YPFS Lessons Learned Oral History Project: An Interview with Ádám Banai

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Introduction:

The Yale Program on Financial Stability (YPFS) interviewed Ádám Banai regarding his time as an analyst and director of the National Bank of Hungary (Magyar Nemzeti Bank, or MNB) during the Global Financial Crisis (GFC) and in the subsequent era to date. Banai joined the staff of the central bank in 2008 while completing his masters’ thesis, just as the GFC was beginning to exert major effects in Hungary. In the ensuing years, he has worked at the center of the MNB’s efforts to develop and implement a macroprudential framework for financial stability in Hungary. In 2013, he was made head of applied research and stress testing. Since 2020, he has served as executive director of monetary policy Instruments, financial stability, and foreign reserve management. Banai holds a PhD in finance from Corvinus University in Budapest and has authored numerous papers and published academic journals, including, the Journal of Financial Stability and the Journal of International Money and Finance.

This transcript of a Zoom interview has been edited for accuracy and clarity.

Transcript

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1 The opinions expressed during this interview are those of Mr. Banai, and not those any of the institutions with which he is affiliated.
2 In 2017 the Hungarian National Bank sold Mark ZRT to APS Investment of Slovakia (see: https://elischolar.library.yale.edu/journal-of-financial-crisis/vol3/iss2/31/.
3 A stylized summary of the key observations and insights gleaned from this interview with Mr. Banai is available here in the Yale Program on Financial Stability's Journal of Financial Crises.
YPFS: Hello, Mr. Banai, please tell us about your career experience as it relates to the global financial crisis. Where were you in 2007? And what were you working on at the time that the GFC started?

Banai: For me, the global financial crisis is in fact, the start of my career for two reasons. You mentioned 2007, but from Hungarian perspective, it's mostly 2008. In 2007 we didn't really see any big effects on the Hungarian markets or the Hungarian economy. And for me, the GFC is important since I started my career at the central bank in the summer of 2008. I remember very precisely; it was the 11th of August when I joined the bank and before that I was at the University of Corvinus where I did my masters. My topic was the causes of the global financial crisis, but when I was writing it, I did not know that. The real title was “The subprime crisis”.

When I joined the central bank, in the summer of 2008 we didn’t consider that these events were part of a global financial crisis. We were analyzing the potential effects on the Hungarian markets. And we didn’t see very direct connections with the Hungarian market because although Hungary is a very open small economy, from a banking perspective it is very traditional. We had mostly foreign-owned banks (at that time around 80 percent, today it is around 50 percent) but not Anglo-Saxons. The market was dominated by Austrian, Italian and German players. And only one player had some activity with the so-called toxic assets of the US. Later we realized that we had our own toxic assets.

When I joined the bank, my first task was to understand better the role of the GSEs in the US economy and what could be the potential effect of turbulences with the GSEs. I joined the central bank in August so the first big sign of the potential size of the events was the collapse of the Lehman Brothers, which was just one month after I joined the central bank. It really changed our activity abruptly.

To understand better the evolution of the National Bank of Hungary it is worth knowing that before the crisis, financial stability was never in the focus of the institution. It was a small directorate with 20 to 25 people. The main task of the department was just to put together a financial stability report for the banking sector of Hungary, to give a quick overview on the main trends of the sector.

But from the autumn [2008], the situation changed extremely. Risks of the financial markets and the banking sector which were built up before the crisis materialized abruptly. The central bank recognized these risks two, three years before and started to communicate them in its Report on financial stability, but the size of the risk was unknown until then and the central bank had no regulatory or supervisory power before the GFC.
In October, we faced extreme turbulences in the financial market. The government bond market stopped working, similarly, liquidity in the FX swap market dried up, and the HUF depreciated significantly. Although these phenomena had no abrupt effect on the performance of loans, they highlighted the potential risks. Many borrowers were able to handle some of the shocks for a short period of time, but for a longer horizon they could not take it. At that moment, we understood that households and smaller companies won’t be able to pay the installments of their FX loans with a much weaker exchange rate for a long period.

But first we had to face that on the short horizon, it is more problematic that they are so reliant on FX swap markets since FX swap markets froze. It was unexpected as a FX swap is a collateralized transaction.

But when the crisis evolved after Lehman, the FX swap market— one of the most important financial markets in Hungary—stopped working. Hungarian banks needed to have FX swaps to hedge their positions of foreign currency lending but could not access the market anymore.

YPFS: From interviewing your predecessors, we learned of the residential real estate lending and FX exposures to Swiss francs. What was the mistake, the misunderstanding that led to this vulnerability that permitted foreign bank subsidiaries in Hungary to market to household level clients Swiss Franc-denominated mortgages? Was there a regulatory gap in the central banking and supervisory landscape unique to Hungary?

Banai: Let me divide this into two parts. First, until 2003, Hungarian households were able to get state subsidized mortgages with an interest rate of 6 percent. After that program was stopped, the interest rate level of HUF mortgages was above 10 percent which was extremely expensive. Banks realized that they wouldn’t be able to lend actively to the households with the interest rate level of the Hungarian forint that’s why they chose to lend in foreign currency. They chose the Swiss Franc because it allowed them to be even cheaper than the Euro (there was a difference of about 1-2 percentage point). And what they had seen before is that EUR/CHF volatility is not too high. And also, they expected that Hungary would join the Eurozone very soon, so they thought that after joining the Eurozone, the exchange rate risk would be eliminated.

Second, from a regulatory point of view, it is important that Basel II was applied from early 2008. So, we were in a relatively early phase with Basel II. At that time, there was no experience with the Supervisory Review and Evaluation Process (SREP) and no additional capital was applied in Pillar 2. Secondly, at that time macroprudential policy did not exist. There were some international experiences with regulations hindering excessive lending, but no comprehensive regulatory framework was applied in any EU country.
Beside the regulatory shortcomings, the buildup of the FX loan portfolio was very, very fast. Two thirds of the FX loan portfolio was built up in 2007-08 just before the global financial crisis. So, most of those loans which became non-performing loans later was built up in 2007 - 2008. It was very fast; it was hard to react to it. If we think of how long the procedure of creating regulation is, from assessing the risk until the application it would have been almost impossible to avoid these risks with regulations. Although it is also true that there was not a very big debate on how to regulate it.

The National Bank of Hungary was the one that made some warning that FX lending was not a riskless product. Already in its 2006 Financial Stability Report, the National Bank of Hungary analyzed in detail the potential steps against FX lending. The Supervisory Authority of Hungary joined the central bank in early 2008 when a new FX product, the Japanese Yen-based product, started to be sold by banks. The two institutions jointly published a warning on the risk of Japanese yen lending and emphasized that Hungarian forint–Japanese yen is very volatile which makes it a very risky product.

**YPFS:** In the years following the crisis, what has Hungary changed in the legal-regulatory baseline to prevent this vulnerability from emerging?

**Banai:** The biggest change was that the National Bank of Hungary got a regulatory role and used it very actively. Let me give you some examples on this activity. On the product level, probably the most important change was the introduction in 2015 of PTI (principal-interest-taxes) and LTV (loan-to-value) regulation.

The specificity of these regulations is that they are differentiated between different denominations which is an answer on the high risk of FX loans. In practice it means that for Hungarian Forint loans, these regulations are much more favorable. The LTV maximum is 80% for Hungarian Forint loans and for Swiss franc loans only is 35%, for euro-denominated loans it is only 50%. So, there’s a very big difference, and this is also true for PTI regulation, which is 50 to 60% for different Hungarian Forint loans, but for Swiss Franc loans 10 to 15% and for euro loans, it is 25 to 30 percent. Moreover, usually banks expect to have FX income as well to have a natural hedge against FX movements.

On the banks side, we introduced different measures to regulate the funding structure of the banking sector. The first was the foreign exchange funding adequacy ratio that was introduced in 2012, very early compared to the Basel III regulation. The logic is very similar to the NSFR (net stable funding ratio) but focusing on just foreign currency funding. So, you have to match your long-

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term foreign currency assets with long-term foreign currency funding, even if you use FX swaps, you have to use long term FX swaps.

YPFS: Regarding liquidity facilities that were announced to correct the buildup that you mentioned to us, since the global financial crisis we've seen an increase in swap and repo lines that are offered to many emerging market economies exactly like Hungary. First, what is your opinion of these liquidity facilities? Do you think they're used? Do you think they've worked?

Banai: In the Hungarian case, as I mentioned, the Hungarian banks were relying on FX swap market heavily, and since in some periods during the crisis they lost their ability to access the market, they had to turn to the central bank for FX swaps. And the problem was that the central bank of Hungary— and it was true for some other central banks— had limited foreign currency reserves. At that time, the central bank of Hungary was close to, or even under, the minimum level suggested by the Guidotti-Greenspan ratio, i.e. the level of FX reserves did not reach the level of short-term debt.

This limited size of reserves also meant that ensuring enough FX liquidity for the banking sector via FX swaps was very challenging. FX swaps from the ECB could have solved this problem as the central bank of Hungary could have channeled ECB money to the Hungarian banking sector at that time. Unfortunately, the MNB only got FX swaps from the ECB, much later, in the autumn of 2009. So, while the Fed provided swap lines to several developing countries, the ECB did not do the same. They provided swap lines for Sweden and Denmark but refused for Poland and Hungary. This kind of discrimination proved to be a major error.

The first problems of the FX swap market started in October 2008, and we got a FX swap line from the ECB just a year later.

YPFS: As you know, initially the ECB offered a repo line, which means getting Euro currency against high-quality Euro collateral, and then later upgraded 50% of that repo to a swap in about January 2010. What do you think changed in the ECB's thinking in the interim period that they upgraded half of it to a swap?

Banai: I don't know their internal operation. From our perspective, there is a clear difference between repos and FX swap. Repo makes it easier to use the central bank's FX reserves, but it still has to use its own reserves. For sure, if a central bank has a repo line it can hold high quality securities and use the repo to convert them into cash any time when it is needed for swap transactions. But the big difference is, the real game changer, is when we can give our own currency and get the FX because then it is additional FX liquidity.
And I think many central banks in the central and eastern Europe (CEE) region were asking for FX swaps because they were much more useful, and I think this is what the ECB probably understood, that there was a huge difference for us. And I really believe that 5 to 10 billion Euros in an FX swap line is not a huge amount compared to the size of the ECB but a very big amount for a central bank in the CEE region. For a regional central bank, it supports the stability of the system and even just the release of such a contract can calm the markets. For this reason, in many cases actual usage won’t be needed since the whole market knows that the ECB is in the background.

YPFS: Turning to your post-crisis experience with Hungary’s distressed debt, please tell us about the aims of the Mark Zrt (Hungarian Restructuring and Debt Management Company). What conditions led to its creation and what were your main lessons from that experience?

Banai: Let me take one step back. What was very important in Hungary, and a huge difference compared to other regional countries, was that even in early 2013, five years after the onset of the crisis, the loan book of the Hungarian banking sector was still shrinking. We were close to a credit crunch. Policymakers were afraid that this creditless recovery could not go on for long and that it wouldn’t be sustainable. So, the biggest question was how to support lending. And for this reason, we had to find all the bottlenecks that hindered bank lending.

One very important point was the very large non-performing loan (NPL) stock in the banks’ loan book. The NPL ratio was 20 percent in the Hungary banking sector. And within this high number, the real estate project loans had an even higher proportion, more than 40% NPL share of all loans.

The question arose, how to clean this portfolio? We understood that in many cases it was impossible to make these loans performing again. We started to look for incentives to clean the portfolio.

The motivations from the central bank's point of view were twofold. First once we became the macroprudential authority, we had a macroprudential mandate. Second, since we didn’t really have an operating lending market, it also had a negative effect on the monetary policy and the transmission mechanism.

Both from a financial stability perspective and the monetary policy perspective, the big challenge was to make the lending market work again. We saw that there’s nobody in the market who was able or willing to buy those non-performing loans. We decided to build up an entity to help clean the portfolio from the commercial banks.

This was not the only step what we have done that time. We started to use the systemic capital risk buffer (SRB) directly for non-performing commercial real estate loans, which was also a step to facilitate the market to clean the portfolio.
The idea was that first we make an entity which helps to clean the portfolio, second, we make a regulatory environment in which it is not favorable to keep those loans in the book because you have to have capital requirement directly to those exposure.

YPFS: I see. So, you mean to incentivize the entity to move the NPLs, or to...

Banai: Yes, it would’ve been a central entity to buy from the commercial banks the non-performing loans, collect them and then managing them.

YPFS: Well, it’s a phenomenon we see in other instances in our country. I can think of comparable ones. What was your takeaway from your experience leading this organization, what was your main lesson that you drew? How did it go? What did you think worked? What didn’t work in the Mark Zrt initiative?

Banai: In fact, the Mark didn’t really start functioning. It was very long process to establish the company, to convince the European Commission of the need for this company, to make negotiations with the European Commission about the pricing method of the company. The whole process was very long and after all, we sold the company. What we have achieved via Mark, although it occurred indirectly, was the awareness. They understand that sale of assets is needed. I think it helped to facilitate the market, although not directly. The introduction of the Systemic Risk Buffer (SRB) also helped the market, the SRB was a very direct regulation to motivate the participants to sell loans.

Of course, it was very important that the environment also changed. Growth got back and the environment became more favorable, the real estate market started to work, more participants started to invest in the real estate market, which also helped to clean those assets.

But I think the idea of Mark Zrt was good, it was able to help to facilitate the market. For sure, as this type of solution may have costs at the central bank, it is not riskless and should be carefully planned.

YPFS: How did you came to work on macroprudential policy and monitoring at the Hungarian National Bank?

Banai: The Financial Stability report that the central bank was doing from the early 2000s was an early version of macroprudential monitoring. We did not call it macroprudential monitoring, and there was no exact mandate for the supervisory authority and the National Bank of Hungary in this regard. The central bank had a macro view on the banking sector and mostly used this

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information for managing monetary policy. The micro supervision was in the supervisory authority.

In our financial stability report, we were analyzing the banking sector as a whole from macro point of view. If we had seen any risk, we had to consult with the Supervisory Authority or with the government, who had the regulatory power to step in.

From 2010 or 2011, the central bank of Hungary got some macroprudential mandate. From 2013 in October - when the whole Central Bank Act changed and also the supervisory authority merged with the National Bank of Hungary - we received a much stronger macroprudential mandate and we were able to regulate all the risk that we had seen.

Although, regulatory role was given much later but in monitoring during the autumn of 2008 was a big turning point. We started to monitor the liquidity of the whole banking sector and the change of the liquidity on a daily basis, and not just on the sector level but on a bank level as well. We built up a daily monitoring system, this was quite new. We made brand new daily reporting for real estate funds as well because in November 2008 a huge run on real estate funds occurred.

Also, although we had reports on non-performing loans, we started to dig much deeper. We started to differentiate between products, denominations as much as possible And this type of reporting was built up in a very short period of time in 2008 and 2009.

I would say the global financial crisis totally changed how we analyzed the banking sector. A further innovation was a new stress-testing framework. Before 2008, 2009, we didn't really have full-fledged stress testing, just sensitivity analysis was all what we have done. From 2008, we started to put together from scratch a full stress test framework, and for that reason we had to collect loan level data from the banking sector to build up models for credit risk. And it became one of the most important monitoring tools for us, which is also published in every financial stability report.

YPFS: How much and in what ways has macroprudential policy been important to Hungary? We know it in the US, a heavily financialized economy, that systemic risk can become concentrated in one institution. But please explain why has macroprudential policy became important for Hungary, not just something that the western economies invented and steered you to. Why has the stress testing become important? When we separate it from the FX, ...

Banai: It is hard to separate from the FX. My generation in the Hungarian banking industry will always have a very strong relation with FX lending. It really governs our thinking. That experience taught us the process of building up
huge risks. Our own toxic asset was the retail FX loan. FX lending was supported by a very risky funding structure with high loan-to-deposit ratios and strong reliance on the FX swap market. So, our thinking of bank risk will be always driven by this experience.

Thus, when we got the macroprudential mandate as a central bank, we started to use it very specifically for the Hungarian banking sector based on this experience. So, at first, we made regulations to avoid this type of behavior.

I wouldn’t say that we followed the international best examples, because we understood our own risks and we gave answers for our own risk. The foreign exchange funding adequacy ratio, in 2011, was among the first real macroprudential policy steps globally. The basic idea for the structure of the regulation was based on the NSFR suggested in Basel III. But we applied a tailor-made version for specific Hungarian risk and introduced it much earlier than any other countries.

Macroprudential policy was not something that we had to implement from EU level regulations. We were always very active in the macroprudential area, and we are still very active currently, and we’re following our own way.

YPFS: Given your emphasis on FX lending and all the recent credit facilities developed by global central banks, starting with the Fed's FIMA Repo Facility, where Hungary can access US dollars by providing Treasuries, is that something that Hungary would find useful or has found useful?

Banai: All the facilities that the big central banks are providing to smaller central banks are useful. These Repo facilities help at least to be able to get liquidity any time for high quality securities that central banks keep as reserves. But this is still just changing the type of liquidity from less liquid to cash. This is why I say that an FX swap would be more useful.

Besides that, the conditions are very important. FIMA is an overnight repo, which is what we have access to at the Fed. Due to its very short maturity – which is even shorter due to the time difference – we cannot rely on it. Moreover, in most cases, we need Euro cash, so if we use the FIMA we have to swap for Euros, and this makes it more difficult to use in real life.

YPFS: Sure. Again, on liquidity facilities, Hungary has sought IMF help before, but then IMF protection usually comes with unfavorable terms. The IMF has launched a rapid credit facility recently, which is geared to let's say to Hungary or other emerging market economies. Do you think that has helped? Do you think there’s been a good fix there, or is there more work to be done?

Banai: Investors may consider the agreement on an IMF facility positive as it can be a good backstop facility. But on the other side, it does have of a kind of stigma
effect on a country. It may imply that there is a hidden risk in the country. For this reason, a country should be very cautious to step into this type of agreement.

YPFS (ML): Regarding stress testing, something you pointed out that you started doing in 2008, please tell us about your experience. How has stress testing evolved and been important in the work of the MNB?

Banai: I was the team leader of the stress testing team from 2011 to 2013 then I became the head of Applied Research and Stress Testing from 2013 to 2016. I was responsible for stress testing for a long period, and in that period, we developed our stress test from almost nothing. There were several changes in the stress test, and I could talk about the evolution for hours.

At first, we had to put together a robust credit risk stress test as it covers the biggest part of potential losses. For this, we had to start to collect loan level data to be able to model PDs, LGDs. Also, it was challenging to develop a good P&L model, as we don't have too many banks and long enough time series.

One very important step was to put together a liquidity stress test. Probably it sounds silly, but the first challenge was finding the right measure what we can stress. In a solvency stress test, it was obvious to use capital adequacy but there was no common international liquidity regulation in power for long, so the first task was deciding about the right measure. From December 2011, a short-term liquidity ratio was introduced for Hungarian bank which was similar to the LCR, and it became main measure of liquidity. Later stress tests were calculated on LCR, the potential effect of bank runs, FX depreciation or rate hike was calculated and published for many years. We cannot emphasize enough the usefulness of these type of exercises these days. It was an important step of our stress testing framework.

Development of the stress test underlined the importance of data collection. In stress testing, it is 100% true that you have to collect as many data as it is possible and as granular as it is possible.

An advantage of our framework is that we made it possible to compare our stress test result in time. So, we not only have a number about the present state of the banking sector in a potential stress environment, but we made it possible to see over time how the stress-absorbing capacity of the banking sector changes.

YPFS: That is most interesting. What do you consider to be the main lesson or lessons from your experience in response to the global financial crisis and working on these initiatives?

Banai: I think what we understood better that, as a small country, it is not in our hands what will happen in the world and how the environment will evolve.
For this reason, we cannot afford to build up risks in the banking sector. We as the central bank and macroprudential authority, have to ensure the health and safety of the banking system all the time. In two, three years’ time, FX loan portfolio was built up and for sure it was unfortunate that the global financial crisis started just after. But this example reminds us that even two or three years of too loose environment can result risks with which you have to work for 10 years or so.

We have to keep in mind that dealing with the negative effects of risks built up by the banks is much harder than avoiding them, and the overall real economic effect is negative. Importantly, the motivation of individual banks is very different from the interest of the whole system. A CEO of a commercial bank said bankers were procyclical by nature. My answer was that it didn’t mean it was right. For the sake of the whole system central banks have to limit them.