

## Summary for “THE 2008 GLOBAL FINANCIAL CRISIS IN RETROSPECT”

### Capital Controls as a Bargaining Device: The Case of Iceland

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In January 2016 a consortium of US based hedge funds voluntarily handed Íslandsbanki, an up-and-running Icelandic bank with equity worth \$1.4 bn, to the Icelandic state without receiving compensation in return. Íslandsbanki was the single largest asset handed to the Icelandic state at this time in a transfer worth \$2.8 bn in total. The transfer of assets and other related measures were a key step in the resolution of three Icelandic banks that collapsed during the banking crisis of October 2008. The resolution, in turn, eventually made it possible, in March 2017, to lift the strict capital controls Iceland had lived with since the crisis.

The capital controls were imposed during the 2008 crisis to stem capital flight and prevent the collapse of the Icelandic krona (ISK). They were rigorously enforced and were effective in that the exchange rate stabilised and it was possible to lower interest rates quite rapidly after the crisis. The successful implementation of the controls, however, resulted in a large overhang of ISK-denominated, foreign-owned assets composed of the Icelandic krona holdings of failed banks and carry-trade funds locked in by the controls. Hence, it was very difficult to remove the controls: there was a high risk of rapid capital outflows and a renewed currency crisis had this been attempted. So the controls stayed in place far longer than the originally envisaged two years.

Ultimately, however, the Icelandic authorities found that the capital controls were not only a problem but that they could be employed as a strategic tool in dealings with foreign investors and were thus also a part of the solution to that very problem. In June 2015, after several years of grappling with the issue, a ‘comprehensive strategy for capital account liberalization’ was announced. This strategy and its execution is the subject matter of this paper: we show how the controls, in combination with other measures, were successfully used as a bargaining device in the resolution of the failed banks. We employ a bargaining approach to model the strategic interaction between Iceland and foreign creditors on the resolution of the failed banks. We calibrate the model and find that outcomes are consistent with a judicious estimation of Iceland's bargaining strength, leading to resolution by settlement.

The bargaining model is structured to capture the main elements of Iceland's actual strategy vis-à-vis the international creditors of the failed banks. The parties in our model bargain over how to split the assets of the banks before they are released and converted from ISK to foreign

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currency; the split is implemented by a haircut: a transfer of ISK-assets from the estates of the banks to the Icelandic state, termed a 'voluntary stability contribution' by the Icelandic authorities. In the case of disagreement, Iceland threatens to impose a larger, previously announced, unilateral haircut - a 'stability tax' - on bank assets which creditors are bound to contest in court. If Iceland wins the court contest the stability tax is imposed, but creditors convert the remaining assets into foreign currency; if Iceland loses, creditors retain and convert all the assets. A dispute is costly for both parties, but costlier for Iceland, which - similarly to a sovereign default situation - would face not only similar costs of litigation as creditors, but also less tangible costs, such as loss of reputation and possible market exclusion, which creditors do not incur.

Our modeling approach combines elements from two literatures: one is a strand of the law and economics literature on out-of-court settlement versus litigation; the other, aspects of some recent work on bargaining between debtors and creditors in the sovereign debt and default literature. We also rely on the latter literature for numerical values of some parameters when calibrating the model.

As for the former strand of literature, in the setting of the bank resolution the punitive tax announced by the authorities invites litigation by creditors, but an out-of-court settlement can be made by creditors making a sufficiently large stability contribution. We employ an approach where the concept of a *decision standard* for deciding the outcome of a case is central: if the *quality* of the case exceeds the decision standard the plaintiff wins. We assume the quality of the case is known and can be measured by the size of the announced stability tax. The value of the decision standard is, however, unknown due to limited precedent, but its statistical distribution, given circumstances such as the size of the ISK overhang, is assumed to be known to both parties. Given the distribution of the decision standard the probability of a judgment for Iceland can be inferred from the announced tax rate.

The literature on sovereign debt and default - especially bargaining models where debt is renegotiated - is also relevant to our setting. A recent paper in this vein by Asonuma and Trebesch (2016) is particularly relevant to our work; they employ a modelling approach similar to that just described, but allow for pre-emptive restructuring of debt - corresponding to resolution by stability contribution in our case - as well as post-default restructuring - corresponding to the imposition of a stability tax in our setting. The parties engage in generalised Nash bargaining in both types of restructuring. In our model there is Nash bargaining at the pre-emptive stage only, i.e. over the stability contribution, but the government uses the stability tax rate to create a threat point in the bargaining process. To be credible, the tax rate must be set so as to maximise the expected utility of Iceland's payoff in the case of disagreement and a court dispute. Our model is set up to capture a one-off interaction and is therefore static.

We rely on the sovereign debt and default literature for numerical values of parameters describing risk aversion, bargaining power and - to some extent - dispute costs. We then calibrate the median value and standard deviation of the distribution for the decision standard to the observed outcome of the resolution of the failed banks. At the observed tax rate and stability contribution of 30% and 19%, respectively, the calibration indicates that (in the context of our model) the parties believed the median decision standard - i.e. the value

of the stability tax where there is a 50:50 chance of an Iceland judgment - to be on the order of 35-40%. The calibrated standard deviation of approximately 17 percentage points indicates considerable uncertainty about the true value of the decision standard. With these parameter values the probability of an Iceland judgment, had the creditors opted to go to court, is estimated at 67%.

In June 2016, a year after announcing its strategy on the resolution of the ISK overhang, the Icelandic authorities attempted to execute a restructuring of locked-in carry trade funds - also referred to as 'offshore ISK' - similar to that of the assets of the old banks. The strategy consisted of a haircut - similar in magnitude to the previously announced stability tax on bank assets - to be executed by 'voluntary' participation in an auction of foreign currency conducted by the Central Bank of Iceland, combined with a threat to lock in the ISK-denominated assets that were not offered for sale in the auction. But this time the strategy largely failed: only a third of the assets was offered for sale in the auction.

We adapt our bargaining model to the restructuring of the offshore ISK. In this version of the model Iceland and investors holding offshore ISK bargain over the haircut to be applied to those funds as they are converted to foreign currency. In the case of disagreement, a court dispute is expected *ex ante*; if Iceland were to win that dispute the haircut is applied, if Iceland loses the investors retain their funds without any haircut and can convert them into foreign currency. Both parties will suffer costs in the case of dispute.

A calibration of the model to the values set by Iceland in the auction the results indicates that the authorities employed similar assumptions on the distribution of the decision standard as in the case of the old banks, with the median value only slightly lowered. This despite Iceland's much improved external circumstances and the fact that much of the problematic assets had already been restructured in the bank resolution. The failure of the auction indicates that the investors - to a large extent the same hedge funds that had already taken a haircut on the assets of the old banks - did not share these assumptions, believing their chances to be better. Their strategy paid off: in March 2017 the Icelandic authorities made a substantially better offer with another third of assets released at the same time as capital controls - apart from those on offshore ISK - were largely removed. There are still holdouts: some 3.5% of offshore ISK are still locked into special accounts at the Central Bank of Iceland. It is unclear when or how this matter will be resolved.