Housing Finance

Mortgage loan performance in South Africa

Centre for Affordable Housing Finance in Africa
A DIVISION OF FINMARK TRUST

Introduction

This is the second report on the performance of mortgages granted to lower income households in South Africa since 2004. Like the first report, this analysis finds that mortgages granted to lower income households have on average performed in line with the market as a whole. However, this analysis allows for a more nuanced comparison of performance that also highlights some key differences across the market.

The first report focused exclusively on loans originated under the Financial Sector Charter (FSC) process[1]. That initial analysis explored FSC loan performance measured in terms of the proportion of loans that were 90 days or more in arrears based on data submitted by the big four banks to credit bureaus. It tracked this against published data on the aggregate performance of the entire mortgage market provided by the South African Reserve Bank and the National Credit Regulator. The report highlighted that the comparison was limited; ideally the same data source and methodology should be used to compare performance.

This subsequent iteration of the analysis explores credit bureau data for mortgages issued by the big four banks across the market as a whole. The comparison is thus more robust as like-for-like data has been used and the methodology to derive performance metrics is aligned.

Further this report introduces an analysis of a second portfolio of interest, namely mortgages issued to the so-called 'Affordable' Market between 2009 and 2011[2].

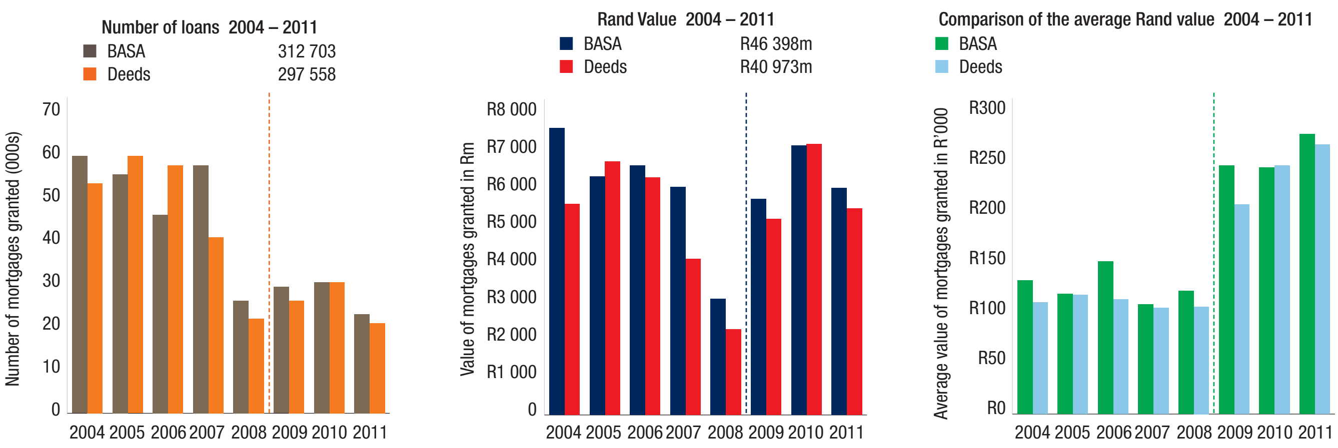
Finally, the report summarises more detailed findings for FSC and Affordable Market mortgages using additional loan parameters based on deeds office data such as loan size, loan use (purchase related Vs equity release) and LTV.

The findings presented below focus exclusively on the probability of default for FSC and Affordable Market mortgages, as identified by this analysis, against that of other mortgages originated during the same time periods (or non-FSC and non-Affordable Market mortgages). While this is a critical indicator of risk, it tells only a part of the risk story; lenders are concerned about both the probability of default and the loss given default. No analysis has been undertaken at this stage with regard to the latter, although further iterations of this analysis will seek to identify indicators in that regard.

Key findings: Loan characteristics

Findings are presented for two tranches of loans; namely FSC loans granted between 2004 and 2008 and Affordable Market loans granted between 2009 and 2011 compared against all other mortgages granted over the same time periods. Using areas identified as affordable by the Affordable Land and Housing Data Centre, together with a broad affordability proxy, this analysis identified approximately 223 000 FSC loans, with a total Rand value of R23.9billion[3]. The total number of Affordable Market loans identified using the same methodology is just under 74 600, with a total Rand value of R17.1 billion. The distributions of both the number and the Rand value of these loans are shown in the chart below together with published data from the Banking Association of South Africa (BASA). The data highlights a sharp decline in the absolute number of mortgages granted to the FSC target market between 2007 and 2008 and the subsequent maintenance of the lower number of loans granted from that time period onwards. However a significant increase in average loan sizes is visible from 2009 onwards.

Chart 1: Number and Rand value of loans issued: FSC and Affordable Market loans



Source: BASA: deeds data sourced from the ALHDC

Note: The thresholds used to determine affordable bonds are as follows: 2004-2008 – R7 500 in 2004 Rands, 2009-2011 – R15 142 in 2009 Rands. In order to identify affordable loans, an affordability threshold was calculated based on the prime interest rate +2% using a 30% income to instalment ratio.

1 These loans were originated between January 2004 and December 2008 to households with a monthly income of between R1500 and R7500 measured in 2004 Rands
2 The Affordable Market loans reviewed were originated between January 2009 and September 2011 to households with a monthly income of less than R15,142 in 2009 Rands
3 The methodology is outlined at the end of this document. See Methodology: Identifying FSC and Affordable Market mortgage loans section below

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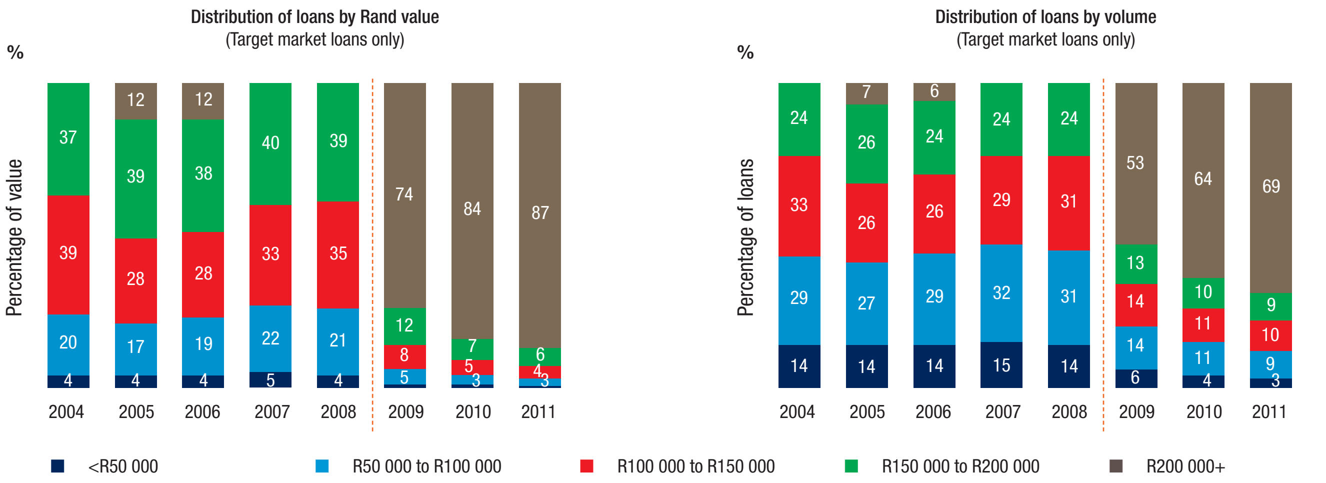
The size distribution of loans for these two portfolios is summarised below. Rising interest rates resulted in a downward shift in loan sizes in 2007 and 2008 in line with affordability constraints. The noticeable increase in loan sizes from 2009 onwards reflects both the declining interest rate cycle and the increased income threshold in line with the parameters used to define the Affordable Market.

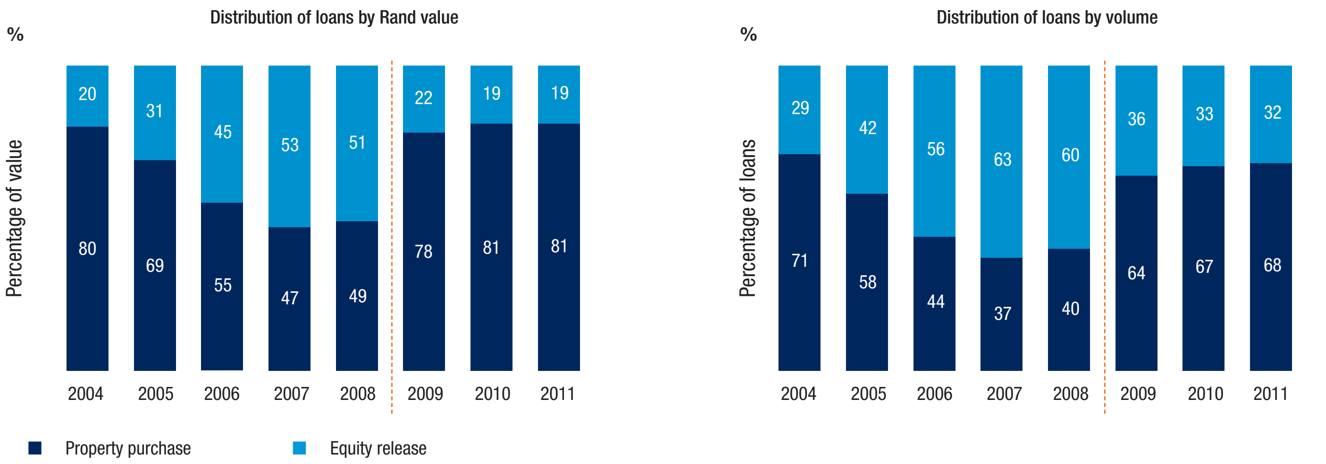
Chart 2: Distribution of opening balance Rand value and volume: FSC and Affordable Market loans



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.
Note: The thresholds used to determine affordable bonds are as follows: 2004-2008 – R7 500 in 2004 Rands, 2009-2011 – R15 142 in 2009 Rands. In order to identify affordable loans, an affordability threshold was calculated based on the prime interest rate +2% using a 30% income to instalment ratio.

An analysis of deeds data for these mortgages indicates that between 2004 and 2008 a declining proportion of FSC mortgage loans were used to fund a property purchase. As illustrated in Chart 1 above over the same time period the absolute number of mortgages declined in tandem. These mortgages would typically be registered together with a property transfer. This declining trend reflects the limited availability of affordable stock, both new and resale. With regard to Affordable Market loans the vast majority have been registered together with a property purchase[4].

Chart 3: Distribution of property purchase and equity release loans by Rand value and volume: FSC and Affordable Market loans



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.
Note: Records where there is no transaction value and where the bond registration is not on the same day as the property registration are regarded as equity based loans. Data for 2011 only includes bonds up to September 2011. The thresholds used to determine affordable bonds are as follows: 2004-2008 – R7 500 in 2004 Rands; 2009-2011 – R15 142 in 2009 Rands.

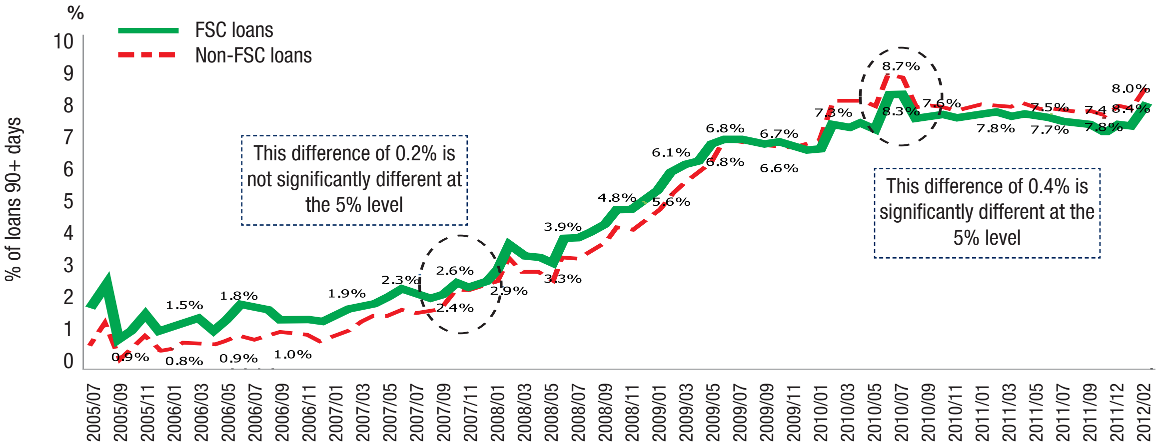
Key findings: Loan performance

The analysis compares the performance of FSC and Affordable Market loans against all other loans. As per the chart below, the percentage of non-performing (90 days or more in arrears) FSC loans (i.e. loans typically granted to lower income households) closely tracks performance of non-FSC loans (those typically granted to higher income households).

The chart indicates an increasing deterioration in performance for both FSC and non-FSC loans from 2007 onwards in line with increasing interest rates and higher commodity prices which prevailed at the time.

4 For loans that appear to fund a property purchase, a very small proportion of properties appear to be new registrations, with between 1% and 2% of property purchase mortgages associated with newly registered properties. This low percentage is more likely a function of the limited nature of the proxy variable used to identify newly registered properties in the deeds data (which is based on date of the initial property registration). Further investigation into the number and location of newly developed affordable stock is required before firm conclusions can be drawn on this issue.

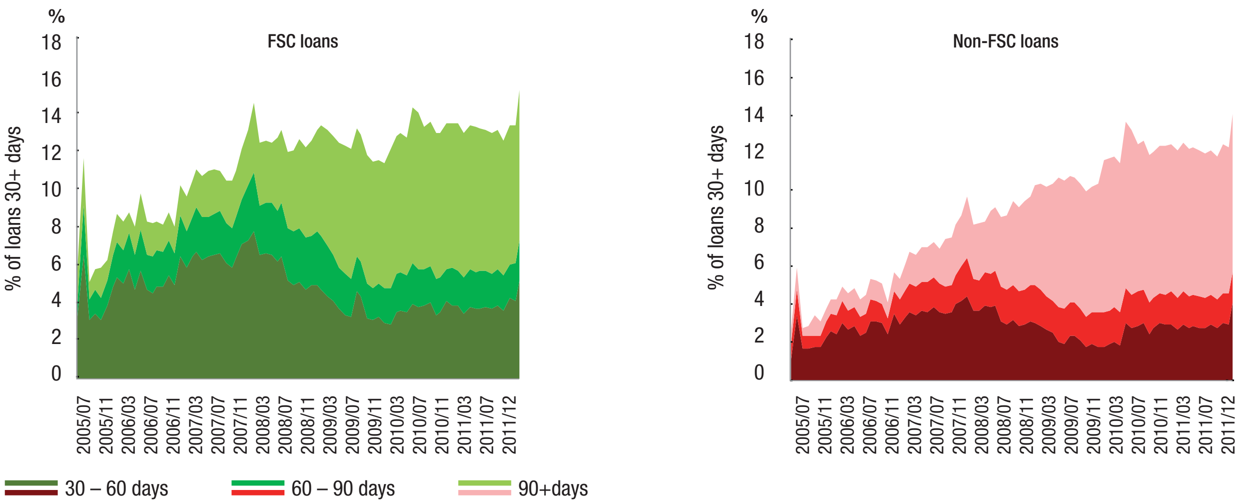
Chart 4: Percentage of non-performing loans (90 days or more in arrears): FSC vs non-FSC loans originated between 2004 and 2008



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

While there is a small difference between FSC and non-FSC loans measured in terms of the proportions 90 days or more in arrears there is a noticeable difference in the ageing profile. A higher proportion of FSC loans are between 30 and 60 days in arrears. This is particularly noticeable between 2006 and 2009 and indicates a far more erratic payment pattern in the FSC target market. This may reflect more constrained affordability in lower income markets. It may also reflect other features of the market such as a higher reliance on stop order or salary deduction collection methods where levels of technical arrears[5] are comparatively high.

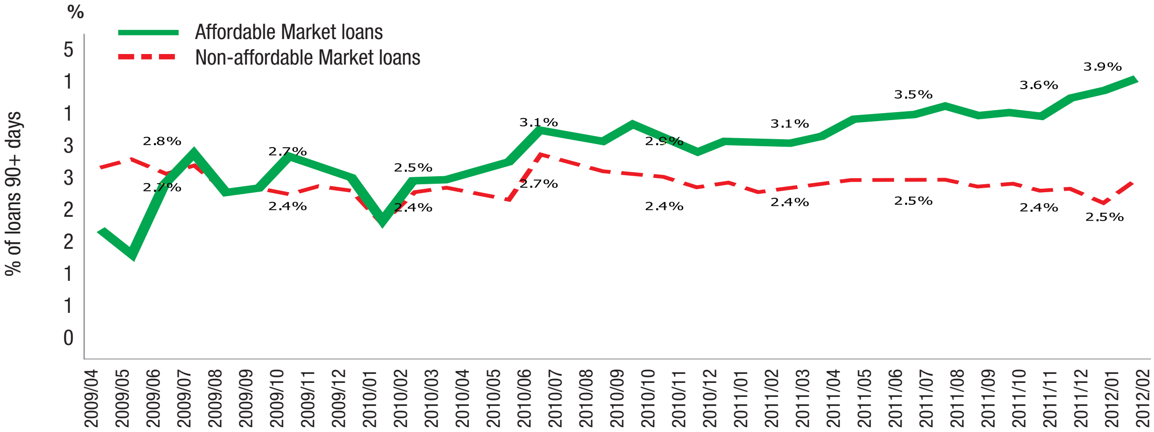
Chart 5: Aging analysis: FSC vs non-FSC loans originated between 2004 and 2008 (cumulative)



Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

For those mortgage loans originated between 2009 and 2011 loan performance is unsurprisingly better across the market. However, starting roughly midway through 2010 there is a more noticeable divergence in performance of loans originated to lower income and higher income households.

Chart 6: Percentage of loans that are non-performing (90 days or more): Affordable Market vs non-Affordable Market originated between 2009 and 2011



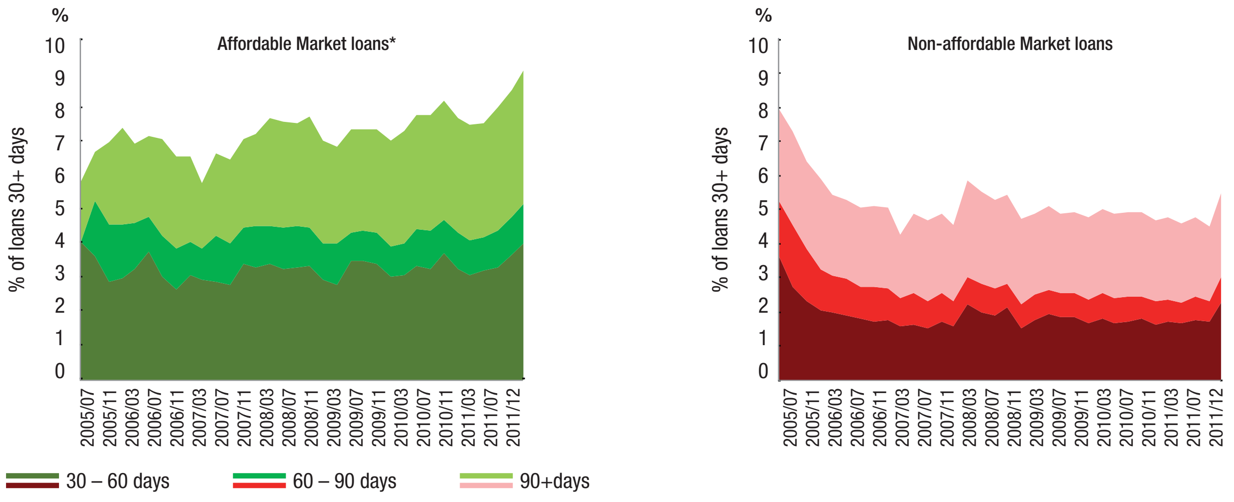
Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

5 For instance, administration systems that deduct payments off payrolls malfunction

As with FSC and non FSC loans, an ageing analysis of Affordable Market loans compared to the rest of the market indicates a far more erratic payment pattern in the Affordable Market. This may well require more intensive management on the part of lenders. It is of interest that the proportion of loans that are between 30 and 60 days in arrears increased in both portfolios from the last quarter of 2011.

Chart 7: Aging analysis: Affordable Market vs non-Affordable Market loans originated between 2009 and 2011 (cumulative)

(Bonds originated between 2009 and 2011, mortgages from big 4 banks)

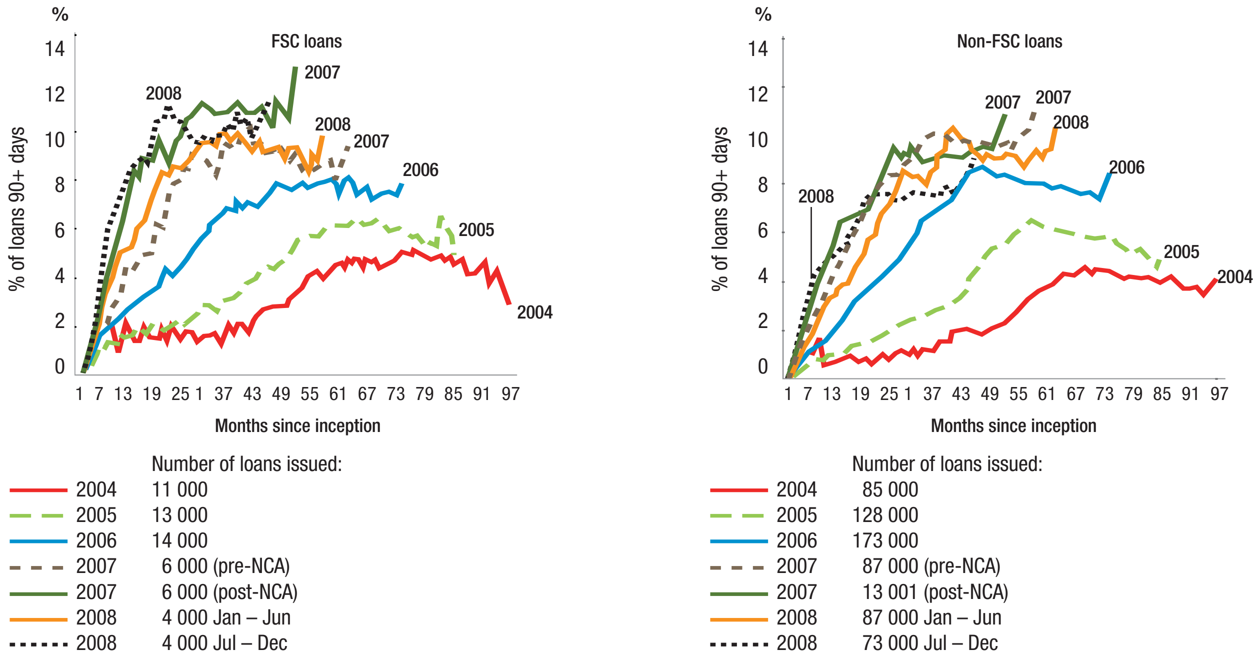


Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.
*Affordable Market loans are calculated in the same way as FSC bonds

A vintage analysis for both FSC loans as well as non-FSC loans originated between 2004 and 2008 displays a similar pattern with both sets of loans deteriorating noticeably over time as can be seen in chart 8 below. However, FSC loans appear to display signs of distress earlier than non-FSC loans in all likelihood reflecting more constrained financial conditions for lower income households. Post-NCA loans appear to have performed worse than pre-NCA loans, for both FSC and non-FSC loans. The act came into force during an upward phase of the interest rate cycle. This together with the absence of a counterfactual makes it impossible to draw firm conclusions on the impact of the NCA.

Chart 8: Vintage analysis: FSC vs non-FSC

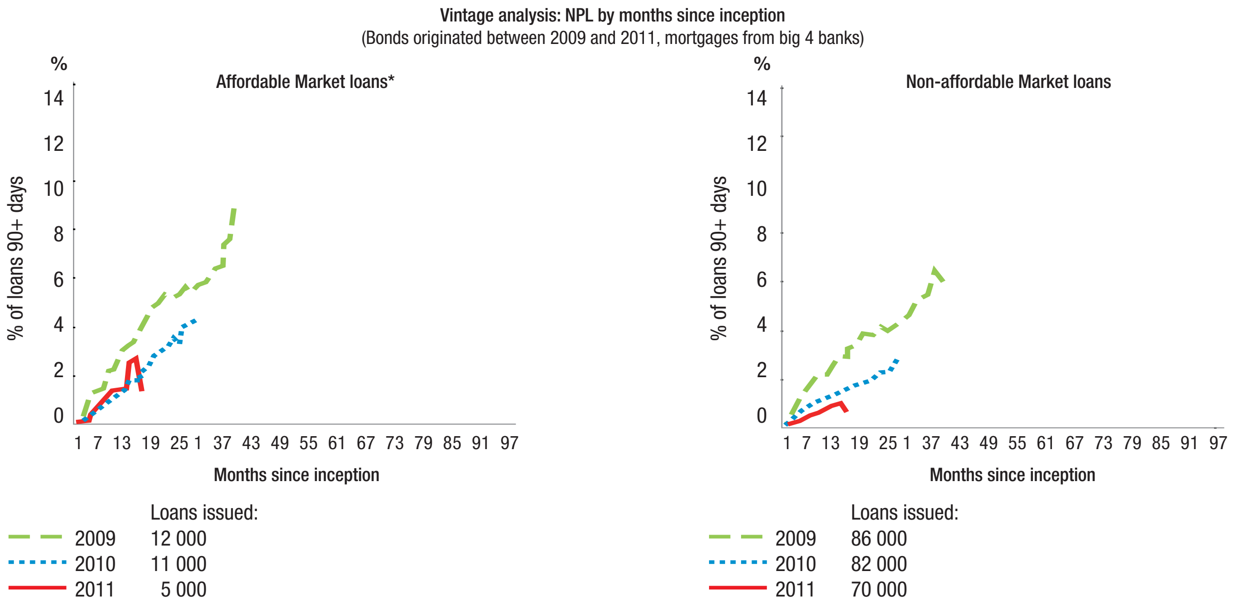
Vintage analysis: NPL by months since inception
(Bonds originated between 2004 and 2008, mortgages from big 4 banks)



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

The vintage analysis of Affordable Market and other loans by various cohorts originated between 2009 and 2011 is shown in chart 9 below. The analysis of higher income loans indicates steadily improving performance as interest rates have declined. However in the so-called Affordable Market loans originated in 2011 appear to have performed worse than loans originated in 2010.

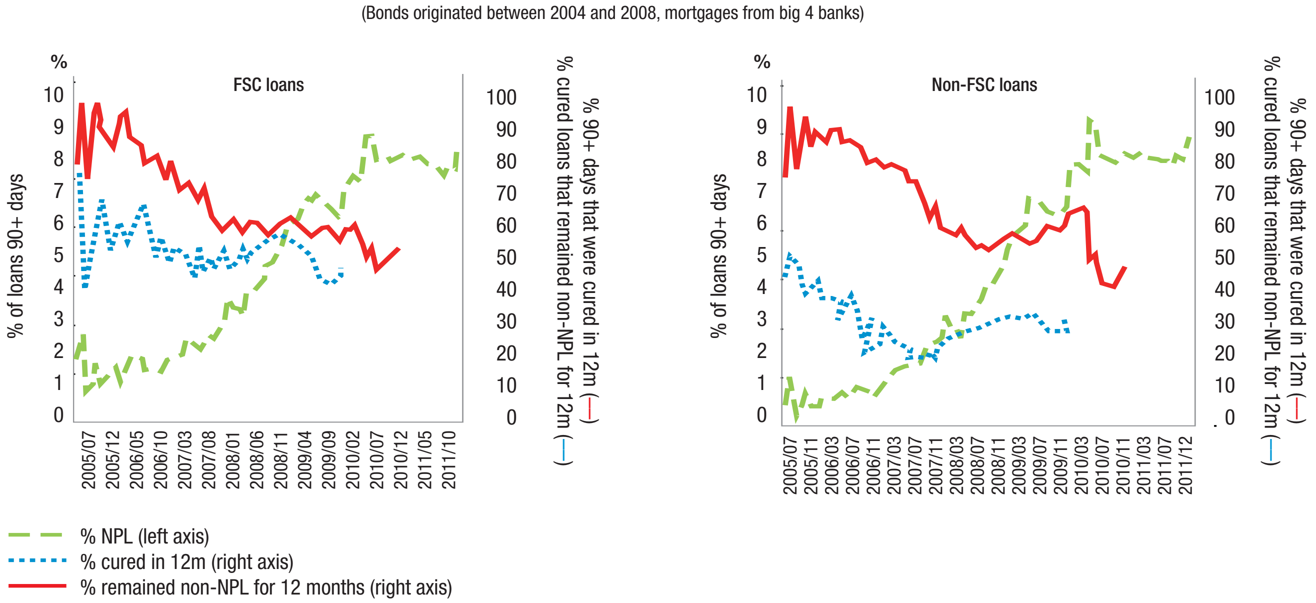
Chart 9: Vintage analysis: Affordable Market vs non-Affordable Market



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.
*Affordable Market loans are calculated in the same way as FSC bonds

Credit bureau data can allow for an analysis of cure rates, that is, the rate at which nonperforming loans become rehabilitated. Chart 10 below indicates that roughly 80% of FSC loans and 83% of non-FSC loans that were nonperforming in 2006 had been 'cured' within 12 months. This proportion declined steadily, more so for FSC loans. However of the FSC loans that were cured, the analysis indicates that, on average, about half are likely to remain in good standing for 12 months. The non-FSC loans were worse performing in this regard, with, on average, less than a third remaining cured. This pattern would on the face of it indicate that once lower income borrowers repay their outstanding mortgage payments, their payment streams tend to stabilise. In part this could reflect the fairly significant realignment to household budgets for many lower income households. Evidence of this emerged in recent research[6] that found that almost half of all resident in a newly built housing development did not pay for housing in their previous dwellings. A further 30% had paid less than R1000 per month. In these households it may take time for expenditure patterns to shift to allow for higher housing expenditure. Lenders may also have different loan management practises in the lower income segment of the market. They may be more willing to reschedule outstanding payments and reinstate loans as current.

Chart 10: Performance and cure rates: FSC vs non-FSC



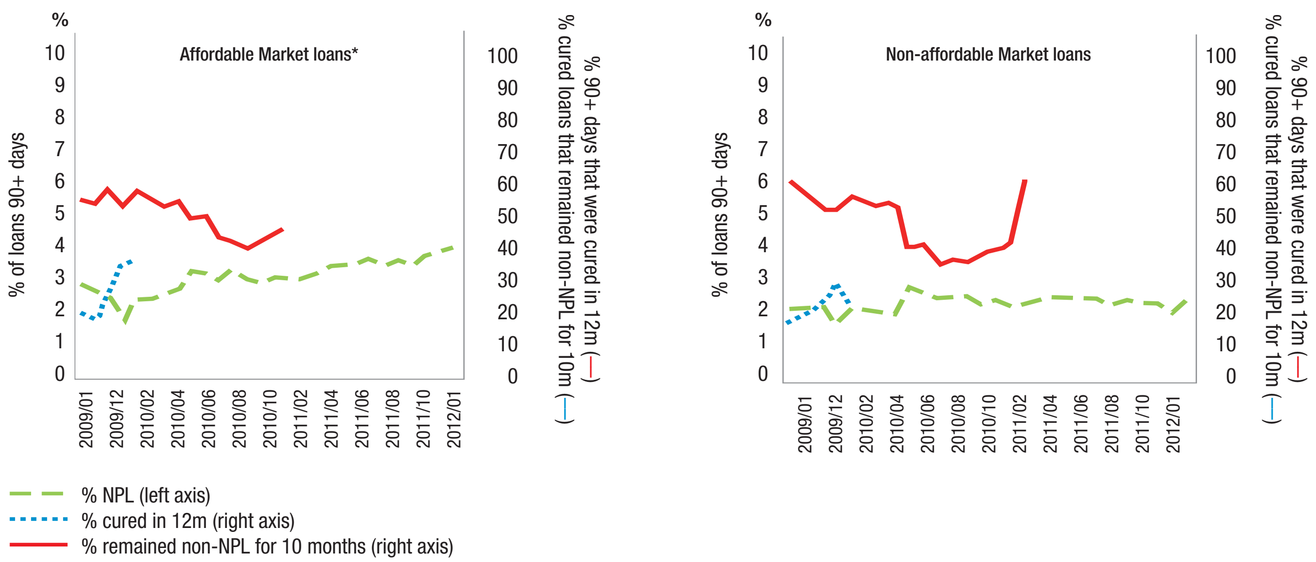
Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

Cure rates for loans granted between 2009 and 2011 are shown below. The pattern is broadly similar for loans granted in the Affordable Market and the rest of the market. It is noteworthy that the proportion of cured loans that remain cured for 12 months is lower in this time period than for the FSC period, although the shorter timeframe available for the analysis of the Affordable Market period yields insufficient data with which to draw any firm conclusions in this regard.

6 This research was funded by OMIGSA. It interviewed 102 households in the Affordable Market who had recently moved into the Karino Lifestyle Estate near Nelspruitce, administration systems that deduct payments off payrolls malfunction

Chart 11: Performance and cure analysis: Affordable Markets vs non-Affordable Markets

(Bonds originated between 2009 and 2011, mortgages from big 4 banks)



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.
*Affordable Market loans are calculated in the same way as FSC bonds

A final dimension used to compare lower income mortgages with higher income loans is one based on area. While FSC loans and non-FSC loans seem to perform very similarly on average, the spread of performance by area differs substantially. The worst performing areas for FSC loans have exceeded 25%. In comparison, the worst performing area for non-FSC loans do not reach 20%[7]. Worth noting is how rapidly NPLs escalate in some areas.

Table 1a: Percentage non-performing FSC mortgages by area: worst performing areas

Suburb (Metropolitan)	2006 % NPL (Number of loans)		2007 % NPL (Number of loans)		2008 % NPL (Number of loans)		2009 % NPL (Number of loans)		2010 % NPL (Number of loans)		2011 % NPL (Number of loans)	
Protea Park (Cape Town)	0.0	(55)	1.4	(142)	0.9	(226)	13.6	(269)	26.1	(404)	24.6	(477)
Saxonsea (Cape Town)	2.5	(121)	1.9	(211)	8.5	(340)	15.3	(437)	25.4	(751)	24.4	(881)
High Gate (Cape Town)	0.0	(50)	0.0	(86)	3.6	(138)	8.2	(171)	14.2	(281)	21.8	(312)
Louwville (Saldanha Bay)	0.0	(112)	1.2	(166)	3.1	(287)	13.2	(356)	15.0	(546)	21.6	(610)
North End (Nelson Mandela)	0.0	(51)	6.3	(63)	1.2	(85)	7.7	(117)	6.6	(182)	20.3	(207)
Ongegund (Saldanha Bay)	1.1	(92)	0.0	(111)	2.9	(208)	5.8	(276)	16.5	(382)	20.1	(428)
Cleveland (Johannesburg)	0.0	(60)	0.0	(54)	7.0	(57)	21.0	(62)	15.5	(84)	20.0	(85)
Sherwood (Cape Town)	6.7	(75)	1.2	(83)	1.9	(162)	5.9	(186)	12.7	(299)	18.8	(373)
Florida (Cape Town)	0.3	(359)	2.5	(436)	4.5	(558)	14.8	(620)	18.7	(819)	18.6	(807)
New Eastridge (Cape Town)	12.0	(133)	5.3	(285)	13.9	(453)	21.9	(625)	22.5	(1,025)	18.5	(1,033)

Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

Table 1b: Percentage non-performing non-FSC mortgages by area: worst performing areas

Suburb (Metropolitan)	2006 % NPL (Number of loans)		2007 % NPL (Number of loans)		2008 % NPL (Number of loans)		2009 % NPL (Number of loans)		2010 % NPL (Number of loans)		2011 % NPL (Number of loans)	
Mitchells Plain (Cape Town)	2.1	(187)	8.6	(395)	6.7	(849)	10.3	(1,128)	16.4	(7,078)	18.0	(9,200)
Vredenburg (Saldanha Bay)	0.6	(623)	0.9	(975)	3.5	(2,303)	5.5	(2,893)	13.2	(6,896)	14.6	(8,279)
Brits (Madibeng)	1.4	(781)	1.5	(1,443)	4.3	(3,558)	8.2	(4,509)	13.9	(9,688)	13.6	(1,0871)
Brakpan (Ekurhuleni)	1.7	(976)	3.8	(1,833)	8.1	(3,262)	11.7	(3,951)	12.9	(11,065)	13.3	(13,629)
Krugersdorp (Mogale)	2.5	(709)	3.0	(1,275)	6.4	(2,932)	11.9	(3,668)	13.3	(9,720)	13.1	(11,623)
Grassy Park (Cape Town)	1.6	(701)	3.8	(1,186)	5.8	(2,394)	8.6	(2,995)	12.6	(9,475)	12.9	(12,038)
Portland (Cape Town)	1.3	(300)	4.4	(724)	5.7	(1,318)	13.1	(1,745)	13.2	(6,039)	12.7	(7,571)
Germiston (Ekurhuleni)	0.2	(589)	2.8	(1,237)	7.2	(2,476)	10.4	(3,465)	12.8	(9,694)	12.6	(11,706)
Belhar (Cape Town)	2.2	(417)	3.0	(889)	7.7	(1,695)	15.6	(2,147)	13.2	(8,398)	11.9	(10,424)
Kempton Park (Ekurhuleni)	1.2	(1,340)	3.5	(2,527)	6.1	(5,387)	10.7	(7,380)	11.7	(21,118)	11.9	(26,350)

Source: Deeds office data sourced from the ALHDC and credit bureau data sourced from XDS

7 Areas for FSC and Affordable Market loans are based on EA codes as per deed office records. For the rest of the Market a broad suburb indicator is available from XDS. Note that the number in brackets in the table reflects the total number of mortgages in the area as reflected in bureau data.

For loans granted between 2009 and 2011 the same variability is evident within Affordable Market loans. The worst area for Affordable Market loans, Likole, has 22.5% of loans in 90 days or more arrears while Sebokeng, the worst area for non-Affordable Market loans, has 10.2% of loans non-performing.

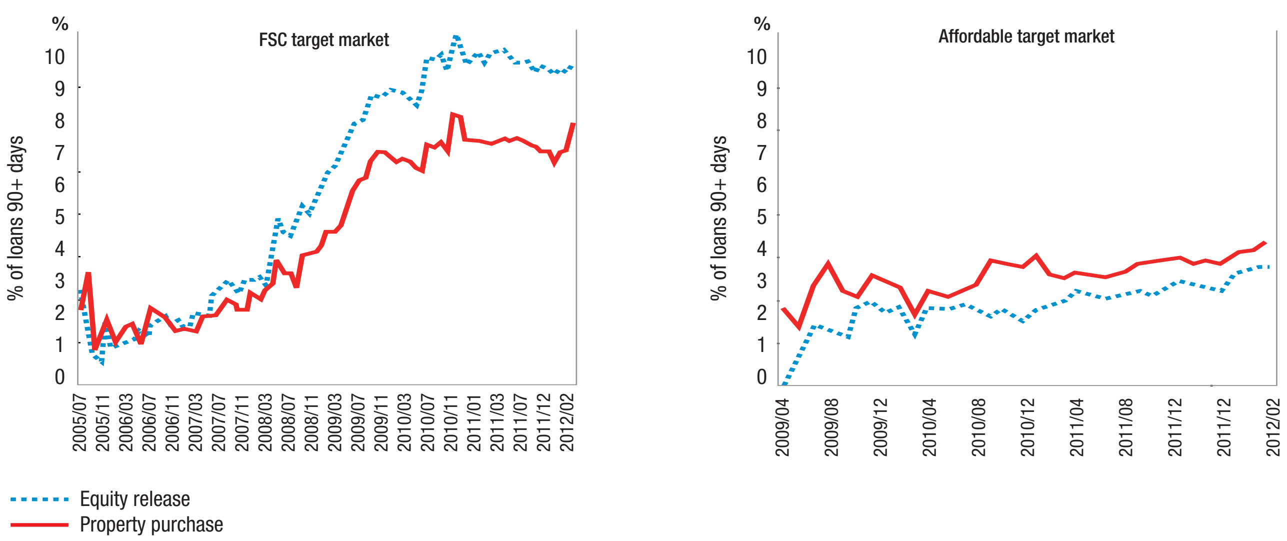
Table 2: Percentage non-performing Affordable Market and non-Affordable Market mortgages by area

Affordable (Metropolitan)	2009 % NPL (Number of loans)		2010 % NPL (Number of loans)		2011 % NPL (Number of loans)		Non-Affordable (Metropolitan)	2009 % NPL (Number of loans)		2010 % NPL (Number of loans)		2011 % NPL (Number of loans)	
Likole (Ekurhuleni)	3.6	(55)	19.0	(242)	22.5	(347)	Sebokeng (Emfuleni)	8.0	(113)	9.8	(843)	10.2	(1,368)
Marble Hall Ext 6 (Sekhukhune)	5.4	(130)	14.6	(362)	21.8	(467)	Rocklands (Cape Town)	0.0	(70)	9.1	(678)	7.6	(1,186)
Tokoza Ext 2 (Ekurhuleni)	7.7	(52)	20.7	(145)	15.2	(191)	Germiston (Ekurhuleni)	2.3	(128)	4.9	(2,237)	4.9	(4,167)
Laaiplek (Cape Town)	3.7	(107)	3.9	(595)	9.2	(610)	Phoenix (Ethekwini)	38.6	(101)	6.5	(1,573)	6.8	(2,711)
Weltevreden Valley (Cape Town)	3.4	(145)	10.5	(856)	9.2	(1,233)	Mabopane (Tshwane)	1.1	(174)	6.1	(1,124)	6.6	(1,688)
Khayletisha (Cape Town)	8.1	(185)	7.7	(1,249)	8.7	(2,178)	Mitchells Plain (Cape Town)	0.0	(27)	5.3	(1,100)	6.6	(2,091)
Pretoria Central (Tshwane)	5.1	(118)	4.3	(766)	7.4	(1,077)	Ermelo (Msukaligwa)	4.3	(139)	7.1	(858)	6.2	(1,357)
Yeoville (Johannesburg)	10.7	(75)	6.2	(251)	7.1	(301)	Tembisa (Ekurhuleni)	7.1	(168)	6.0	(1,740)	6.0	(2,804)
Wildtuin Park (Mogale City)	0.0	(70)	0.0	(251)	7.0	(301)	Goodwood (Cape Town)	6.8	(190)	7.0	(2,513)	5.8	(4,451)
Beacon Valley (Cape Town)	0.0	(52)	1.6	(374)	6.6	(590)	Vosloorus (Ekurhuleni)	12.0	(100)	6.3	(811)	5.6	(1,258)

Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

The charts below show the performance of FSC and Affordable Market loans differentiated into equity release and property-purchase loans[8]. As can be seen, FSC loans that are used to free up capital (whether for further home investment or for other purposes) tend to perform worse than those used to purchase property, while the opposite occurs for Affordable Market loans. It is not clear why this is the case[9]. As we continue to monitor the Affordable and Non-Affordable Market performance, we will have more data with which to better analyse this and other issues.

Chart 12: Percentage of FSC and Affordable loans that are non-performing (90 days or more) by equity release/property purchase



Source: Deeds office data sourced from the ALHDC. Credit bureau data sourced from XDS.

8 The property is said to be purchased if the property registration date is the same as the bond registration date. This data is only available for FSC and Affordable Market loans

9 The analysis has explored LTV distributions and performance by LTV. However, these results are not incorporated in this report as lenders indicated that both mortgage values and sales prices are often distorted. Lenders often include a margin for costs of recovery in the case of default in the mortgage value and may also anticipate an increase in demand for funds by the client in the future as affordability increases. Thus mortgage values as reflected on deeds records can be in excess of funds disbursed. With regard to sales prices, for newly built units prices can include costs, or are purposefully inflated by developers.

Further analysis

This paper provides a high level overview of the analysis, highlighting the most salient findings. A more detailed workbook explores performance along additional dimensions, such as loan amount and borrower demographics (age and gender).

Future analyses will explore a range of other issues – for instance the relationship between mortgage performance and performance of other credit products – with the aim of identifying leading indicators of mortgage default. In addition, the analysis will seek to explore the default cycle more comprehensively and to identify indicators relating to loss given default in order to develop a more comprehensive understanding of total risk. It will also broaden market coverage to include other lenders, aside from the big four banks. Of course, especially Affordable Market mortgages are still very young, having only been orginated since 2009. Future and ongoing analyses will offer further opportunities to track the performance of this market and to test how it develops over time.

While the analysis provides a fact base as a starting point it is critical that lenders and policymakers actively engage with the findings. This engagement will contribute immeasurably towards developing a shared understanding of the level of risk associated with lending to lower income market segments, the relationship between underwriting criteria and performance, and the identification of mechanisms that can enhance sustainable access to the product.

Methodology: Identifying FSC and Affordable Market mortgage loans

Step 1: Identify affordable areas

- Only mortgages granted in lower income or affordable areas (where the average property value is less than R500 000), as identified by the Affordable Land + Housing Data Centre, were used. Visit www.alhdc.org.za for more information.

Step 2: Include individual borrowers only

- Only those bonds registered by individuals were used (companies and institutions were excluded)
- Traders (defined as those who transact more than once a year) were also excluded

Step 3: Select mortgages granted by the big four retail banks only

- Only mortgages originated by the big four banks were included in the analysis

Step 4: Identify affordable primary bonds

- These are identified using a 20 year bond at prime +2 (prevailing at the time of bond registration) and a maximum affordability threshold of 30% of income using the upper limit of FSC band for that year

Step 5: Identify affordable secondary bonds

- Link the secondary mortgage to the original primary mortgage
- Exclude the secondary mortgage if the initial primary bond is not 'affordable' (using criteria above). Where the primary bond was registered prior to 2004, the upper limit of the FSC income band is calculated by adjusting the 2008 amount for inflation
- For the secondary mortgage to be affordable, the total outstanding capital of the secondary bond plus remaining capital of the primary bond (assuming no pre-payment) must be affordable using a 20 year bond at Prime +2 (prevailing at the time of the secondary bond registration) and a maximum affordability threshold of 30% of income using upper limit of FSC band for that year

This process yielded a total of just under 300 000 loans to the value of R41.0 billion, not very different to the respective totals of 321 703 loans and R46.3 billion as reported by the Banking Association of South Africa – albeit with some noticeable variance across years as summarised in Chart 1. It is noted that that methodology assumes a maximum instalment to income threshold of 30%. Lenders have noted that in practise this ratio may be too high and have recommended that future analysis use a 25% ratio.

Once FSC and Affordable Market loans were identified, a list of 254 351 valid borrower ID numbers associated with these loans on the deeds registry was forwarded to XDS, a registered credit bureau. XDS referenced these ID numbers against their database. Mortgage data was available for 134 629 ID numbers, or 52% of the valid ID numbers found. The primary reasons for the drop off in mortgage matches is in all likelihood a result of incomplete lender submission of loans, particularly joint mortgages which prior to 2007 were not well catered for by credit bureau data submission templates.

For each identified borrower, Eighty20 obtained a full payment history as well as broad borrower and loan characteristics, including age, gender, suburb, loan amount granted, loan balance and arrears status. Eighty20 used this data to explore payment patterns of each loan.

For all loans the measure of performance investigated is based on arrears of 90 days or more. Once a loan is classified as Legal (that is, handed over for collection) or the account is paid up, closed or the account holder is deceased, the loan is no longer included in the analysis. It is noted that this is not in line with accounting practises used by lenders, who continue to regard mortgages as being in arrears until such time as the property has been sold and the loan has been terminated. In the future the analysis will mirror this practise.

Analysis prepared by Eighty20 Consulting for the Centre for Affordable Housing Finance in Africa
Data prepared and provided by XDS, a registered credit bureau
The project team wishes to thank the CPA for their cooperation and input
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