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*word count: 4112*

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**KEYWORDS:** deregulation, privatisation, financial speculation, insider trading

**Acknowledgements:**

The author would like to thank Jan Erik Dølvik, Christine Ingebritsen, Lars Mjøset, and Bent Sofus Tranøy for help with sources or for comment and criticism. Daniel McDowell provided research assistance. Errors remain mine.

**Iceland's Financial Iceberg: Why Leveraging up is a Titanic Mistake without a Reserve Currency**

Iceland's boom and bust replicate in miniature the causes, development and trajectory of the absolutely larger but proportionately smaller American boom and bust, except for Iceland's costly lack of a reserve currency and its banks' preference not just for speculating in but overpaying for shaky assets. A combination of excessive leverage and extensive maturity mismatches marked every level of the global economy in the 2000s. Leverage uses large volumes of debt to magnify the returns on a narrow equity base. Mismatched maturity occurs when short term borrowing is used to fund long term investment. Households leveraged their consumption by borrowing against their home equity, and by buying expensive houses with little or no down payment. Financial firms borrowed from short term money markets to purchase long-dated assets, including and especially mortgage backed securities (MBS) and derivatives built on those MBS. In the aggregate, both the US and Icelandic economies sold short term, passive, and liquid assets to the world, consumed part of that borrowing, and reinvested outward in fixed, long term and active investments. The key differences between Icelandic and US banks are that Iceland's banks made their titanic gambles without the benefit of a life-raft. US banks had a life-raft – the US dollar is the international reserve currency. This enabled the United States to survive its catastrophe and continue to have access to global credit markets without much penalty. By contrast, Iceland has mortgaged its economy and economic independence for decades to obtain a bail out for banks that had overpaid for assets and most likely stripped value from those assets as well.

In this article I first describe the mismatch plus leverage phenomena in the United States to show the larger global environment enveloping Iceland. The second section elaborates the political economy of Iceland to establish a baseline for the third section. The third section shows how Iceland replicated in an exaggerated fashion the US pattern of leverage and mismatch, and boom and bust. Keynes tells us that economics is not a morality tale. But Iceland's financial Vikings did sail blithely into icy waters without the benefit of an international reserve currency, as the conclusion notes. Surely a catastrophic mistake, and one with fatal economic consequences for their banks and their fellow Icelandic passengers.

1: Leverage and maturity mismatch in the global economy

During the long 1990s – 1991 to 2006 – the United States operated a system of global arbitrage in which it borrowed cash from the rest of the world on a short term, low interest rate basis, and then turned around and invested much of that money back into the world on a long term, high return basis. This leveraged growth gave the United States economic growth rates well above the OECD average, which increased the implicit leverage in the US economy by attracting more capital inflows. The mismatch in maturities (short term inflows versus long term outflows) gave United States positive net international investment income despite being a massive net international debtor. This net income largely accrued to American multinational firms, including its banks.

The US housing finance system sat at the heart of the leverage/mismatch machine. At the macro-economic level, the United States systematically borrowed short term at low interest rates from the rest of the world, and then turned around and invested back in the rest of the world in longer term, higher risk, higher return, active investment vehicles. Foreigners provided between 10 and 20% of total lending in US credit markets annually after 1994 and 25 percent after 2005 (D'Arista and Griffith-Jones, 2006:64). At the micro-economic level US financial institutions transformed cheap short-term foreign borrowing into a huge variety of higher yield, longer term MBS and collateralized debt obligations (CDOs). Physically, US arbitrage transformed cheap overseas credit into outsized domestic investment and in particular into (literally) outsized housing. The sale of MBS and Treasury bonds linked the micro and macro-economic levels by creating more purchasing power for home-owning consumers. The dollar's international role and the implicit US government guarantee for mortgage giants Fannie Mae and Freddie Mac enabled the United States to borrow in global markets at low interest rates (Schwartz, 2009).

America's leveraged economy yielded huge returns to a handful of firms, just as Iceland's appeared to. From 1960 to 2001, US overseas assets earned an annualized rate of return 2 percentage points higher than US liabilities yielded to foreigners, at 5.6 percent versus 3.6 percent (Gourinchas and Rey, 2005). Furthermore, the gap expanded after 1973, with US assets yielding 6.8 percent, while liabilities cost only 3.5 percent. Profits by US-based multinational firms account for most of this disparity. But unlike Iceland, the US largely borrowed from the rest of the world in dollars. This vastly reduced the risk that a currency collapse would cause banks to fail; symmetrically it meant that the US central bank could rescue banks, should they fail, merely by printing dollars.

American leverage also powered more general economic growth, enabling the United States to out-grow its rich country peers and enjoy its own version of the Icelandic Land Rover boom. US GDP per capita increased 33.5 percent from 1991 to 2005, versus an OECD average of only 28.1 percent. While the crisis shows that some of this US growth is fictitious, the same is true for the laggards (Germany at 17.3 percent and Japan at 13.3 percent), whose growth largely depended on exports to a turbocharged US economy. Home mortgages were central to both borrowing and growth. Households borrowed against home equity – the value of their houses net of mortgage debt – and then spent that equity.

Foreign capital inflows collateralized by housing thus created a temporarily self sustaining cycle. In-flows provided money to the US mortgage market and pushed down nominal interest rates; these enabled housing prices to rise; homeowners cashed out and spent part of the increase in house prices; this increased aggregate demand made the economy grow even faster, drawing in yet more foreign capital; foreign capital found new assets to buy because higher house prices enabled banks to underwrite more MBS. The United States built 27.7 million units of housing 1990-2006, which helped the US create half of the OECD's new jobs 1991-2005. So long as housing prices and incomes continued to rise, this cycle could continue. The international reserve currency position of the US dollar sat at the heart of this cycle, and by permitting US based entities to borrow and lend in dollars immunized them against some crippling risks (Schwartz, 2009).

The dollar's international position mitigated the dual risks of leveraging and maturity mismatch. Leveraging is inherently risky: borrowing creates fixed obligations that might be hard to service if the income generated by the asset side of the balance sheet falls. Yet a fall in the dollar would create offsetting income, because US exports would probably increase and US receipts of foreign income would increase in dollar terms. Maturity mismatches – using short term borrowing to fund long term investments – are also inherently risky. Creditors might call in their short term loans, forcing an emergency liquidation of a borrower's long term positions. Yet because US foreign debt was dollar-denominated, the United States government could always print more dollars to meet any emergency need in the financial system (as indeed happened 2007-2009). Foreign lenders would have hesitated to lend so much to the United States had the dollar not been a reserve currency. And had the dollar not been a reserve currency, the risks to US households, firms and state of borrowing overseas for current consumption in addition to overseas investment would have been unbearable, as they have proved to

be for Icelandic households. Instead, the dollar mitigated those risks, because US based entities borrowing in dollars, avoided adding a currency mismatch to their maturity mismatch.

None of this was true for Icelandic banks, even though they also engaged in a leveraged maturity mismatch after deregulation defrosted Icelandic housing assets and enabled Icelandic households and firms to use them as collateral against foreign borrowing. Theoretically Icelandic banks could have hedged their foreign exchange exposures, but doing so would have been costly. Moreover, they would have been hedging liabilities composed of thousands of inherently unpredictable and volatile retail deposits in schemes like Landsbanki's Icesave or Kaupthing's Edge accounts. Finally, hedging would have provided information to the financial markets about the true extent of the Icelandic banks' liabilities, reducing their creditworthiness.

2: Iceland's political economy

Iceland's Viking banks operated in a very different economic environment from US financial firms, and not only because Iceland lacked a reserve currency. Iceland has a small population base, a narrow economic base and a relatively controlled economy. Iceland's population – about 300,000 – is roughly the size of New Orleans, Cardiff or Bonn. Public sector employment and state ownership were fairly limited compared to other Scandinavian economies. Unlike Sweden, only one-fourth of the labour market is in the public sector. Unlike Norway, state ownership is salient only in power generation (and thus linked intimately to aluminium smelting). Yet the state tightly controlled the sources and distribution of growth – including finance – because the economy's structure made it vulnerable to inflation as well as boom and bust.

The Icelandic economy rests on a very narrow base. Manufacturing firms can rarely attain the requisite economies of scale to be competitive in global markets. Instead scale insensitive or naturally sheltered sectors predominate. Services exports are possible, as with DeCODE Genetics' (Íslensk erfðagreining) production of R&D for the pharmaceutical industry; tourist receipts mostly offset Icelanders' own travel. Exports of fish and related animal products typically accounted for half of Iceland's goods exports; exports of energy in the form of raw aluminium accounted for a further quarter but will soon displace fish (OECD, 2008:29). Iceland's ability to import rests on these two sectors, yet both are inherently inelastic in a recession or currency crisis. Imported raw materials (bauxite) account for one quarter of the value of aluminium exports, limiting the utility of currency devaluation. Aluminium exports are not

easily scaled, as increased production requires large, lumpy and time consuming investments in both energy output and smelting facilities. While fish exports are easily scalable in response to changes in demand, long term sustainability limits the size of the catch. By contrast, in larger, more diversified economies, recessions and currency crises shift demand away from imports toward more readily available domestic substitutes and more sectors can generate exports.

Fishing and smelting employ only about one tenth of the work force, all manufacturing a further tenth, and all three are shrinking in proportion to the whole population. If Icelanders were willing and able to emigrate *en masse*, or willing to accept an increasingly unequal income distribution, this might not matter. Like any quarry economy, Iceland would export its excess, unemployable population. How then is export income and income gains redistributed in a way that produces a relatively flat income distribution as well as full employment? Iceland's state essentially transforms receipts from the two main exports into a livelihood for all Icelanders through a comprehensive set of transfers run through the collective bargaining system and welfare state.

Collective bargaining sets a floor on wages in all sectors, redistributing income from export sectors to the non-traded sectors, including the welfare state. Labour law imposes any minimums negotiated by a given union or federation on workers doing similar work in that sector (i.e. concatenation). Iceland's labour force is highly organized, with 80 percent coverage (Dølvik, 2007). The Icelandic Confederation of Labour, ASÍ, accounts for most of this, with the Federation of General and Special Workers (Starfsgreinasamband Íslands – SGS) accounting for half of ASÍ's coverage (ASÍ, 2009). Female labour force participation is above the already high Nordic norm, at roughly 80 percent and is concentrated in the public sector. The Federation of State and Municipal Workers, BSRB, covers roughly 12 percent of the work force. With SGS accounting for one-third of the entire organized labour force, and the employer's federation Samtök Atvinnulfísins covering half of all employees, wage minimums were easily transmitted across the entire economy even after the end of automatic wage indexation in the 1980s (Mjøset and Sigurjonsson, nd).

The welfare state also redistributes income. The high level of female employment stabilizes income in dual-earner households and assures an income for single earner households. The tax system transfers considerable income downwards, providing 12 percent of income in the third decile, rising to 25 percent of income in the first decile. Much of this transfer occurred through generous tax allowances on home

mortgages – the state essentially absorbed the cost of the first USD3000 in mortgage interest for households with below average incomes (OECD, 2001:62-4). Strict controls over finance were also part of this welfare state. A segmented financial system assured most households access to housing finance (including tax subsidies) while reserving significant capital for the state to use to build out aluminium related infrastructure.

As elsewhere, housing finance represented an important part of Iceland's credit market. The 80 plus percent rate of individual homeownership in Iceland magnifies this importance. The Icelandic state had regulated the flow of credit to the housing market through the Housing Financing Fund (HFF - Íbúðalánasjóður) and its predecessors. The HFF was the primary supplier of mortgage credit in Iceland through 2004. Housing investment was relatively small, at 3.5 percent of GDP, but HFF bonds provided the major asset on the books of Iceland's private pension funds even after those funds were permitted to invest overseas in 2000 (OECD, 2001:108-9). Pre-deregulation, the HFF and its predecessors provided a steady if limited flow of credit through simple, vanilla mortgages. Interest rates tended to be below market rates, but loan to value ratios were capped at 65 to 70 percent. HFF interest rates stepped down in the 1990s as global disinflation drove down nominal interest rates everywhere, moved up a bit after 2000 and then fell from 2004 onward (OECD, 2008:74).

3: Icelandic leverage in global markets: a house of cards made from houses

All this began changing in the late 1990s (see Skaar Viken, this issue for more details). Privatization and liberalization of credit markets allowed households to go on a spending spree, and financial firms on an acquisition spree. Mortgage markets linked the two, as in America. On the supply side, deregulation freed private banks to import foreign capital. In reforms typical of the 1990s, though later than in Scandinavia, the state transformed a variety of financial and production agencies either into private sector entities or publicly owned but commercially oriented firms (Schwartz, 1994). By 2002 the state divested its holdings in a variety of banks, including Landsbanki and Búnaðarbanki. Privatization enabled Investment banks like Kaupthing to merge with Búnaðarbanki to gain access to consumer deposits and enter commercial banking markets (OECD, 2003:92). This forced the existing private bank Íslandsbanki (Glitnir Banki's predecessor) out of its traditional lethargy. By 2006, the three big banks controlled 85 percent of assets and deposits (OECD, 2009:9).

On the demand side, the state tightly controlled credit to households until the late 1990s. The pre-deregulation controls on mortgage finance meant that Icelandic houses were probably undervalued. Additionally, the 70 percent loan cap on first time home-buyers forcing considerable saving. Deregulation and privatization dramatically expanded the supply of capital, allowing housing prices to rise rapidly. Credit expanded 20 percent in 2004 and 30 percent in 2005 (OECD, 2006:62, 65). Like Americans, Icelanders used their housing finance system to fund increased consumption. Icelanders rushed to take advantage of falling interest rates when refinancing of mortgages became possible in 2004. Newly available foreign currency loans magnified the interest rate drop, and predictably helped set of a housing price bubble (Aizenman and Jinjarak, 2008). By 2008, 20 percent of household debt was denominated in foreign currency (OECD, 2009:13).

Just as in the United States, households used refinancing to extract and consume equity from their houses (see Dalby Trætteberg this issue). Equity extraction helped drive household debt levels from 160 percent of disposable income in 1999 to 220 percent in 2004 (OECD, 2006:33, 76). Households' consumption grew twice as fast as income 2003 to 2005 causing Iceland's already large current account deficit to explode to 16.5 percent of GDP (OECD, 2008:23). Imported capital goods for new smelters accounted for one-third of this, and excess consumption the rest (OECD, 2006:24-5). Nothing limited imported consumption as long as someone was willing to extend mortgage credit. And Iceland's newly deregulated financial sector was happy to extend credit.

Iceland's banks extended credit because they thought they were lending against secure collateral. As in the United States, falling interest rates caused house prices and thus collateral to rise. Banks loaned households more money, which promptly round-tripped to the housing market, driving home prices up even more in a temporarily self-validating cycle. Overall house prices rose 89 percent from early 2001 to late 2007, including an eye-popping 60 percent from 2003 to 2005, while Reykjavik area prices more than doubled, 1999 to 2005 (OECD, 2006:75; OECD, 2009:25). Half of the increase in household wealth came from housing, 2003 to 2007 (OECD, 2009:30).

The other half came from financial assets – mostly shares of the financial sector itself. Domestic expansion rested on fictitious capital – the unrealized and unrealizable equity gains on Icelandic property. So did the overseas expansion of Iceland's relatively tiny banks. Offshore borrowing floated them into two different markets. First, Iceland's banks constructed a profitable carry trade borrowing

short term, low interest rate funds in offshore markets and reinvesting those funds long term in higher interest rate mortgages onshore, acquisitions offshore. Landsbanki's Icesave accounts and Kaupthing's Edge accounts attracted over £500 million in deposits. Burgeoning balance sheets enticed European banks and investors to take over $50 billion in equity stakes in Icelandic banks (Lewis, 2009). These investor inflows tripled Iceland's share market capitalization from the beginning of 2005 to mid-2007 (in October 2008 it would lose 94 percent of its capitalization) (Bloomberg). As with housing prices, soaring equity prices were temporarily self validating – and as Skaar Viken (this issue) notes, self-serving – as rising prices attracted more inflows that in turn validated the earlier increase in prices.

Second, bigger balance sheets and rising share prices allowed Icelandic financial firms to indulge in a second leveraged mismatch, using their own shares and borrowed money to accumulate an expensive collection of financial firms in Europe. Even non-financial retail firms like Baugur leveraged their existing shares into acquisitions in Britain and Ireland. So both at the firm and sector level, Icelandic financial firms transformed increased short term borrowing into long term and illiquid investments. Domestic and offshore developments ran in parallel, with increases in domestic fictitious capital permitting increases in borrowing and lending power on and offshore. By 2007, the big three banks' total assets were roughly 10 times Iceland's GDP, well above the OECD average (OECD, 2009:10).

This virtuous cycle was not a perpetual motion machine. As in the United States, this temporarily virtuous cycle relied on continuously increasing housing prices, continuous disinflation, and continuous inflows of foreign capital. Each of these tailwinds eventually gave out. By 2006 housing prices had peaked, the inflation rate had jumped by 50 percent, and rising mortgage defaults made all investors on the short end of the maturity mismatch increasingly skittish. As those investors stopped funding American financial firms' leveraged maturity mismatches, the whole house of cards came tumbling down.

So did Iceland's house of cards. Compared to the United States, Iceland's financial system had even higher levels of leverage, housing prices had climbed even higher, and financial firms had gambled at even more extreme odds. By 2007, Landsbanki, Glitnir/Íslandsbanki and Kaupthing collectively had accumulated short term foreign debts equal to roughly five times Iceland's GDP, and were responsible for increasing Iceland's net external debt by 142 percent of GDP (OECD, 2009:10). By contrast, all US foreign debt by all actors amounted to only a bit more than US GDP, while net foreign debt was only 25

percent of US GDP. And Iceland did not possess the international reserve currency, so the relative cost of its crisis was much bigger. The Icelandic Central Bank's current guess – based on an optimistic level of post-crisis asset prices – puts the cost of bailing out the three banks at 17 percent of GDP in 2009 (OECD, 2009:47). And this does not include making domestic depositors whole.

4: Too small to save versus too big to fail

When financial crisis erupted in the summer of 2007, the US central bank and Treasury were able to manufacture money to partially restore banks' capital base and allow them to meet their short term obligations. The US central bank allowed US banks to exchange their bad investments in long term mortgage backed securities for cash and Treasury notes; it provided dollars to European banks so they could settle their trades. Iceland's central bank could not resolve its banks' maturity mismatch by printing money. Instead, the Icelandic state had to overtly nationalize and restructure all three banks in October 2008, taking on foreign debts amounting to three times Iceland's GDP. As its banks crashed, so too did Iceland's stockmarket, housing prices, and currency, destroying the asset base that theoretically had offset the banks' liabilities to depositors and global money markets. Moreover, many households and firms with foreign-currency denominated debt lacked compensating foreign currency earnings and so had to devote more of their devalued Kroner to debt service (OECD, 2009:13).

Iceland's boom and bust thus replicated and exaggerated the causes, development and trajectory of the American boom and bust. Iceland's small size magnifies the apparent importance of individual actors and firms. But the same combination of excessive leverage and mismatched maturities that humbled US and European financial firms caused Iceland's crisis too. Iceland's newly liberalized financial sector used cheap foreign money to enable Icelandic homeowners to consume their home equity based on unsustainable home prices. Rising home prices also provided those Icelandic firms with the asset base they needed to pursue self-serving overseas acquisitions of long term positions in financial firms, real estate, and retail.

There are differences though. Iceland came late to the global party, drank too quickly, and hit the floor rather harder than larger economies. Financial deregulation lagged that in the United States by as much as a decade. The increase in home prices was larger and faster than in the United States. And unlike the United States, Iceland's financial boom did not create any new productive capacity that might help

amortize the debts its financial firms created. The new smelters constructed in the 2000s would have been built anyway. Iceland's case illustrates well Thucydides' assessment, as Thorhallsson (this issue) shows: the strong do what they can while the weak do what they must. The United States could rely on the dollar's position as a reserve currency to give misbehaving financial firms a soft place to land when their party ended. Too soft perhaps. Iceland's financial Vikings partied their longboats onto very hard reefs, handing their passengers the lead of massive new public debts rather than life vests. Unlike the United States, Iceland could not just print more money or borrow more abroad to keep its banks alive, while blithely depreciating it currency. Instead Iceland found itself forced by Britain and the Netherlands to guarantee off-shore deposits at the same time it faced massive increases in domestic unemployment and the fiscal deficit. Small states must behave more prudently than large ones, not because it is the right thing to do, but because it is the only thing they can do.

**References**

Aizenman J., and Y. Jinjarak. (2008) 'Current Account Patterns and National Real Estate Markets," NBER Working Paper 13921.

ASÍ (no date), http://www.asi.is/desktopdefault.aspx/tabid-96//151_read-183/.

BEA (Bureau of Economic Analysis) (2008), *International Investment Position*, http://www.bea.gov/international/index.htm#iip, date accessed 1 August 2008.

Bloomberg, http://www.bloomberg.com/apps/quote?ticker=WCAUICEL%3AIND.

D'Arista J. and S. Griffith-Jones. (2006) 'The Dilemmas and Dangers of the Build-up of US Debt,' pp. 53-86 in J. J. Teunissen and A. Akerman, eds., *Global Imbalances and the US Debt Problem*, The Hague: Fondad.

Dølvik, J. E. (2007) 'Den Nordiska Kollektivavtals- och Fackföreningsmodellen,' Nordens Fackliga Samoganisation, http://www.nfs.net/dokument/DolvikDennordiska modellen.pdf.

Gourinchas, P.-O. and H. Rey. (2005) 'From World Banker to World Venture Capitalist: US External Adjustment and the Exorbitant Privilege,' NBER Working Paper 11563, Chicago: NBER.

Lewis, M. (2009) 'Wall Street on the Tundra', *Vanity Fair*, April.

Mjøset, L. and B. B. Sigurjonsson. (no date) 'Memo on Wage Bargaining in Iceland', unpublished manuscript, University of Oslo.

OECD. (2001) *OECD Economic Survey: Iceland, 2001, Paris: OECD.*

OECD. (2003) *OECD Economic Survey: Iceland, 2003, Paris: OECD.*

OECD. (2006) *OECD Economic Survey: Iceland, 2006*, Paris: OECD.

OECD. (2008) *OECD Economic Survey: Iceland, 2008*, Paris: OECD.

OECD. (2009) *OECD Economic Survey: Iceland, 2008*, Paris: OECD.

Schwartz, H. (1994) 'Small States in Big Trouble' *World Politics* 46(4):527-555.

Schwartz, H. (2009) *Subprime Nation: American Power, Global Capital and the Housing Bubble*, Ithaca, NY: Cornell University Press.