

FX mortgages, housing boom and financial stability - a case study for Poland

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Abstract

Poland underwent a quick transition of the economy, but its housing market and housing policy did not change quick enough. The economic growth that followed the EU accession lead to a rising housing demand, which was fuelled by quite cheap FX denominated mortgages. Those allowed many households to satisfy their housing needs quite quickly, but lead to a price boom, that was followed by oversupply. As the housing needs started to be met, the oversupply lead to falling house prices, which in real terms reached pre-boom levels. The recent global and European economic turmoil made the Polish currency depreciate. The effect was very strong when the SNB abandoned the EUR CHF peg and some mortgage takers found themselves under water. Still the majority of the mortgage takers made a good deal and the banking sector remained stable. We present a case study, explain how the FX lending emerged and how we managed to stay safe.

JEL classification: E32, E44, E37, R21, R31

Key words: Housing market cycles; housing finance; FX market

1. Introduction - Importance of the residential market for the economy

Real estate plays a significant role in the economy, both on a micro- and macro-economic scale and influences the financial system. Historically, land's importance as the fundamental factor of production decreased to the benefit of buildings. The development of modern civilizations and economies means urbanization, namely development of infrastructure, residential and commercial real estate, with the residential real estate usually playing the most important role on the market. This development is supported by the expansion of the financial sector, ensuring its long-term financing both during the construction phase as well as the maintenance and commercialization. A substantial part of the real estate is loan-financed, which means that the developments in the financial sector in the recent decades, including the growing size of banks, were largely driven by the development of the real estate sector.

Housing markets and housing finance have undergone remarkable changes over the past decades. With the increase of household's disposable incomes resulted in a rapid increase in the popularity of owner-occupied housing . At the same time, there has been a sig-

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nificant increase in indebtedness of private households. Mortgage-backed assets can reach up to 50% of the assets of the banking sector and 100% of GDP, becoming a decisive factor for the stability of the banking system. When the system of home purchase financing is more developed, mortgage-backed assets are bought investment and pension funds. The poorly functioning cyclical housing market combined with the financial sector leads to crises, which, depending on the design of the financial system may resemble more banking crises or financial crises

The importance of the residential market for the economy is largely related to the importance of housing as a good for living. The systems aimed to meet housing needs differ a lot across EU countries. They generally encompass the commercial rental housing, broadly understood as the social housing and the owner-occupied housing. Irrespective of considering housing as a durable consumer good or as a capital good generating a flow of housing services, the needs it satisfies are among fundamental needs. Households' expenditure on home maintenance accounts for 10-15% of their incomes, which translates into an aggregate demand in the economy. The housing construction sector contributes 3-6% of GDP. As homes are usually purchased on credit, housing expenses include the repayment of loans (around 20% of income) which, in turn, finance the banking sector. The total expenses amount to 25-35% of households' incomes. As a result, housing expenses can absorb a significant portion of households' income. This translates into a high politicization of the housing sector, the housing market and the financial system. Sometimes politicians decide to make ad-hoc changes, which complicate the functioning of the system. Rental markets are an important prerequisite for a flexible labor market and therefore playing a key role in reducing unemployment. Furthermore, housing is a source of tax revenue, usually at the local level, both in the form of periodical taxes as well as those associated with the transaction or a change in value. However, due to its political bias it is usually treated in a lenient way for tax purposes. Due to its complexity, the sector is subject to many regulations, including, for most part, specific regulations of national character, concerning the transfer of ownership and including charges, registration, enforcement, taxation, social protection of tenants, etc.

Price changes translate into changes in the value of the housing stock, which represents a significant proportion (up to 50%) of fixed assets in the economy. The ensuing changes in prices have multidirectional, direct and indirect, repercussions on the whole economy, affecting mainly the behavior of households (demand for housing, wealth effect, borrowing capacity) and businesses (labour costs). One of the areas directly impacted by these changes is housing construction, which usually generates 3 - 5% of GDP, and its workforce has a 3-5% share in total employment.

Yet, the currently most important channel of this interaction is the financial system. Price changes cause changes in the valuation of mortgage-backed financial assets and may, through the financial accelerator mechanism in the developed markets, cause problems in the sector and in the whole economy. On the other hand, as shown by the long-term experience, the financial sector, apart from changes in fundamental factors and speculation, may be

an important factor increasing tensions and volatility in the residential sector which affect the whole economy.

For owner-occupied housing to satisfactorily meet mass consumer needs we need a liquid and efficient housing market, which, in turn, requires stable and long-term financing. This is done through a dedicated financial system built with a significant participation of the state. Currently the EU is dominated by a system based on universal banks and funding from deposits. There are also specialized and wholesale systems (involving financing outside the banking system). In the case of a developed financial system, the effect of the financial accelerator is generally stronger. Financial crises due to their scale and government interventions often turned into public finance crises and sometimes into foreign exchange crises (FX loans).

2. Case study - FX mortgage in Poland

The Polish financial and banking system underwent three shocks, that partially coincided and changed its structure permanently: * the hyperinflation and the destruction of the economy, ** the liquidation of the centrally planned economy and the creation of a market economy and *** the EU accession that coincided with a credit boom and a real estate boom and FX denominated loans, predominately in CHF.

In the 90's, after the breakdown of the communist system Poland managed to create from scratch a market economy and a simple and effective banking sector that relied on large universal banks. Most banks were privatized and later sold to the largest European and US banks. Those banks financed their operations mainly with short-term deposits and located their funds into corporate and consumer loans. At the same time the long-run housing policy was oriented towards OOH and housing loans. Together with the help of international institutions various reforms of the system were introduced, which allowed to develop the banking sector further. However, the development of mortgage loans was hindered by a high inflation (19,9% in 1996 and 7,3% in 1999) and the lack of know how. In order to solve this problem at least to some extent, OOH housing was financed in the 1990's with double index mortgage loans and FX denominated loans (mostly USD), which introduced FX lending to the market. Because the economic transformation started with a strongly under-valued PLN, the currency appreciated continuously in the later periods. In consequence consumers had a low perception of the FX risk and FX lending became popular. Anyhow, housing demand and OOH construction were rather limited and the developer sector very weak. The mortgage market developed only after 2000 when inflation decreased, economic growth and incomes increased and also migration to large cities started. Those factors were augmented by the growth of new households and also by the delayed housing demand. Because the mortgage interest rate for PLN loans was, due to the high inflation, quite high and the mortgage affordability of households quite low, Polish banks started with the help of their foreign owners to issue FX denominated mortgages. Most FX denominated mortgages were denominated in CHF, the cheapest currency that was available at that time. Banks used mostly FX

swaps and to a lesser degree credit lines. Even though the markup was high, the mortgage rate for denominated mortgages was at least two times lower than those of PLN loans. Because the amount of mortgages in universal banks was rather small, they were not regulated, while the quite conservative regulations affected only mortgage banks, which did not and still do not play any major role for the market.

Consumers expected house prices to rise after the EU accession and the demand for new housing rose amidst a tiny developer market, and in consequence house prices started to rise in 2003. Loan disbursements and house prices accelerated further in 2005 and during the 2005-2007 period the house prices and the amount of outstanding mortgages doubled. Housing developers were not able to deliver enough housing units to the market and a speculation of pre-sale contracts and construction projects began. When house prices rose, the affordability of households to finance them with mortgages declined. Banks wanted to sustain the mortgage demand and eased credit granting criteria, especially those concerning the income buffer. Even though the markup on mortgages was low, banks expected to bind the client for a long time and to sell him other financial products.

Figure 1 House prices in 7 biggest cities, housing loan agreements in 7 biggest cities, on quarter basis (I 2003=100)

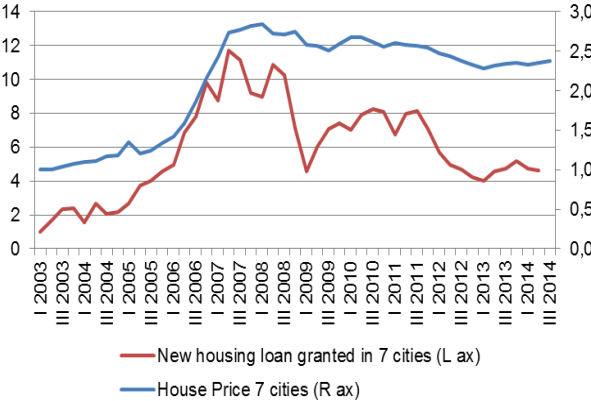


Figure 2 Housing loan receivables (bln PLN) and regulations

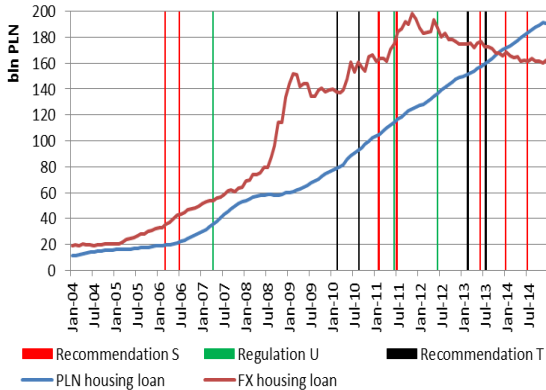
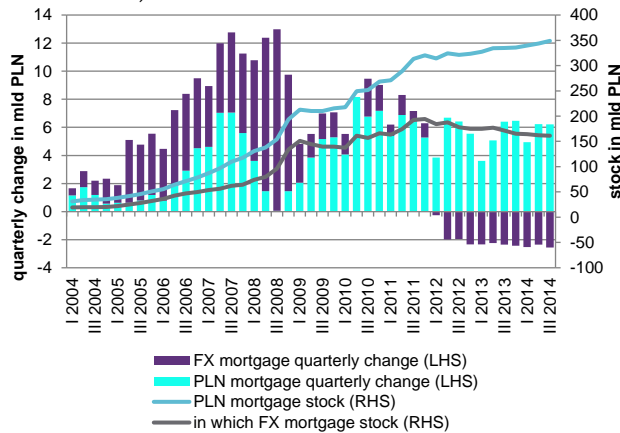
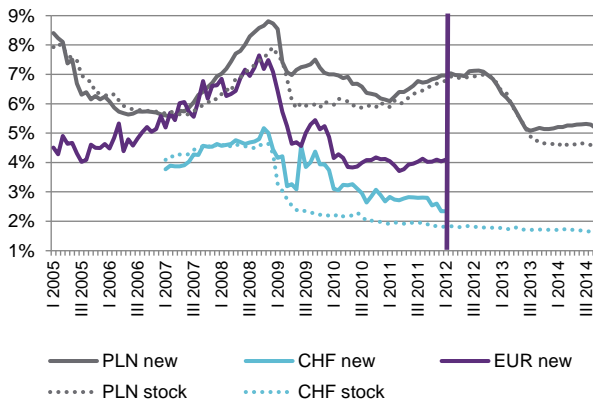


Figure 3 Balance and quarter-on-quarter changes in housing loan receivables from households after adjustments and the currency structure of quarter-on-quarter increases in housing loan receivables (in PLN billion)



Source: NBP.

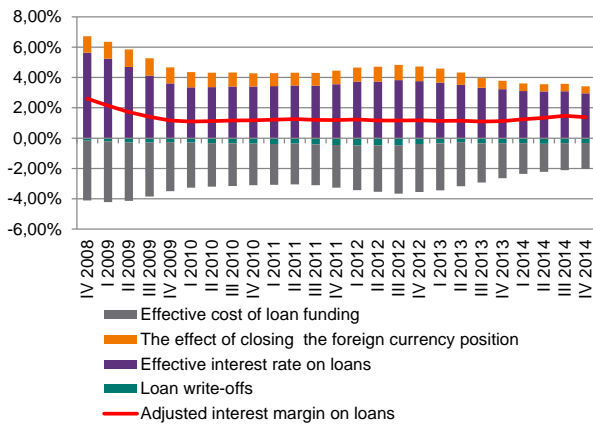
Figure 5 Interest rates on housing loans for households in Poland



Note: foreign currency loans practically ceased to be granted in 2012.

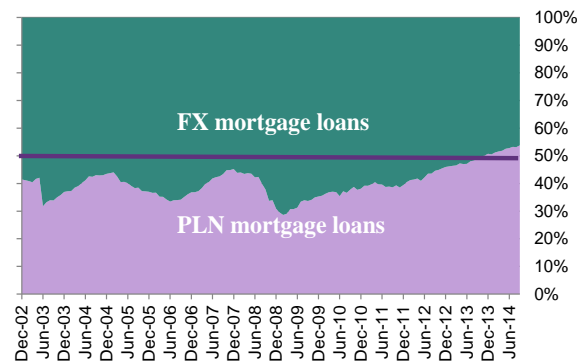
Source: NBP.

Figure 7 Estimated profitability of housing loans



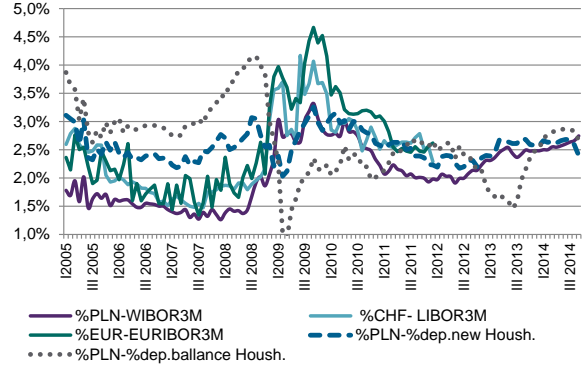
Source: NBP.

Figure 4 Structure of housing loan receivables from households resulting from housing loans (in %)



Source: NBP.

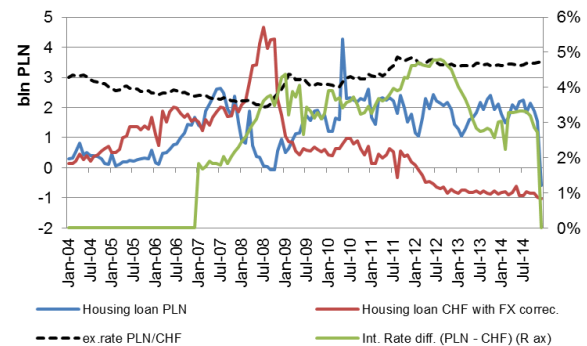
Figure 6 Bank margins (to WIBOR, LIBOR, EURI-BOR 3M) on new housing loans



Bank margin is the difference between housing loan rate (NBP data) and the LIBORCHF3M rate, the EURIBOR3M rate or WIBOR3M rate.

Source: NBP.

Figure 8 Monthly change of receivables from households with a housing loan



Source: NBP.

The fast increase of mortgages in connection with rising house prices made the Financial Supervisory Agency to react. The emphasis was put in the first place on the reduction of the rising credit risk that was connected with the repayment of the mortgage and the value of the collateral, which could deteriorate due to FX shocks, distressed sales and falling house prices. In 2006 the FSA announced Recommendation S and other recommendations in the following years, which introduced more conservative rules on the calculation of the loan affordability, risk weights and the LtV levels. In order to curb the loan disbursement and increase the loan quality, both demand and supply side restrictions were used. Since July 2006 Recommendation S made banks that issued FX denominated loans to calculate the mortgage affordability of their clients as if they took a PLN loan (higher interest rates) and to increase the mortgage value by 20% in the calculation. In 2007 the risk weight for the part of the FX denominated loan where the LtV was below 50% was increased from 35% to 75%. At the same time, the risk weight for this part of the PLN loan was lowered to 35%. In both cases the risk weight for the part of the loan that corresponds to 50-100% of the LtV remained the same and stayed at 100%. In July 2011 the FSA introduced a DTI cap of 42% for FX denominated loans and in June 2012 the risk weight for them was increased to 100%, irrespective of the LtV level. The FSA stopped practically to use the DTI cap for FX denominated loans, but sustained the rule that was introduced in 2006, that during the affordability calculation the DTI for FX denominated mortgages should be 20% higher than that for the calculation of PLN mortgages. Another version of Recommendation S that came into force in June 2014 forbids to grant FX denominated loans to consumers who cannot hedge against the FX risk, thus who do not have a permanent income in the currency of the mortgage.

The regulations that were introduced in 2006-2007 had no visible effect on the mortgage amount or the house prices. Their introduction was not well accepted by banks, consumers and a large fractions of politicians. The FSA was subject to critique and its place, structure and tasks were discussed and changed in 2008. This strongly affected the effectiveness of its work. After 2008 and the *Global Financial Turmoil* the banking sector started to curb FX lending by itself and because it was forbidden to grant FX denominated loans to people who do not have income in this currency, banks finally started to grant only PLN loans.

Even though there were significant price increases in the largest cities in Poland, the scale of the problems and tensions was too little to cause any harm to the housing sector and the financial sector. The financial system worked as a classical financial intermediary and did not fuel the financial accelerator, which causes that shocks flow to other markets and enforce each other. A significant part of the FX denominated loans was financed with short-term FX swaps through the foreign banks that owned the domestic banks. Those banks sustained the financing of their subsidiaries, and thus the main effect of FX shocks was the growing demand for PLN denominated deposits and the growth of their interest that could balance the FX shock. This translated into higher costs of PLN loans. In some few cases the help of the NBP was necessary, which issued swaps that were backed by the NBP foreign reserves. In the next years the FSA made banks to open long-run credit lines between domestic banks that issued FX loans and their parent banks, in order to decrease the liquidity risk. Banks

were also frightened by the financial crisis in the US and curbed its mortgage disbursement, which made house prices decline over the next years. The disequilibrium in the housing market was absorbed over the next years and the only lasting effect of the boom was large portfolio of CHF denominated loans, which amounts to around 40 bln CHF or 10% GDP and 11% of the banking sector assets.

The analysis of the banking sector performer by the NBP and the FSA show that the regulations improved the quality of this loan portfolio significantly. The quality of FX denominated loans was better than that of PLN loans and later FX shocks did not alter their quality significantly. One important determinant of this outcome is the fact that Recommendation S forbid banks to grant FX denominated loans to those households, which could not afford PLN loans, a practice they applied earlier. Also current NBP research shows that FX denominated loans were granted to households who had a better financial situation than those who were granted PLN loans.

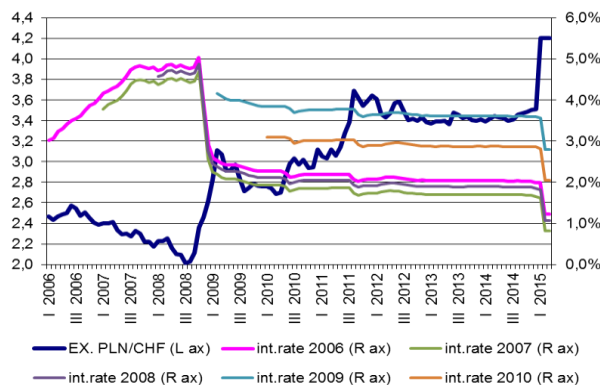
Another factor that made the FX denominated loan portfolio so resilient to socks was their interest rate type and the current economic situation of EU countries and the actions of their central banks amidst the crisis in the EU. The most common mortgage form was a mortgage with a fixed markup and an interest rate that was indexed to the LIBOR. The FX shock was cushioned by the drastic reduction of the LIBOR, as central banks loosened their monetary policy to deal with the economic problems. In consequence the CHF/PLN exchange rate and the interest rate level moved in opposite directions, and the increase of the debt service was annihilated by the fall in interest rates. For most clients the cost of the FX denominated mortgage were lower than those for PLN loans, which had an impact on the quality of those loan portfolios.

Table 1. List of Recommendations concerning FX denominated loans

Act	Announcement	Implementation	Action
Recommendation S of the Polish Financial Supervisory Authority	03.2006	07.2006	For the assessment of the creditworthiness of the clients taking FX mortgage loans bank should (i) assume the same interest rate as in the PLN and (ii) 20% higher credit value than the face value.
Regulation 1/2007 of the Polish Financial Services Authority	04.2007	04.2007	Risk weights for the part of the effectively collateralized part of the loan(that is up 50% of the real estate value) increased from 50 to 75%.

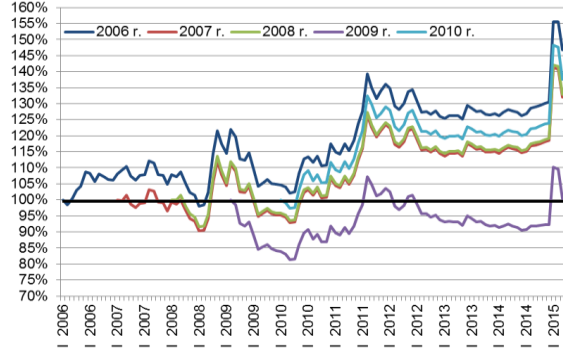
Recommendation T of the Polish Financial Supervisory Authority	02.2010	08.2010-12.2010	50% DTI for the individual earning less than average salary in the economy, 65% for others
Recommendation S of the Polish Financial Supervisory Authority	02.2011	07.2011	42% DTI limit for FX mortgage loans taken by private persons
Regulation 153/2011 of the Polish Financial Services Authority	06.2011	06.2012	Higher capital requirements for FX loans - rise in risk weight from 75% to 100%
Recommendation T of the Polish Financial Supervisory Authority	02.2013	07.2013	No explicit DTI limit for all non-mortgage loans, both FX and in PLN
Recommendation S of the Polish Financial Supervisory Authority	06.2013	01.2014, in case of commercial real estate mortgages - 07.2014	No new FX lending for clients without a natural hedge (i.e. income in the foreign currency)

Figure 9 Exchange rate PLN/CHF and interest rate for successive vintages (loan agreement in the January, for 25 years, equal repayments, interest rate = LIBOR CHF3M + margin)



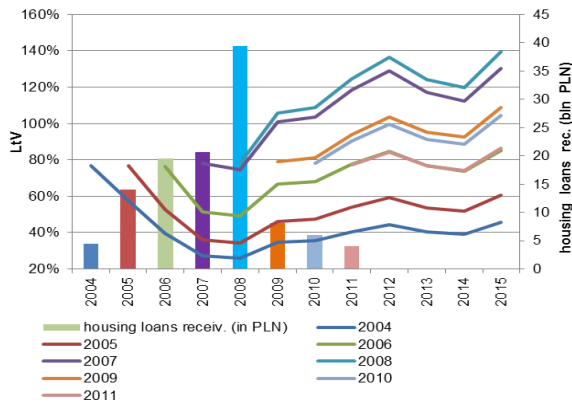
Source: NBP.

Figure 10 Current repayment to the first (calculation bases on: loan agreement signed in January, for 25 years, equal repayments, interest rate = LIBORCHF3M + margin)



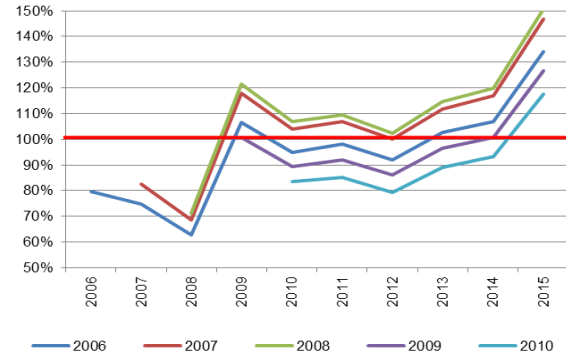
Source: NBP.

Figure 11 LtV and annual receivables of housing loans (housing purchased in specified year)



Source: NBP.

Figure 12 Monthly repayment of housing CHF loan (in PLN) versus housing PLN loan (housing purchased in specified year)



Source: NBP.

2.1 The recent real-life stress-test

Another test came in January 2015 when the SNB stopped to defend the CHF exchange rate, which resulted in an unprecedented appreciation of the CHF against the PLN, additionally taking place during an election period. So far the FX denominated loan portfolio performs well, however the FSA made steps to make the absorption of this shock easier. They recommended banks to take the negative LIBOR interest rate into account for the indexing of the mortgage rate; to allow a cost-free change of the FX denominated loan to a PLN loan at the current NBP rate; to lower the spread during FX transactions that are used to pay back the loan; not to ask any more for additional insurance when the LtV exceeds 100%; to allow for a break in the service of the debt and to allow to extend the mortgage period. Also the Polish Bank Association recommended similar actions to its members.

According to FSA information, the Polish banking sector is highly and well capitalized and passed positively a stress-test scenario under which the CHF can cost 4,5 or even 5 PLN. Also a potential increase of the CHF LIBOR to 2% should not cause any major problem, as the FSA states. The FSA assumes that no additional measures are necessary and factors that will make the repayment of this portfolio easier are the significant income growth in the last years and the expected appreciation of the PLN. A negative consequence of the current situation is the fact that many FX denominated loan lenders cannot sell their home without materializing a significant loss.

The FSA offers an alternative solution to the problem. It allows to change the denomination of the loan from CHF to PLN, and to distribute the costs equally between the bank and its client, where the process would last until the loan is repaid. One can assume that most lenders will not use this option as they expect an appreciation of the PLN in the long run.

3. Comparison of Poland and Hungary – conclusions

The international experience with large-scale FX mortgages for residential and commercial real estate is quite bad, in general. They add to the pro-cyclicality of the market and when used as a major source of funding, they generate huge problems to the macroeconomy and the financial stability. Real estate crises lead to banking crises, which at the very end have to be absorbed with public money and further add to the economic slowdown.

The Polish experience is similar, however not as strong as that of Hungary. Poland observed a way smaller problem, because of its better economic conditions, macroprudential regulations and also some luck. We explain the reasons, comparing the two countries.

Let us start with the similarities. Both countries belonged to the socialistic block, underwent the economic and political transition in similar times. Historically, Hungary had a slightly higher GDP per capita than Poland, but this was unimportant in the discussed case. Both countries used a mix of World Bank and USAID recommendations to transform the financial system and an own populist housing policy (political announcements that were not put into life, uncontrolled subsidies, costless privatization of the housing stock). In Hungary the living conditions were much better than in Poland, thus there was less demand for housing loans and new residential construction. However, there were problems with badly controlled subsidies, the budget deficit and inflation. In consequence of the international programs, both countries introduced mortgages with a delayed payment (DIM, DPM) and growing principal, and later also FX denominated loans. Those were granted on a mass scale, and local banks secured their loans from their foreign owners with CIRS and FX swaps.

There were also significant differences, which were later reflected in the problems both countries faced. First, FX loans in Poland amounted to 11% GDP, while they amounted to around 22% of GDP in Hungary. Secondly, while in Poland those loans were nearly only mortgage loans, in Hungary they were used also for car and consumer finance. They were wide-spread in Hungary, while in Poland, especially since 2006 due to Recommendation S they were granted only to the richer part of the population. The type of the mortgage product played also a major role, as in Poland the interest rate was the LIBOR plus a margin (initially 2.5-4 pp, later 1.5-2.5 pp), while in Hungary the interest rate was fixed for a longer period and calculated internally by the bank which issued the loan. In consequence, the depreciation of the Polish Złoty was mitigated by the falling LIBOR rates, while in Hungary the depreciation of the Hungarian Forint led to a direct and significant increase of the monthly mortgage payment. In 2006 the CHF interest rate for the client was around 4% in both countries, but in 2014 it fell to 1,5% in Poland and increased to 6,5% in Hungary. This translated into a decline in the quality of the loans, and while the rate of non-performing loans remained in Poland below 3%, it rose to 24% in Hungary. The FX loans portfolio in Hungary generated significant losses for the banks, their ROE was estimated at -27%, while in Poland they remained profitable, with an estimated ROE of 11%. The economic situation added to the problem. In

Poland real income rose by 25% during 2006-2015, while it stagnated in Hungary. This rise in income proved to be a good buffer against the increase in the payments for older loans, that were granted on risky basis. Poland had a stable economic and public finance situation, thus the exchange rate shock was only temporary.

For Hungary the problem was so severe that the government went for a shock therapy, which was costly to everybody: the banks, loan takers and the rest of the population. In Poland the problem was a matter of the richer part of the population, and as surveys show, the rest of the population is not willing to help at a larger scale. Also banks do not want to bear the costs and losses, however the FSA decided to freeze this year's dividend payment for banks that have large FX loan portfolios. No one knows about the future CHF/PLN rate, and thus about the risk, should be a mandatory conversion of the CHF loans be introduced. One has the impression that *de facto* everybody agrees silently to keep the *status quo* and to help at a small scale to mitigate the short-run extraordinary costs. In consequence, we conclude that Poland will have to deal with this problem for many more years.