

Chapter 8

The Implementation of Borrower-Based Measures: The Case of the Czech Republic



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Abstract The article deals with the implementation of borrower-based measures within the framework of the macroprudential policy in the Czech Republic. The contribution is threefold. Firstly, we show the activation of instruments relating to mortgage market and house price development, which have gained strong growth during the last 5 years. Secondly, we discuss the Czech National Bank's reaction to the COVID-19 crisis in the form of active instruments targeted at borrowers, which led to the abolition of debt-to-income (DTI) and debt-service-to-income (DSTI) ratios. Finally, we provide a view on the effort to incorporate these instruments into the national legal framework.

Key words Czech National Bank · Macroprudential policy · Borrower-based measures

8.1 Introduction

The global financial crisis (GFC) of 2007–2009 has resulted in a greater focus on the stability of the financial system from both regulators and policymakers. Achieving financial stability became another important goal of central banks in order to safeguard the resilience of the financial sector. Lombardi and Schembri (2016) and Cao and Cholletec (2017) explain this target involving the utilization of new instruments to underpin the financial system. In line with this, macroprudential policy instruments became the toolkit used to achieve this objective. The maintenance of the stability of the financial system as an important goal safeguarding the main functions of the whole system amid the coronavirus crisis was explained by Restoy (2020).

The European Systemic Risk Board (ESRB) (2013) proposes that one of the goals of the macroprudential policy is to reduce the increasing systemic risk resulting from

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excessive credit growth, in order to keep the financial system stable. In this context, the ESRB (2013) has recommended the implementation of several instruments, including borrower-based measures.

Borio and Restoy (2020) demonstrate the importance of prudential regulation in the aftermath of the coronavirus crisis, which has made borrowers more vulnerable. The authors, in this context, emphasize the need for a prudential approach during the economic downturn.

The rapid increase in the Czech mortgage market has been discussed in recent years (Mandel & Teplý, 2018; Czech Banking Association, 2020). In this context, the Czech National Bank (CNB) has emphasized the need to focus on household debt development, which is mostly associated with mortgage debt. In line with the above-mentioned macroprudential objective, the central bank has implemented borrower-based measures covering limits on loan-to-value (LTV), debt-to-income (DTI), and debt-service-to-income ratios (DSTI).

Blahová (2019) explains that the instruments have a positive impact on the demand side, i.e. the borrowers, which are constrained when drawing loans. The use of these measures leads to an increase in the level of their resilience because of the lower level of their commitments resulting from exposures secured by real estate and their higher resilience to default. On the other hand, the implementation of the measures also favors the credit institutions because of the higher likelihood of debt repayment. The use of instruments aimed at borrowers, besides other measures, and their impact on the demand for financing were shown by Claessens (2014). In this context, the ESRB (2014) highlights the effects of these measures in light of the lower probability of borrowers' defaults and lower loss given default, which is a result of a more direct form of this regulation when compared to other macroprudential measures (for example, additional capital requirements).

Beneš et al. (2016) show LTV procyclicality and recommend the activation of other limits, such as DTI or DSTI, at the same time. Bierut et al. (2015) bring very similar findings and confirm the importance of the usage of LTV and DSTI together. Nier et al. (2019) present the positive influence of an active DSTI limit on the consumers' probability of default, i.e. lower default rates. This analysis is based on Romanian data set and shows the sensitivity of the probability of default to the DSTI limit for consumer loans and mortgage loans separately, which indicates different policy implications when setting up the limits. CNB (2020a) introduced the new methodology for household stress tests in 2020. The research showed that households with DSTI above 40% and DTI higher than 8 were highly influenced in a stress scenario and loans with DSTI and DTI above these thresholds can be treated as very risky.

In line with the literature review, the first aim of this contribution is to provide a view on the implementation of limits with respect to mortgage debt development and house price changes. The second objective of the article covers the CNB's reaction to the COVID-19 crisis in the form of borrower-based measures and its effort to set up those measures in accordance with legislation.

Table 8.1 Data used in the analysis

| Variable | Period (frequency) | Source |
|--|---------------------|---------------------|
| Total household debt (outstanding) in billion CZK | 2014–2020 (monthly) | Czech National Bank |
| Mortgage loans to households (outstanding) in billion CZK | 2014–2020 (monthly) | Czech National Bank |
| Total housing loans to households (outstanding) in billion CZK | 2014–2020 (monthly) | Czech National Bank |
| Newly issued mortgages to households (volume) in billion CZK | 2014–2020 (monthly) | Czech National Bank |

Source: Author

8.2 Data and Methodology

This paper contains a descriptive analysis used as a primary toolkit and based on data sets covering household debt (especially mortgage debt) and house prices. Table 8.1 provides more detailed information about the data used in the analysis and the sources.

8.3 Empirical Analysis

As Fig. 8.1 shows, mortgage loans to households make up the majority of household debt. The figure also shows that the outstanding part of the observed loan categories has increased during the last 6 years, and the cumulative change in the mortgage market from 2014 to the end of 2020 reached 68.5% when the total stock of household mortgage debt reached 1.34 trillion CZK. From the perspective of the changes in housing loans (covering mortgage loans and other consumer loans for house purchases), the year-on-year changes varied between 6% and 9%, with the lowest change occurring in 2019 (6.7%). The strong growth in household debt in the observed period has been evaluated as a potential risk to financial stability due to the level of indebtedness of the household sector. Due to the high demand for housing loans, the central bank decided to activate borrower-based measures in line with its objectives.

Table 8.2 presents the development of the number of implemented measures and their limits. The CNB (2015b) implemented the LTV ratio in 2015, recommending that the limit should not exceed the level of 100%. However, the central bank also pointed out that the share of loans with LTV exceeding the 90% threshold should not be higher than 10% of the total volume of loans granted in the previous quarter. The CNB (2015a) presented the reasons for the implementation of the LTV in its financial stability report.

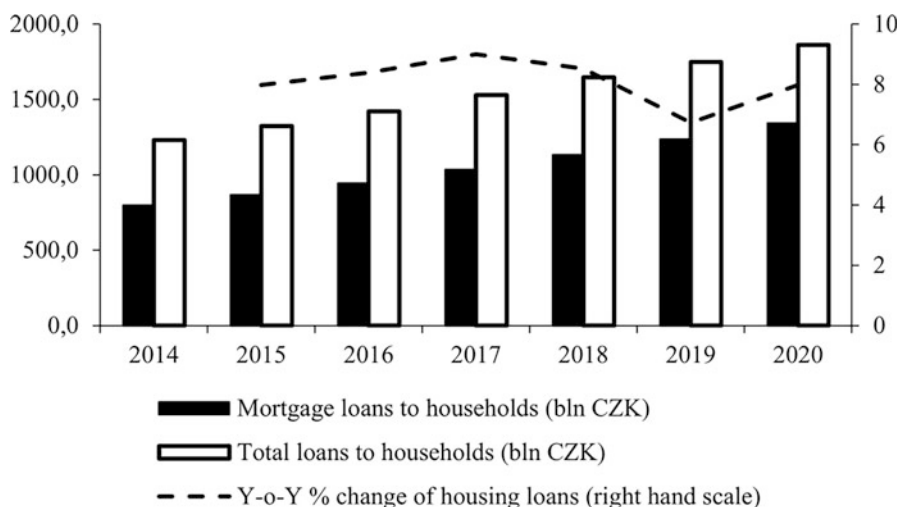


Fig. 8.1 Development of household debt. (Source: Author based on CNB, 2021)

These results confirmed the growing pace of housing loans to the household sector since 2013, which was caused particularly by the low level of interest rates. This evolution was also supported by the easing of lending standards, which made credit more accessible to borrowers. Moreover, the dynamics of credit recovery indicated a shift in the financial cycle, which was also encouraged by a moderate overvaluation of house prices (2.5% at the end of 2014). As a response, the CNB (2015a) introduced the LTV limit to serve as a preventive measure against the potential accumulation of systemic risks, in line with the ESRB recommendation.

The continuing period of low interest rates was considered by the CNB (2016a) as an indication for the banking sector to accept a higher credit risk in order to maintain profitability. This behavior of the banking sector led to a more noticeable declining tendency in credit standards in the case of housing loans.

The CNB (2016a) highlighted that the prudential approach to granting housing loans was crucial due to low interest rates and the easing of lending standards in combination with growing house prices and the optimistic future expectations of households. The central bank also emphasized the potential risk to financial stability resulting from households' vulnerability to potential income or interest rate shocks in the event of adverse scenarios.

Moreover, the results presented in the financial stability report confirmed that the limits for LTV values were not fully complied with by all banks because 4% of the total loan production exceeded the 100% LTV threshold in the third and fourth quarters of 2015. Some institutions did not adhere to the 10% exemption for loans with LTV higher than 90%. With regard to these findings, the CNB (2016b) decided to tighten the limits on LTV. This recommendation gradually lowered the threshold of the ratio and set the dates for the coming into force of the measures. The lowering of this cap was also a consequence of the house price development and the

Table 8.2 The activation of borrower-based measures in the Czech Republic

| | Loan to value (LTV) (exceptions as a share of quarterly issued loans) | Debt to income (DTI) (exceptions as a share of quarterly issued loans) | Debt service to income (DSTI) (exceptions as a share of quarterly issued loans) |
|---------------------------------------|--|--|---|
| Recommendation from June 16, 2015 | 100% (10% for loans with LTV > 90%) | No active cap | No active cap |
| Recommendation from June 14, 2016 | LTV 100% until September 30, 2016 (10% for loans with LTV > 90%) LTV 95% since October 1, 2016 (10% for loans with LTV 85–95%) LTV 90% since April 1, 2017 (15% for loans with LTV > 80%) LTV 60% for other real estate purchases | No active cap | No active cap |
| Recommendation from June 13, 2017 | LTV 90% (15% for loans with LTV > 80%) | Loans with DTI > 8 prudentially assessed | Loans with DSTI > 40% prudentially assessed |
| Recommendation from June 12, 2018 | LTV 90% (15% for loans with LTV > 80%) | DTI 9 since October 1, 2018 (5% for loans with DTI > 9) | DSTI 45% since October 1, 2018 (5% for loans with DSTI > 45%) |
| Recommendation from June 11, 2019 | Limits unchanged | | |
| Recommendation from December 13, 2019 | Limits unchanged | | |
| Recommendation from April 1, 2020 | LTV 90% (5% for loans with LTV > 90%) | No active cap | DSTI 50% (5% for loans with DSTI > 50%) |
| Recommendation from July 8, 2020 | LTV 90% (5% for loans with LTV > 90%) | No active cap | No active cap |

Source: CNB (2015b; 2016b; 2017b; 2018b; 2019b, c; 2020b, c)

continuing overvaluation of house prices. In addition, an LTV cap on other than residential real estate was introduced. The main objective of this activation was to reduce access to real estate purchased for investing purposes, i.e. for rent. The threshold was set at 60%. The recommendation also pointed out the need to focus on income ratios and set their internal limits to ensure a prudential approach to the granting of loans. On the other hand, no thresholds were activated.

In 2017, the CNB (2017a) stated that the overvaluation of residential real estate varied between 8% and 9% at the end of 2016. The growth in house prices and their estimated overvaluation are displayed in Fig. 8.3. In reaction to this result, the central bank stated that house prices were not in line with the fundamental factors determining the prices and that this was caused by a higher number of transactions with residential real estate financed by loans. These findings referred to the continuing risk of ratcheting up the spiral resulting from credit-fueled house prices. Although the recommended limits were adhered to until October 2016, the tightened caps since October 1, 2016, were not fully followed. The results presented in the Financial Stability Report in 2017 confirmed that the share of granted loans with LTV higher than 80% exceeded the allowed threshold (10%) by 10 percentage points.

The CNB (2017a) highlighted the potential risk to financial stability associated with DTI exceeding the level of 8 and DSTI surpassing 40% based on household stress test results. Moreover, there was not confirmed that higher risk associated with granted loans was not projected into the level of lending interest rates. The role of financial intermediaries was confirmed as another cause of risk because they provide unsecured loans to avoid the limits set by the recommendations. However, the CNB, in cooperation with the Ministry of Finance (MoF), prepared a legislative proposal to change the Act on the Czech National Bank,¹ which would allow the central bank to set the caps under the law and to help implement these measures. These consequences led the CNB (2017b) to scale up the recommendation in the case of income ratios with high risk values (DSTI 40%, DTI 8). The scope of this recommendation was also extended to all consumer loan providers.

The ongoing dynamic of loans to households stayed strong during 2017. The CNB (2018a) emphasized the fact that the recommended limits on these loans did not cause a decline in newly issued mortgages, as had been expected. In that year, the stock of newly issued mortgages reached nearly 174 billion CZK. The volume of newly issued mortgages and their year-on-year change are presented in Fig. 8.2. On the other hand, the overvaluation of residential real estate reached approximately 14% at the end of 2017. The central bank also indicated that market conditions could be considered very attractive despite the active LTV limit. This referred, for example, to the low level of interest rates and strong income growth, causing an increasing demand for housing loans. These factors led to a rise in the average loan amount. From the perspective of the implementation of the borrower-based measures, the CNB (2018a) confirmed that limits on LTV were, on an aggregate level, accomplished.

In this context, the central bank considered the LTV cap to be sufficient and decided not to change this limit. Indeed, the CNB highlighted the rapid growth in house prices, which exceeded the average increase in household income. This state was evaluated as very risky for potential loan applicants because of rising debt commitments resulting from higher loan amounts. The expectation as to the number of loans granted to riskier applicants was reflected in the context of the higher

¹ Act No. 6/1993 Coll., on Czech National Bank.

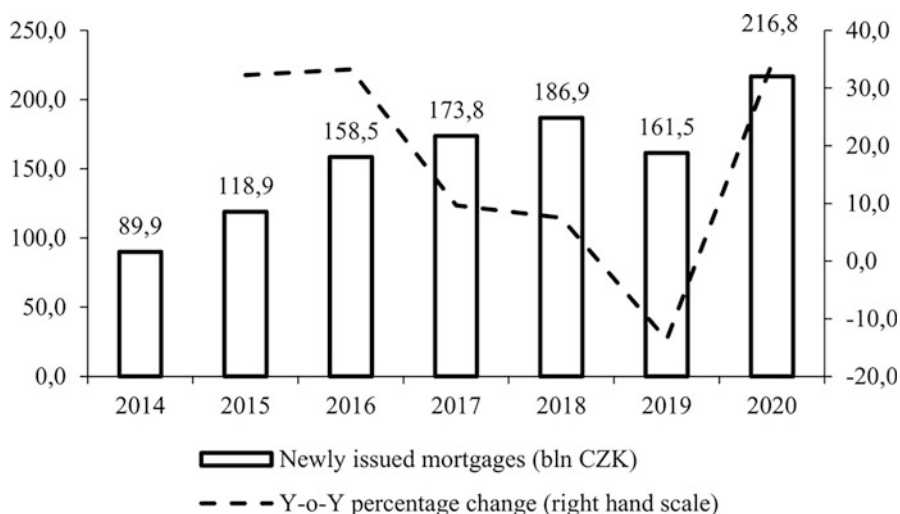


Fig. 8.2 The development of newly issued mortgages. (Source: Author based on CNB, 2021)

vulnerability of households under worsening market conditions. The potential deterioration of the ability to service the debts was the reason for the change in the CNB's recommendation, which implemented the caps on DTI and DSTI. The CNB (2018b) recommended that DTI should not be higher than 9 and that DSTI should not surpass the threshold of 45%. The central bank also mentioned the effort to incorporate the macroprudential objectives connected with excessive credit growth into national legislation, as mentioned above.

The CNB (2019a) stated that the activation of income ratios did not lead to a rapid decline in newly issued mortgages. On the contrary, the volume of these loans was 7 billion CZK higher in comparison to the averages since 2015 in the third quarter of 2018 and 8 billion CZK higher in the fourth quarter. The effect of the activation of the caps was evident in the first quarter of 2019 when the stock declined by 9 billion CZK. This development can be justified by the frontloading effect associated with households' decision to apply for a loan before the activation of the new regulation. The CNB (2019a) also clarified that it is necessary to examine this development from the perspective of time, and the declining tendency of new loans can be explained by the high level of loans in the previous time periods, which serves as the basis for calculation.

In addition to a certain drop in the number of loans at the beginning of 2019, the central bank continued to highlight those market conditions that increase the risk to financial stability associated with growing household debt and the rising prices of residential real estate. On the other hand, the limits set by the recommendation were not changed in 2019. However, a potential tightening of the caps was communicated in the financial stability report for the following periods due to continuing house price growth.

The adjustment of the macroprudential ratios targeted at borrowers was revised in the first half of 2020. These changes resulted from the shift in market conditions due to the coronavirus outbreak, which affected the approach to risk evaluation. The limit on LTV was increased to 90% (earlier, it was 80%, with some exemptions), and the cap on DSTI was set at 50%. Apart from that, the limit on DTI was abolished. The new adjustments to the levels of each ratio entered into force on April 1, 2020. The CNB (2020a) proposed that the easing of standards should not lead to the imprudent granting of loans because of the expected negative effects on households' income associated with the coronavirus crisis. In spite of the coronavirus outbreak, the volume of newly issued loans stayed relatively high in the first half of 2020.

The CNB (2020a) explained the easing of regulation not only by the expectation of the banking sector's prudential approach when granting new loans. The conducted analysis showed that the income limits were largely respected during the previous periods. In this context, there were exemptions to the prudential approach to loan applicants due to income deterioration resulting from the crisis. In line with this, the CNB (2020b) decided to remove the DSTI limit with effect from July 2020. The differentiation of interest rates caused by different LTVs in certain cases and the expected conservative approach to the granting of loans during the pandemic can serve as a supporting argument. Ever since, the only active limit has been the LTV ratio, which is in force because of the level of house prices and their indicated overvaluation, which was estimated at 17% at the end of June 2020 (Fig. 8.3).

The worsening economic outlook and labor market did not affect the mortgage market significantly in 2020 (CNB, 2020d). As Fig. 8.2 shows, the volume of newly issued loans reached the level of 217 billion CZK, which can be considered a new

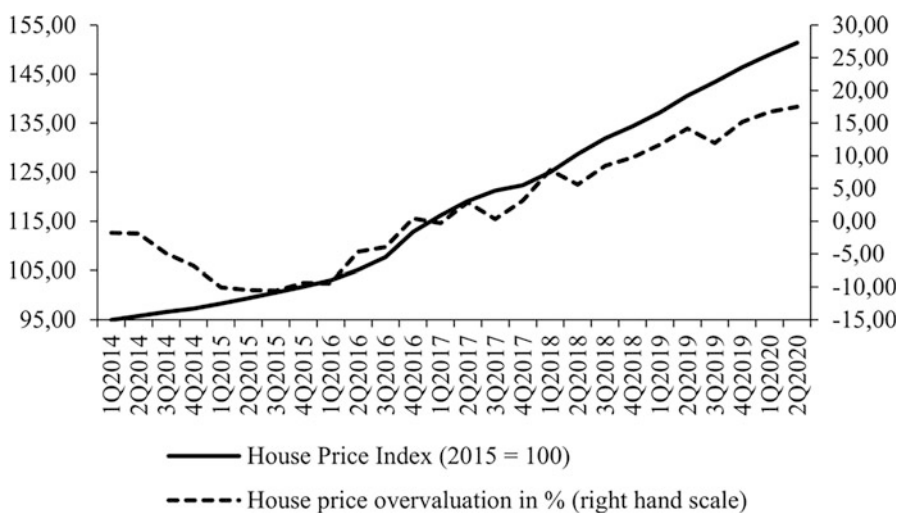


Fig. 8.3 The development of house prices and their overvaluation. (Source: Author in accordance with CNB, 2020d)

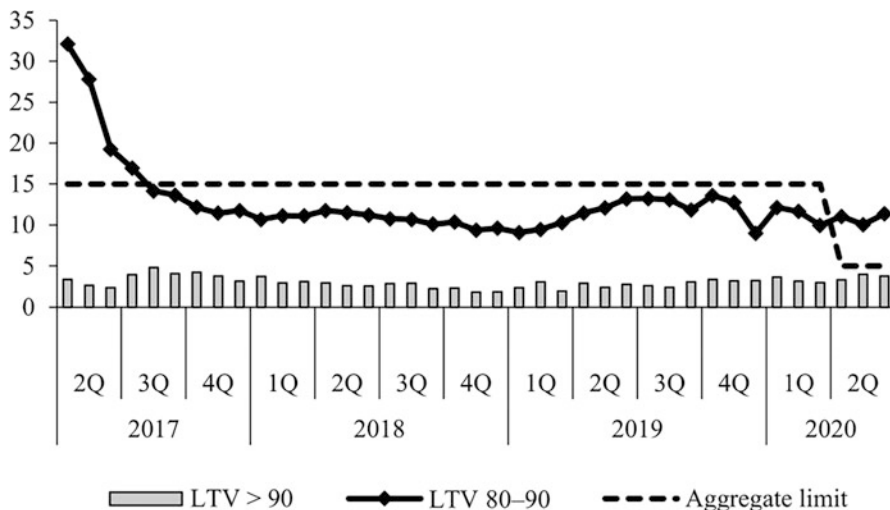


Fig. 8.4 Accomplishment of recommended loan-to-value limits. (Source: Author in accordance with CNB (2020d). Note: The data represents the share of loans of the total granted volume in each quarter)

historic maximum. This signals a very strong demand for home ownership, which was not weakened by the second wave of the coronavirus pandemic, which came in October 2020. On the other hand, the measures targeted at borrowers in order to reduce excessive credit growth have remained unchanged.

Figures 8.4 and 8.5 display the fulfilment of the recommended LTV and DSTI limits. It is obvious that the volume of newly issued mortgages with these characteristics was mostly meeting the recommended thresholds. However, the volume of newly issued loans secured by real estate continued in strong growth in 2021. The statistics showed more than 100% year-on-year growth of newly issued mortgages in March 2021, which indicates a still growing household demand for loans despite the continuing coronavirus crisis.

As mentioned above, the CNB, in cooperation with the MoF, was pressing for the incorporation of borrower-based measures into legislation. The main reasons for the incorporation of these instruments into law are associated with the scope of the institutions that would be obliged to adhere to the limits and the enforceability of adherence to the limits. At the current time, the CNB only recommends the levels that should not be exceeded when granting loans secured by residential real estate. As presented, the CNBs' findings confirmed that some institutions did not follow these limits, but the central bank did not possess any competence to make them meet the criteria.

With regard to a legal mandate, the central bank should have at its disposal an appropriate toolkit to safeguard financial stability, which can be disrupted by excessive credit growth. The incorporation of a borrower-based instrument into national legislation was emphasized in an ESRB warning to the Czech Republic in

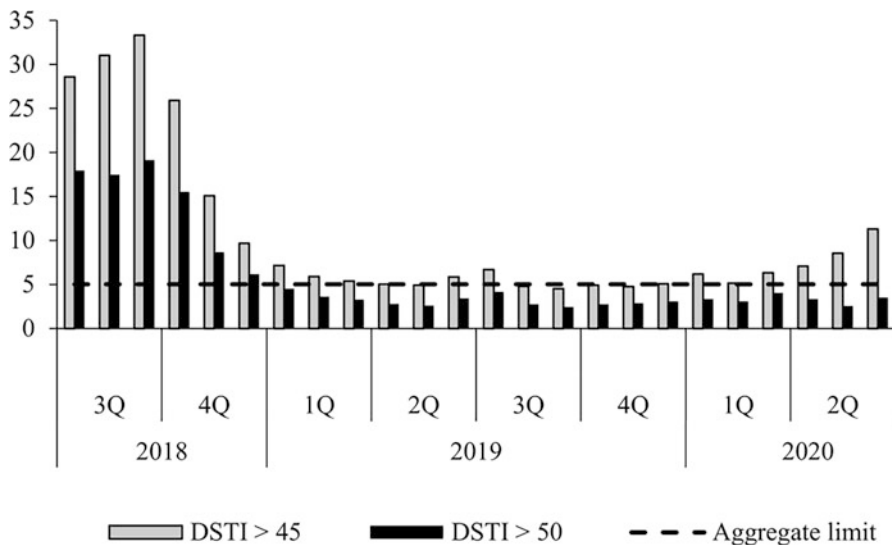


Fig. 8.5 Accomplishment of recommended debt-service-to-income limits. (Source: Author in accordance with CNB (2020d). Note: The data represents the share of loans of the granted volume in each quarter)

2019. The ESRB (2019) pointed out that a binding regulation is a more powerful tool for addressing vulnerabilities and covering all credit providers, thus ensuring aggregate adherence to the standards.

In this context, it is worth mentioning the current practice of using borrower-based measures in other jurisdictions. Based on ESRB (2021) data set, which was updated at the end of March, there were 23 countries with an active LTV limit (18 of them as a binding regulation). From an income ratio perspective, there were seven economies with an active DTI (or LTI)—five countries as a binding regulation. DSTI was active in 14 countries (recommended caps in five countries). Moreover, there were identified 22 countries of the European Economic Area that have incorporated these measures into national legislation (at least one cap). Nevertheless, the thresholds of each cap are activated as a response to country-specific situations, and the analysis of their developments in every single country is beyond this paper. However, the abovementioned information confirms the wide usage of these instruments in many countries under national law. These findings are in line with other research, for example, Fiala and Teplý (2021).

The abovementioned effort to incorporate borrower-based measures into national legislation (Act on the Czech National Bank) was already fulfilled due to the approval of Act No. 219/2021 Coll. amending Act No. 6/1993 Coll., on the Czech National Bank. The amendment was approved in June 2021 and has come into force since August 2021. At this moment, the CNB is justified to set up the LTV, DTI, and DSTI limits as a binding regulation.

8.4 Results and Discussion

The analysis showed that the Czech mortgage market has grown very strongly in the last 6 years, which the CNB considered to pose a potential risk to financial stability associated with excessive credit, which is accepted by the ESRB as a form of vulnerability of the financial system. The CNB has implemented several borrower-based measures in line with the ESRB's recommendation. The reaction of the central bank may be considered very active because of the yearly changes to the limits and revisions resulting from shifts in the market conditions.

One example of the CNB's active intervention is the revision of the thresholds and active caps in response to the COVID-19 outbreak. The central bank followed the change in market conditions in 2020 and abolished first the DTI and, finally, the DSTI cap as well. The only active instrument is the LTV limit, which reflects the level of house prices and their estimated overvaluation. However, it is possible to state that the activity of the mortgage market was not significantly affected by the crisis with regard to the supply of newly issued mortgages.

On the other hand, the CNB at present only recommends the thresholds of the instruments. The ESRB warned the Czech Republic about medium-term vulnerabilities in 2019 and showed the need to incorporate the instruments into the national legislative in order to safeguard the enforceability of adherence to the limits. The CNB, in cooperation with the MoF, has prepared a legislative proposal to implement this recommendation, and the legislative process has already been finished. At this moment, the central bank can implement the measures targeted at borrowers as a binding regulation, which should increase the efficiency of this regulation when fulfilling the goal of financial stability.

8.5 Conclusion

This article deals with the implementation of borrower-based measures in the Czech Republic in relation to household debt and house price development. The contribution of the article is threefold. Firstly, we show the development in the implementation of the caps used and their changes during the last five years and explain their activations in line with the shifts in market conditions. Secondly, we highlight the amendments in the field of borrower-based measures as a response to the coronavirus outbreak, which have resulted in a relaxation of standards, which is connected with the abolition of the DTI and DSTI limits. Thirdly, we provide a view on the effort to incorporate these measures into the national legal framework as a binding regulation, which could ensure more powerful instruments to enforce the active limits and safeguard a more prudential approach when granting secured loans.

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