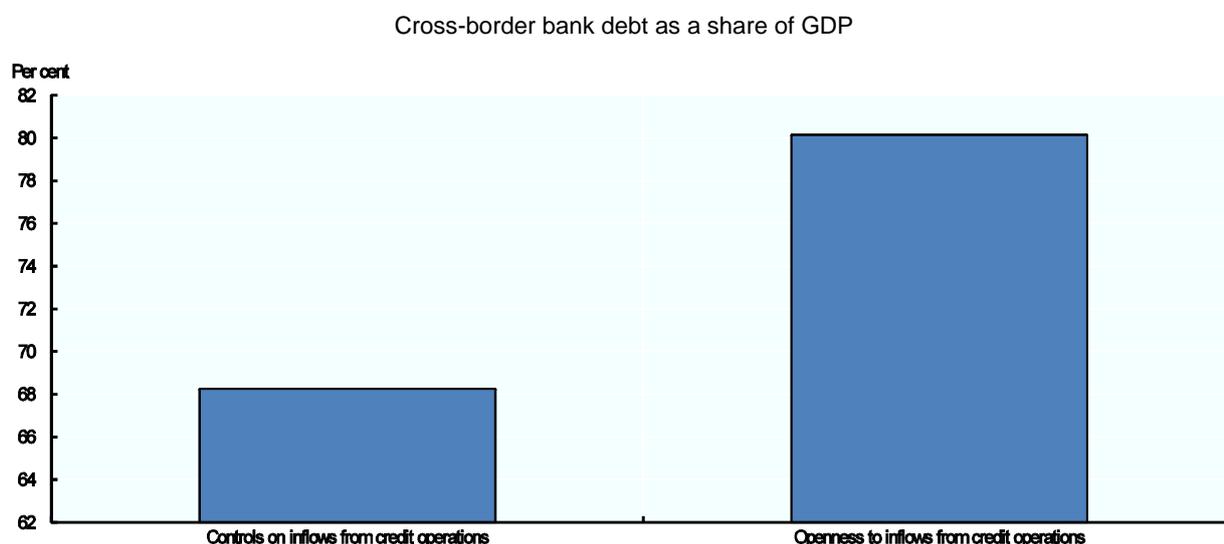
## Targeted capital controls affect crisis risk mainly via the financial account

11. OECD analysis finds strong evidence that differentiated capital controls can influence the structure of external liabilities, and thereby have a sizeable impact on financial stability. For instance, inflow restrictions on credit operations have reduced external debt and (short-term) cross-border bank debt, thereby lowering financial crisis risk. By contrast, inflow restrictions on FDI and equity investments have increased crisis risk by raising inflows of debt and bank debt. For example, having inflow restrictions on credit operations (*e.g.* Korea) over a two-year horizon results in cross-border bank debt as a share of GDP being 13 percentage points lower compared with a situation of not having them, as is the case in the large majority of OECD countries (Figure 8). Moreover, lower capital account openness to FDI and equity inflows appears to significantly raise currency mismatch, presumably by inducing a bias in capital inflows towards forms that are denominated in foreign currency, and countries open to inflows from credit operations have been more vulnerable to financial contagion.

### *In certain instances, capital controls may be superior to macroprudential regulations*

12. Some capital controls – such as restrictions on credit operations – that appear to be beneficial for financial stability may come at a price to economic efficiency, *e.g.* by distorting competition among banks based on their country of origin. It has therefore been suggested that macroprudential policies would be generally preferable to capital controls. This may especially apply to domestic factors: it would *e.g.* probably be preferable to address domestically-driven bubbles by macroprudential regulations rather than by capital controls as the former can be applied more precisely to the problem area. However, it seems more doubtful that macroprudential tools have been generally superior to capital inflow controls in mitigating contagion and capital flows driven by external factors. Well-designed differentiated capital controls could potentially influence the composition of such flows in a way that enhances financial stability.

**Figure 8. Lower inflow restrictions on credit operations have increased cross-border bank debt**



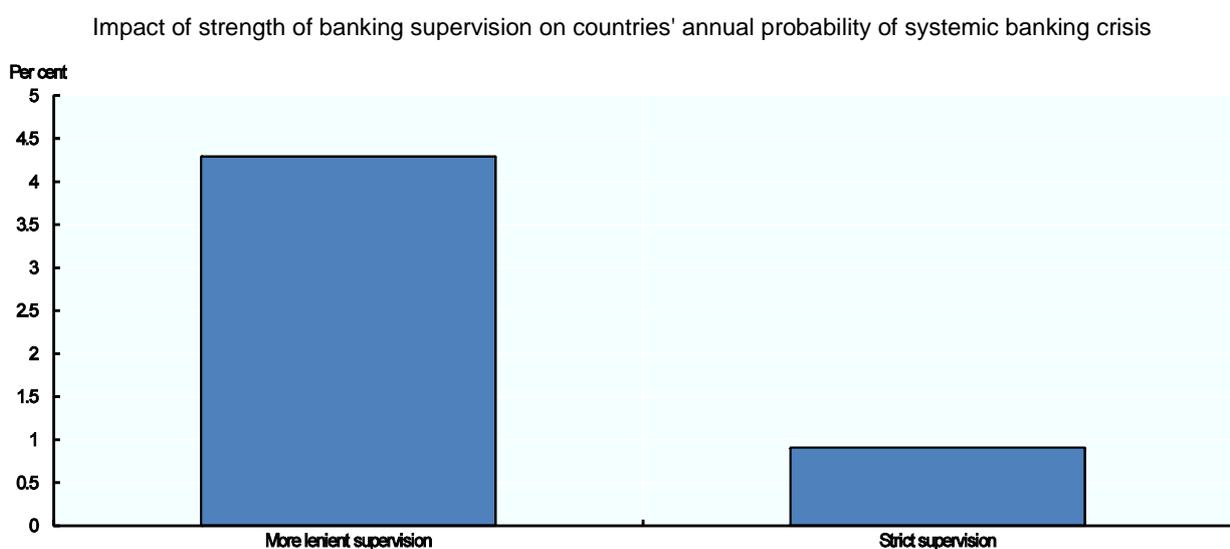
Note: Bars represent, for two different levels of openness to inflows from credit operations, the different levels of cross-border bank debt (as a share of GDP) that arise from a two-year period of different regimes for credit operation inflows. OECD countries are split into groups based on their openness to inflows from credit operations.

Source: OECD calculations based on Ahrend and Goujard (2012a).

### Tighter banking supervision and sound prudential regulation increase financial stability...

13. Overall, stricter financial oversight has reduced financial fragility: countries with stronger banking supervision have been less affected by investor-sentiment driven capital flow reversals, and more generally have a lower risk of suffering from financial crises. For example, a deterioration in banking supervision from a relatively strict (*e.g.* Canada) to a more lenient stance (*e.g.* Greece) would result in an increase in a country's annual probability of a systemic banking crisis by roughly 3 percentage points, thereby more than doubling it (Figure 9). However, stricter domestic banking supervision has also increased (short-term) borrowing from foreign banks. This points to a need for greater harmonisation and international cooperation of supervision to prevent regulatory arbitrage.

**Figure 9. Stricter banking supervision has reduced financial fragility**



Note: Bars represent, for two different levels of banking supervision, the annual probability of suffering a systemic banking crisis. OECD countries are split into two equally-sized groups based on their strength of banking supervision. Strict banking supervision is defined as the average across the strict banking supervision group, with more lenient banking supervision being defined correspondingly.

Source: OECD calculations based on Ahrend and Goujard (2012a).

14. Prudential banking regulation, in particular relatively stringent capital adequacy rules and information disclosure requirements, has limited capital flow reversals during the 2007-09 crisis. Further underlining the potential importance of strict financial regulation, countries where the banking sector is less leveraged (*e.g.* Finland) and to a larger degree funded by deposits (*e.g.* Canada) have been less vulnerable to bank-driven financial contagion. Moreover, countries with more transparent financial markets or which are more open to foreign bank entry have been less affected by capital outflows in response to reversals in investor sentiment, possibly because foreign investors have better information about such countries.

### ...while the effect of more developed financial sectors on stability can go both ways

15. On balance, the institutional development of the banking sector appears to be beneficial for financial stability, directly mitigating the impact of bank balance-sheet contagion. However, less financially repressed banking sectors have also resulted in countries relying more on external bank debt, and in particular debt with short maturities, probably reflecting greater willingness of foreign investors to lend under such institutional set-ups. Similarly, the institutional development of domestic securities

markets may have somewhat ambiguous effects on financial stability, by reducing vulnerability to investor-sentiment driven reversals in capital flows at the same time as it increased external short-term bank debt. One possible interpretation for the latter finding would be that the development of a domestic securities market facilitates carry-trade activities by making it easier for domestic banks or other financial investors to borrow short-term abroad in order to invest in higher-yielding domestic debt securities.

### **Reform options to reduce financial fragility may involve trade-offs with other policy goals**

16. While some financial-stability enhancing reforms could come at a cost to economic growth, there are clearly a number of win-win options. Structural policies that are good for both financial stability and growth include easing FDI restrictions, lowering barriers to competition in product markets, reducing distortions in the tax system towards debt financing, and making greater use of tax treaties. In addition, some other stability-enhancing reforms that may entail possible restraints on economic activity in the short term, could nonetheless be beneficial for growth in the long term, especially if they result in more accurate pricing of risk. Indeed, avoiding financial crises – which appear to have sizeable, long-lasting negative effects on the level of GDP – likely outweighs the potential negative impact from higher costs of capital that may result from stricter financial regulation and supervision. Summing up, there are a wide range of structural policies that are conducive to financial stability, a number of which would also be beneficial for long-term living standards and are therefore strong candidates for reform.

### ***Suggested further reading***

The main papers providing the background to this note are:

OECD (2012), "International Capital Mobility: Which Structural Policies Reduce Financial Fragility?", *OECD Economic Policy Papers*, No. 2, OECD Publishing.

Ahrend, R. and A. Goujard (2011), "International Capital Mobility and Financial Fragility: Part 1. Drivers of Systemic Banking Crises: The Role of Bank-Balance-Sheet Contagion and Financial Account Structure", *OECD Economics Department Working Papers*, No. 902, OECD Publishing.

Ahrend, R. and C. Schweltnus (2011) "International Capital Mobility and Financial Fragility: Part 2. The Demand for Safe Assets in Emerging Economies and Global Imbalances: New Empirical Evidence", *OECD Economics Department Working Papers*, No. 903, OECD Publishing.

Ahrend, R. and A. Goujard (2012a), "International Capital Mobility and Financial Fragility: Part 3. How do Structural Policies Affect Financial Crisis Risk? Evidence from Past Crises Across OECD and Emerging Economies", *OECD Economics Department Working Papers*, No. 966, OECD Publishing.

Ahrend, R. and C. Schweltnus (2012) "International Capital Mobility and Financial Fragility: Part 4. Which Structural Policies Stabilise Capital Flows when Investors Change their Mind? Evidence from Bilateral Bank Data", *OECD Economics Department Working Papers*, No. 967, OECD Publishing.

Ahrend, R. and C. Schweltnus (2012) "International Capital Mobility and Financial Fragility: Part 5. Do Investors Disproportionately Shed Assets of Distant Countries under Increased Uncertainty? Evidence from the Global Financial Crisis", *OECD Economics Department Working Papers*, No. 968, OECD Publishing.

Ahrend, R. and C. Valdivia (2012) "International Capital Mobility and Financial Fragility: Part 7. Enhancing Financial Stability: Country-specific Evidence on Financial Account and Structural Policy Positions", *OECD Economics Department Working Papers*, No. 970, OECD Publishing.

Additional related papers include:

Ahrend, R. and A. Goujard (2012), "International Capital Mobility and Financial Fragility: Part 6. Are all Forms of Financial Integration Equally Risky in Times of Financial Turmoil? Asset Price Contagion during the Global Financial Crisis", *OECD Economics Department Working Papers*, No. 969, OECD Publishing.

Ahrend, R., Arnold, J. and F. Murtin (2011), "Have More Strictly Regulated Banking Systems Fared Better during the Recent Financial Crisis?," *Applied Economics Letters*, Vol. 18(5).

Andrews, D., A. Caldera Sánchez and Å. Johansson (2011), "Housing Markets and Structural Policies in OECD Countries", *OECD Economics Department Working Papers*, No. 836, OECD Publishing.

OECD, (2011), "Getting the Most Out of International Capital Flows", *OECD Economic Outlook*, Vol. 2011/1, OECD Publishing.

OECD (2012), "Financial Contagion in the Era of Globalised Banking", *OECD Economics Department Policy Notes*, No. 14, June, OECD Publishing.

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