

August 2014

# Putting Mortgage Insurers on Solid Ground

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**Abstract**

The mortgage insurance industry plays an important role in the housing finance system, providing insurance against default by borrowers with low down payment loans. The industry struggled during the housing bust, and while it has done much to shore up its financial health in the subsequent recovery, more needs to be done to strengthen and stabilize the industry if it is to play the central role in the housing finance system that many envision for it.

The [Private Mortgage Insurance Eligibility Requirements](#), recently put forth by Fannie Mae, Freddie Mac, and the Federal Housing Finance Agency, are intended to do precisely that. A thoughtful effort, these standards should succeed in ensuring that private mortgage insurers are strong counterparties to the government-sponsored enterprises and a much improved bulwark against excessive risk in the system.

Several features of the rules as currently written, however, would likely unnecessarily increase costs and cyclicity in the mortgage and housing markets. With a few modest changes, these flaws can be remedied without sacrificing the considerable benefits of the new standards.

# Putting Mortgage Insurers on Solid Ground

BY MARK ZANDI, JIM PARROTT AND CRISTIAN DERITIS

**T**he mortgage insurance industry plays an important role in the housing finance system, providing insurance against default by borrowers with low down payment loans. The industry struggled during the housing bust, and while it has done much to shore up its financial health in the subsequent recovery, more needs to be done to strengthen and stabilize the industry if it is to play the central role in the housing finance system that many envision for it.

The [Private Mortgage Insurance Eligibility Requirements](#), recently put forth by Fannie Mae, Freddie Mac, and the Federal Housing Finance Agency, are intended to do precisely that. A thoughtful effort, these standards should succeed in ensuring that private mortgage insurers are strong counterparties to the government-sponsored enterprises and a much improved bulwark against excessive risk in the system.

Several features of the rules as currently written, however, would likely unnecessarily increase costs and cyclicity in the mortgage and housing markets. With a few modest changes, these flaws can be remedied without sacrificing the considerable benefits of the new standards.

As the MIs take the steps needed to meet the PMIERS, we would expect the GSEs to remove the premium they include on loans with mortgage insurance to cover their assessment of the risk that the MIs ultimately will not be able to pay out claims. These rules should remove that concern, rendering the premium unnecessary and further minimizing the cost increase of the requirements.

## Financial requirements

The PMIERS provide a comprehensive set of standards for mortgage insurance companies that do business with the government-sponsored enterprises Fannie Mae

and Freddie Mac. State insurance agencies regulate mortgage insurers, but because the bulk of the loans they insure are GSE loans, they must abide by the PMIERS to stay in business.<sup>1</sup> These standards include a broad range of requirements, including the steps that must be taken in starting a new private mortgage insurer, how mortgage insurers should underwrite loans and conduct quality control, and what happens to an insurer that fails to meet the standards.

Most critically, the PMIERS establish financial requirements for operating a mortgage insurer, a key aspect of which is setting the capital the MIs must hold to provide insurance on mortgage loans.

The capital requirements are determined based on the performance of mortgage loans in a stress test, similar to those conducted by the Federal Reserve in its [Comprehensive Capital Analysis and Review](#). Mortgage loan performance, and thus the required capital, is determined by a range of factors, including but not limited to loan type, credit score, loan-to-value ratio, vintage, and whether the loan is performing.

The CCAR-like stress test used by the PMIERS as a basis for the MIs' capital requirements mimics the economic conditions of the Great Recession, with appropriately substantial declines in house prices. Although the likelihood of another similar fall in house prices has declined since the housing bust,

the MIs will be much better able to withstand such a scenario if it occurs.

## Procyclical

The PMIERS are not without their shortcomings, however. First, the standards as drafted are procyclical. The additional capital charge for nonperforming mortgage loans—as delinquencies increase, mortgage insurers are required to hold more capital—may have the beneficial effect of moderately slowing an overheating market, but the effect will become more dramatic, and more problematic, during a time of distress. MIs will be forced to raise significantly more capital at a time when it is more costly, as investors in MI companies will require a higher return to compensate for the greater perceived and actual risks. The need to raise more capital at a higher cost will result in higher mortgage rates and less mortgage credit at just the wrong time.

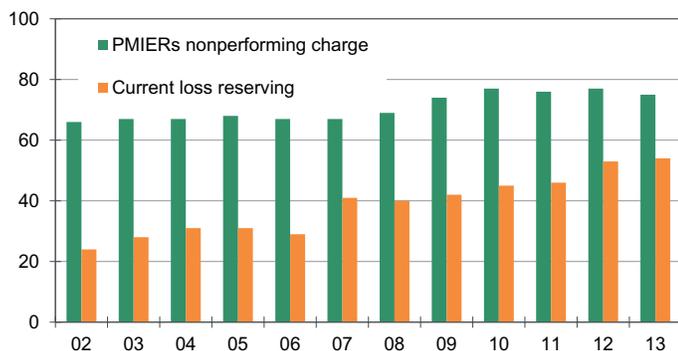
Exacerbating the problem, under the PMIERS, the MIs' capital requirements can be changed unilaterally by the GSEs. The enterprises are most likely to increase the requirements during downturns when mortgage credit problems mount, further contributing to the procyclicity.

## Higher premiums

As written, the PMIERS will also increase mortgage insurance premiums more than

**Chart 1: More Capital For Nonperforming Loans Under PMIERS**

Capital charge, % of risk-in-force on non-performing loans



Sources: MGIC, Moody's Analytics

for their nonperforming loans.<sup>5</sup> One arrives at this figure by applying the capital charges for nonperforming loans provided by the draft PMIERS to the same MI loan portfolio. The capital charge on the MIs' distribution of nonperforming loans equals approximately two-thirds of the risk-

in-force on these loans (see Chart 1).<sup>6</sup>

For MI companies that have begun operating since the housing bust and thus have few delinquencies, they would need only a 14:1 RTC over the near term. As their loans season and delinquencies increase, their capital requirements will align more with the 12:1 RTC that will be required of the legacy MI companies.<sup>7</sup>

To determine the effect that these requirements would have on current premiums, one must compare them to the current regime. Most importantly, one must compare the PMIERS' capital charges for nonperforming loans to the industry's current practice of loan loss reserving. There are two key differences between these two regimes. First, the PMIERS assume a stress scenario, whereas MIs reserve for losses assuming the economic environment they happen to be in at the time. Therefore, in typical times there

will be a substantial difference between them. Second, MIs' loss reserves on a given loan are based on the likely outcome and cost of its current delinquency only: Either the loan cures or goes to claim. The PMIERS, on the other hand, factor in the cost where the delinquency cures but later re-defaults and then goes to claim. As with the first difference, this inevitably leads to higher estimated costs against which to reserve.

The impact of these differences is clear when assessed in an historical context. In the typical market of the early 2000s, MI loss reserving resulted in a capital charge of less than 30% of the risk-in-force on nonperforming loans. The PMIERS, on the other hand, would have required capital levels of 67% against the same loans, as it would be accounting for a different outcome and assuming a different economic environment. As we entered into precisely such an environment in the Great Recession, the MIs' traditional loss reserving practices adjusted somewhat, requiring a higher charge of around 45%, but this is still substantially less than the 75% required under PMIERS.

The standard proposed in the PMIERS is more than twice as robust as the 25:1 RTC historically required by state insurance laws, and significantly stronger than the industry's current 17:1 RTC (see Table 1).

Depending on how competition in the industry shakes out, and assuming the industry maintains its historical after-tax return on capital of 13%, exclusive of investment income, the average premium increase across all loans insured by the MI industry would be as much as 15 basis points (see Table 2). Mortgage insurance premiums would rise much more for less-creditworthy borrowers since more capital must be held against riskier loans. MI premiums on a 95% LTV loan to a borrower with a 700 credit score would rise by as much as 27 basis points, and by 64 basis points for a borrower with a 650 score. The MI premium increase for borrowers with scores below 680 would be so significant that an FHA loan would be more affordable for most (see Table 3).<sup>9</sup>

While the increase in capital requirements is clearly warranted, there are certain features of the requirements as currently

is necessary. There is some disagreement about precisely how the requirements would impact premiums, so it is worth walking through this analysis carefully.

Applied to the types of loans being insured today, the PMIERS will ultimately result in an estimated risk-to-capital ratio, or RTC, for the MI industry of close to 12-to-1. That is, the industry's risk-in-force must be no more than 12 times the capital, or more precisely liquid assets, it holds.<sup>2</sup> Liquid assets include cash, the MIs' investment portfolios of high-quality bonds, and investments in affiliated entities that provide reinsurance to the MI.<sup>3</sup>

The MIs would be required to hold RTC of close to 14:1 for their performing loans. One arrives at this figure by applying the capital charges outlined in the draft PMIERS to the performing loans in an MI loan portfolio consistent with current lending.<sup>4</sup> The required RTC falls to 12:1 after accounting

**Table 1: Private Mortgage Insurance Industry**

As of Mar 2014

	Insurance-in-force \$ bil	Risk-to-capital ratio
Arch	21.2	9.1
Essent	34.8	16.1
Genworth	109.1	18.7
MGIC	157.9	15.3
NMI	0.5	0.9
Radian	162.4	19.2
UGC	150.9	17.9
<b>Total</b>	<b>636.8</b>	<b>16.8</b>

Note: Risk-to-capital in this table is under current definition and not under PMIERS.

Source: Moody's Analytics

Table 2: PMIERS Impact on Private Mortgage Insurance Premiums

Current private MI assets

	MI premium, bps		Risk-to-capital		Net assets required, % of risk-in-force			
	90	95	90	95	90	95		
650	71	115	650	14.1	10.4	650	7.1%	9.6%
700	57	89	700	17.5	13.5	700	5.7%	7.4%
750	44	62	750	22.7	19.4	750	4.4%	5.2%
800	39	54	800	25.6	22.2	800	3.9%	4.5%
	In-force =	62		In-force =	17.5		In-force =	5.7%

PMIERS asset requirements

	Risk-to-capital No delinquency adjustment		Net assets required, % of risk-in-force No delinquency adjustment		Risk-to-capital Adjusted for delinquency		Net assets required, % of risk-in-force With delinquency adjustment				
	90	95	90	95	90	95	90	95			
650	7.9	5.9	650	12.7%	16.9%	650	6.4	5.0	650	15.7%	20.2%
700	13.3	9.8	700	7.5%	10.2%	700	11.2	8.5	700	8.9%	11.8%
750	23.3	16.7	750	4.3%	6.0%	750	20.4	15.2	750	4.9%	6.6%
800	40.0	27.8	800	2.5%	3.6%	800	34.5	25.0	800	2.9%	4.0%
	In-force =	13.8		In-force =	7.2%		In-force =	11.9		In-force =	8.4%

Private MI premium impact from adopting PMIERS

	Change in MI premium, bps No delinquency adjustment		Change in MI premium, bps With delinquency adjustment		
	90	95	90	95	
650	28	44	650	43	64
700	9	17	700	16	27
750	-1	-5	750	2	9
800	-7	-5	800	-5	-3
	In-force =	8		In-force =	15

Assumptions

Coverage percentage (90% and 95% LTV)	25%	30%
Capital for nonperforming loans (% of RIF)	67%	
Expected combined ratio	50%	
Before-tax return on capital (x investment income)	20%	
After-tax return on capital (35% tax rate)	13%	

Hypothetical nonperforming loan rate  
(90 days and over), % of in-force

	90	95
650	5.6%	6.6%
700	2.3%	2.9%
750	0.9%	1.0%
800	0.6%	0.6%

Hypothetical MI insurance-in-force distribution

	Hypothetical MI insurance-in-force distribution		Hypothetical risk in-force distribution	
	90	95	90	95
650	6%	5%	6%	6%
700	19%	16%	17%	18%
750	24%	18%	22%	20%
800	7%	5%	6%	6%

Source: Moody's Analytics

drafted that will increase mortgage insurance premiums unnecessarily, running counter to the aim of policymakers, including the FHFA, to encourage greater use of private capital in housing finance.<sup>10</sup>

## Count future premiums

The cost and procyclicality of the PMIERS could be reduced without unduly compromising their strength by making a few modest changes. Most important, the MIs should be permitted to count some portion of their future premiums as liquid assets to be counted toward their capital requirements.

MI premiums are contractual; they must be paid or there is no insurance coverage. Defaults will rise and premiums will decline in a downturn, but this is only an argument against allowing all future premiums as liquid assets, not any.<sup>11</sup>

A reasonable approach would be for PMIERS to allow MIs to count two future premium renewals on insured loans, half of the four renewals generally expected on a loan, toward their liquid assets. PMIERS already allow this for pre-2009 loans, but it should be permitted for all vintages of loans.<sup>12</sup>

To protect against overreliance on this asset, future premiums should not be permitted to count for more than one-third of the MIs' capital structure, and should not be counted at all if the MIs' nonpremium liquid assets fall below the \$400 million minimum necessary to be an approved mortgage insurer. The MIs would be on solid financial ground, as at least two-thirds of their capital structure would be hard, liquid current assets, and the allowed premium stream would be realized over a two-year period, well before it is needed.

It is also important that future premiums be counted similarly for single and monthly premium policies to keep them on a common footing. While insurers receive single premiums up front, they earn them over time, and only premiums likely to be earned over the next couple of years should be counted. Any unearned premium reserve should also be treated in the same way, as some premiums may be refunded.

In the housing bust, three mortgage insurers were placed in runoff by their state

regulators and paid Fannie and Freddie on only a partial basis.<sup>13</sup> As of the end of 2013, two MIs remain in runoff with close to \$2 billion in deferred payment obligations. The GSEs appropriately want to avoid this in a future housing bust, but this can be avoided by not allowing future premiums to count for more than one-third of liquid assets, and not counting them at all if nonpremium liquid assets fall below the level necessary to be an MI.

Worries that allowing premium credit would create an incentive for an MI to insure more loans on uneconomic terms to inflate premium income seem misplaced. An MI that insures more new loans must also hold more liquid assets. Thus, the only way this strategy would help the MIs meet their financial requirements is if the premium credit exceeds the asset requirement for the new lending. Limiting the premium credit as proposed ensures this will never be the case.

Counting some future premiums would significantly reduce the increase of the average MI premium across all loans being made today, although premiums would still rise for higher-risk borrowers: A borrower with a 650 credit score and a 95% LTV would still experience as much as a 24 basis point increase, less than half of the increase without this change (see Table 4).

## Provide relief for seasoning

The cost and procyclicality of the PMIERS could also be reduced by allowing for some

**Table 3: Conventional or FHA Mortgage?**

Based on a \$220,000 purchase price, 30-yr fixed, standard MI coverage

95% LTV:	Current	Post-PMIERS
760+	Conventional	Conventional
740	Conventional	Conventional
720	Conventional	Conventional
700	Conventional	FHA
680	Conventional	FHA
660	FHA	FHA
640	FHA	FHA
620	FHA	FHA
90% LTV:		
760+	Conventional	Conventional
740	Conventional	Conventional
720	Conventional	Conventional
700	Conventional	Conventional/FHA
680	Conventional	Conventional/FHA
660	Conventional	FHA
640	Conventional	FHA
620	Conventional	FHA
85% LTV:		
760+	Conventional	Conventional
740	Conventional	Conventional
720	Conventional	Conventional
700	Conventional	Conventional
680	Conventional	Conventional
660	Conventional	Conventional/FHA
640	Conventional	FHA
620	Conventional	FHA

Source: Moody's Analytics

capital relief for seasoned loans. The risk of performing loans declines as they age, as home values typically increase and borrowers identify themselves as less likely to default. Less capital should thus be held against performing loans as they age.

Applying seasoning factors on performing loans also allows for the appropriate allocation of capital across loans. Reserving for delinquent loans and ultimately paying claims effectively shifts the allocation of capital from lower-risk performing loans to higher-risk delinquent loans and paid claims. The requirements should account for this appropriate shift with a reduction of that capital required for the performing loans. This can be accomplished through seasoning.

The seasoning factors could be as simple as reducing capital with each year of perfor-

**Table 4: Private MI Premium Impact From Adopting PMIERS With Some Future Premiums Allowed**

Premium multiple, % of risk-in-force			Premium cap, % of risk-in-force			Premium allowed, % of risk-in-force		
	90	95		90	95		90	95
650	5.6%	7.5%	650	5.2%	6.7%	650	5.2%	6.7%
700	4.7%	6.1%	700	2.9%	3.9%	700	2.9%	3.9%
750	3.7%	4.3%	750	1.6%	2.2%	750	1.6%	2.2%
800	3.3%	3.8%	800	1.0%	1.3%	800	1.0%	1.3%
	In-force =	4.7%		In-force =	2.8%		In-force =	2.8%

Net assets required, % of risk-in-force			Change in MI premium, bps		
	90	95		90	95
650	10.5%	13.5%	650	17	24
700	6.0%	7.9%	700	1	3
750	3.3%	4.4%	750	-6	-4
800	1.9%	2.7%	800	-10	-11
	In-force =	5.6%		In-force =	0

**Assumptions**

Premium multiple allowed = 2.1 times annual premium  
 Premium limit = 33% of required assets

Source: Moody's Analytics

mance, or a bit more involved, factoring in house price changes for instance.<sup>14</sup>

**Reduce GSE discretion**

A third critical step would be reducing the GSEs' complete discretion to modify the capital requirements. Some flexibility in setting the requirements is appropriate given potential changes in the risk dynamics of insured loans, but the unfettered discretion provided in the rules is unnecessary and comes at too great a cost.

Investors will require a higher return given their uncertainty regarding the insurers' ultimate capitalization, increasing the MIs' cost of capital and with it the cost to the consumer.

And the GSEs are highly likely to increase mortgage insurers' required liquid assets when market conditions weaken, forcing them to raise additional capital when it would be most costly and raise premiums when it is least helpful to the market.<sup>15</sup> Though an understandable response in a time of stress, it will compound the market's troubles and makes little economic sense given that the initial requirements will have been set based on a stress scenario similar to the housing bust and Great Recession. Changing the capital requirements to require mortgage insurers to capitalize at an

even higher level would mean they would be capitalizing to a scenario worse than that extraordinarily dark period. Such a scenario is theoretically possible, but well out in the tail of the distribution of possible outcomes, and if applied would result in an unnecessarily overcapitalized MI industry.

This issue can be addressed by allowing the FHFA to oversee changes to the requirements so that any changes are consistent with the wishes of the GSEs, but also desirable for the entire housing and mortgage markets.

**Modify the multipliers**

Finally, the PMIERS should modify the prohibitive capital multipliers they apply for certain credit characteristics.<sup>16</sup> Most significant, for loans with a debt-to-income ratio of greater than 43% that are not eligible for purchase by Fannie or Freddie, mortgage insurers must hold twice the capital otherwise required. Should that loan go delinquent, the capital required goes up an additional 55%. Because a mortgage insurer will need to factor in the risk of triggering this delinquency into its pricing, the net effect on pricing for these borrowers is likely to be substantial.

Credit problems increase with DTI, all else being equal, but there is nothing about the 43% threshold that warrants this dramatic

difference in treatment. For GSE loans purchased in 2003, a typical year for the mortgage market, the FHFA reported that the ever 60 day delinquency rate for loans with less than a 42% DTI was 3.79%. For loans with less than a 44% DTI, the delinquency rate rose modestly to 3.92%, and even for loans with a DTI of less than 46%, it was 4.09% (see Table 5). A 43% DTI threshold for such a large additional capital charge is significant for the mortgage market, as on average approximately one-fifth of mortgage borrowers typically have DTIs of more than 43%.

While the near-term effect of this capital charge will be muted because it applies only to loans ineligible for purchase by the agencies, it will add an unnecessary impediment to the return of the nonagency market for higher-DTI borrowers. Indeed, when combined with the agency's exemption from the qualified mortgage rule, which also draws a hard line at 43%, this multiplier makes it difficult to imagine how a robust high-DTI market ever takes hold outside of loans purchased by the agencies.

To address this, the PMIERS should thus be modified to allow for a more gradual increase in asset requirements with DTI, after accounting for LTV and credit score. This should apply to all loans with private

**Table 5: Ever 60 Day and Over Delinquency Rate by Debt-to-Income**

For Fannie/Freddie loans, %

	ALL DTI	DTI<32	DTI<34	DTI<36	DTI<38	DTI<40	DTI<42	DTI<44	DTI<46	DTI >=46	Share of \$ volume with DTI>42
<b>Vintage:</b>											
1997	4.44	3.27	3.49	3.73	3.96	4.17	4.29	4.35	4.38	5.47	12%
1998	3.51	2.66	2.80	2.96	3.11	3.25	3.34	3.40	3.43	4.51	13%
1999	4.38	3.38	3.51	3.65	3.80	3.94	4.05	4.13	4.19	5.66	21%
2000	4.19	3.31	3.40	3.53	3.66	3.79	3.88	3.95	4.02	4.94	29%
2001	3.67	2.63	2.75	2.88	3.01	3.14	3.24	3.33	3.41	5.06	24%
2002	3.56	2.44	2.57	2.69	2.82	2.95	3.06	3.17	3.25	5.13	24%
2003	4.48	2.95	3.12	3.29	3.46	3.64	3.79	3.92	4.03	6.74	24%
2004	7.28	4.74	5.01	5.28	5.57	5.85	6.10	6.32	6.50	9.99	32%
2005	11.90	7.22	7.72	8.23	8.78	9.30	9.76	10.18	10.52	16.11	36%
2006	16.82	9.84	10.51	11.22	11.94	12.71	13.39	14.02	14.55	22.65	40%
2007	21.21	10.56	11.42	12.33	13.31	14.34	15.35	16.32	17.12	30.32	43%
2008	9.41	3.77	4.16	4.57	5.02	5.52	6.04	6.53	6.99	16.09	38%
2009	1.06	0.49	0.52	0.56	0.60	0.65	0.70	0.74	0.78	2.59	24%

Sources: FHFA, Moody's Analytics

mortgage insurance, regardless of whether the loan is funded by the government or private sources.

**Two additional suggestions**

In addition to these steps to mitigate the cost and procyclicality of the requirements, we would suggest two further modifications. As drafted, the PMIERS currently set a minimum RTC of 18-to-1. While this is appropriate for the traditional risk taken above 80% LTV, it is excessive for risk taken further down the LTV spectrum, and will render deeper risk-sharing transactions non-economical. We would thus recommend scaling the RTC floor for risk taken below 80% LTV.

The requirements should also be modified to provide a clearer process for capital relief for reinsurance. Reinsurance is an effective way for MIs to off-load some of their risk, but the requirements rely on an opaque approval process rather than clear standards, rendering the economics of the execution unnecessarily uncertain. The MIs should be encouraged to share their risk with other sources of capital, so the requirements should provide clearer capital relief

commensurate with the reduction in risk through these transactions.

**Conclusions**

The proposed PMIERS are an important step toward putting the mortgage insurance industry on a solid financial footing. If the eligibility standards had been in place prior to the housing bust, with the egregious lending at the time the MIs would have been required to have a risk-to-capital ratio of closer 5-to-1. MI premiums and thus mortgage rates would have been measurably higher for the riskiest loans, which would have limited demand for these loans and likely slowed the market's swing into perilous territory that was its undoing. The housing bust would have been less severe, and the MI industry would have survived intact.<sup>17</sup>

Yet they were not in place, and as with many other industries in the housing finance system during the crisis, the MI industry stumbled mightily. Though the industry has done a good deal to improve its financial condition since, it is still not as strong as it should be, causing the GSEs, lenders and policymakers to think twice before leaning on it to take on more risk.

The PMIERS thus come at a critical moment. The housing finance system needs to bring in more private capital ahead of the taxpayers' risk and needs to find ways to expand lending to those without the wealth to put down large down payments. That is, it needs a healthy and reliable mortgage insurance industry. And the PMIERS are well-designed to provide precisely that.

The proposed rules are not without their faults, though. As drafted they would make the housing finance system more cyclical and expensive than it needs to be, with those at the edges of the credit box impacted most. With some modest changes, however, these negative effects can be reduced significantly. Indeed, the pricing impact of the requirements would be negligible if the GSEs remove the premium they currently place on MI lending to cover the risk that the MI will not be in a position to pay if the loan goes into default. That is perhaps a useful marker of the ultimate success of the requirements, indicating that the housing finance system finally takes the mortgage insurance industry to be strong enough to take on the risk.

### Endnotes

- 1 State agencies are also updating their regulations of the MI industry via the [NAIC Working Group](#) effort to update the Mortgage Guaranty Insurance Model Act. The updated Model Act will include provisions very similar to the PMIERS on operational issues and a capital standard which relies on a modeling approach that includes premium recognition, seasoning, and a more self-conscious effort to avoid pro-cyclicality.
- 2 Since the MIs generally cover 25% of the loss on a defaulted mortgage loan with a 90% LTV, risk-in-force is approximately one-fourth of the insurance-in-force, which currently is just under \$700 billion.
- 3 This is different from the current definition of risk-to-capital, which also includes premium receivable (effectively the most recent month's premium collected by mortgage servicers but not yet passed along to insurers), deferred tax assets, and all investments in affiliated entities are counted.
- 4 This is derived by applying Table 3 of the draft PMIERS to a MI loan portfolio that would exist in a typical or equilibrium housing and mortgage market.
- 5 This Table 5 of the draft PMIERS. To provide some cushion against breaching the required 12:1 RTC, MI companies would likely operate at closer to an 11:1 RTC.
- 6 This is consistent with the distribution of nonperforming loans for the industry in the early 2000s prior to the housing bubble and bust. The current distribution of nonperforming loans for legacy MIs implies a closer to 75% capital charge, which reflects the fact that delinquencies on recent vintages are low and these are smaller vintages, but they remain high on vintages originated during the housing bubble.
- 7 New mortgage insurance companies include Essent and NMI. Arch is a new entrant to the MI industry via its acquisition of legacy MI CMG. Legacy mortgage insurance companies currently operating include Genworth, MGIC, Radian and United Guaranty.
- 8 The spreadsheet calculator used to derive the mortgage insurance premium impacts of the PMIERS is available upon request.
- 9 This assumes that the GSEs do not alter their guarantee fees and loan-level pricing adjustments, and that the FHA maintains its current insurance premiums.
- 10 There has been some suggestion that the enterprises themselves may not interpret some of the provisions strictly. For instance, some have suggested that they may not treat the multipliers for delinquent loans as additive to the capital requirements as initially determined. While this would make some economic sense, mitigating some of the issues we have raised, it would be inconsistent with the text as written. The FHFA and GSEs need to clarify any adjustments to their intended rules in the language itself, to ensure that they are applied as intended.
- 11 The principle of using future premiums toward the capital of financial institutions that take first loss mortgage credit exposure is used in the Johnson-Crapo housing finance reform legislation.
- 12 Four premium renewals is a conservative assumption, particularly in a stress scenario when persistency will be higher given fewer home sales and less MI cancellation.
- 13 The three MIs put into runoff by state regulators during the housing bust include PMI, RMIC and Triad Guaranty. [RMIC](#) resumed paying its claims in full on July 31, 2014, reducing deferred payment obligations to approximately \$1.25 billion.
- 14 The FHFA purchase house price index would be the most suitable measure for this purpose.
- 15 The Fed's CCAR test potentially suffers a similar problem. Unlike the PMIERS, which provide explicit capital requirements, the capital required under the CCAR varies with the new stress scenarios applied each year. Over the past three years, 2011 to 2013, the CCAR severe-adverse scenario has been similar, but it could change, most likely becoming tougher when the economy weakens again. Financial institutions would be required to raise more capital when it would be most costly to do so, making the CCAR stress test procyclical.
- 16 These factors are provided in Table 3A of the draft PMIERS. An additional problem with Table 3A is that the MIs may not know a loan's eligibility status for the various exemptions (GSE, FHFA, etc.). The PMIERS place an extraordinary burden on the MIs to determine that information, which often is not known at the time of the application for insurance. By PMIERS rules, if the MIs do not have sufficient information to determine whether to apply the factor or not, then we must apply the factor. The GSEs should be required to tie the factors to their model results, and the factors should apply regardless of GSE eligibility.
- 17 Since the housing bust in 2008, mortgage insurers have paid out \$46 billion in claims and owe an additional \$2 billion in deferred payment obligations as of the end of 2013. This is equal to approximately 5% of the nearly \$1 trillion in mortgage insurance-in-force at the time. Given a 25% insurance coverage ratio, this translates into a loss of 20% of risk-in-force. This is equivalent to the 5:1 risk-to-capital ratio that the MI industry would have had to maintain under PMIERS given the quality of the lending at the time.

# About the Authors

## Mark Zandi

Mark M. Zandi is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

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A trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public, Dr. Zandi frequently testifies before Congress on topics including the economic outlook, the nation's daunting fiscal challenges, the merits of fiscal stimulus, financial regulatory reform, and foreclosure mitigation.

Dr. Zandi conducts regular briefings on the economy for corporate boards, trade associations and policymakers at all levels. He is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and The Reinvestment Fund, a large CDFI that makes investments in disadvantaged neighborhoods. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360° Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by the New York Times as the "clearest guide" to the financial crisis.

Dr. Zandi earned his B.S. from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania. He lives with his wife and three children in the suburbs of Philadelphia.

## Jim Parrott

Jim Parrott is a senior fellow at the Urban Institute and owner of Falling Creek Advisors, which provides financial institutions with strategic advice on housing finance issues. Jim spent several years in the White House as a senior advisor at the National Economic Council, where he led the team of advisors charged with counseling the cabinet and president on housing issues. He was on point for developing the administration's major housing policy positions; articulating and defending those positions with Congress, the press and public; and counseling White House leadership on related communications and legislative strategy. Prior to his time with the NEC, Jim was counsel to Secretary Donovan at the Department of Housing and Urban Development. He has a JD from Columbia University School of Law, an MA from the University of Washington, and a BA from the University of North Carolina.

## Cristian deRitis

Cristian deRitis is a director in the Credit Analytics group at Moody's Analytics, where he develops probability of default, loss given default, and loss forecasting models for firms and industries; contributes to forecasts and analysis for CreditForecast.com; and writes periodic summaries of the consumer credit industry. His commentary on housing and mortgage markets, securitization, and financial regulatory reform often appears on the Dismal Scientist web site and in the Regional Financial Review.

Dr. deRitis' recent consulting work has included an evaluation of the efficacy and cost of the federal government's Home Affordable Modification Plan, and he is frequently consulted on credit risk modeling and measurement as well as housing policy. He helped develop the company's models to forecast the Case-Shiller and FHFA metropolitan house price indexes and is a regular contributor to the firm's Housing Market Monitor. Dr. deRitis also gives frequent presentations and interviews on the state of the U.S. housing, mortgage and credit markets.

In his previous work at Fannie Mae, Dr. deRitis supervised a team of economists who developed models of borrower default and prepayment behavior. He has published research on consumer credit and credit modeling as well as on the costs and benefits of community mediation. He received a PhD in economics from Johns Hopkins University, where he focused on the impact of technology on labor markets and income inequality. His bachelor's degree in economics is from the Honors College at Michigan State University.

# About Moody's Analytics

## Economic & Consumer Credit Analytics

Moody's Analytics helps capital markets and credit risk management professionals worldwide respond to an evolving marketplace with confidence. Through its team of economists, Moody's Analytics is a leading independent provider of data, analysis, modeling and forecasts on national and regional economies, financial markets, and credit risk.

Moody's Analytics tracks and analyzes trends in consumer credit and spending, output and income, mortgage activity, population, central bank behavior, and prices. Our customized models, concise and timely reports, and one of the largest assembled financial, economic and demographic databases support firms and policymakers in strategic planning, product and sales forecasting, credit risk and sensitivity management, and investment research. Our customers include multinational corporations, governments at all levels, central banks and financial regulators, retailers, mutual funds, financial institutions, utilities, residential and commercial real estate firms, insurance companies, and professional investors.

Our web periodicals and special publications cover every U.S. state and metropolitan area; countries throughout Europe, Asia and the Americas; the world's major cities; and the U.S. housing market and other industries. From our offices in the U.S., the United Kingdom, the Czech Republic and Australia, we provide up-to-the-minute reporting and analysis on the world's major economies.

Moody's Analytics added Economy.com to its portfolio in 2005. Now called Economic & Consumer Credit Analytics, this arm is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at [www.economy.com](http://www.economy.com).

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