

## The Math of Sisyphus<sup>1</sup>

For the badly broken US residential mortgage supply chain, our fund, The Chalice Fund, helped found Mortgage Resolution Partners.<sup>2</sup> MRP will bring investors – pension plans and foundation/endowment funds – to communities like San Bernardino, California to fund the use of eminent domain to seize underwater mortgages where homeowners are current in payments and modify or refinance them. Problems from the mortgage crisis will be solved -- bad title, bad docs, bad actors and bad finance -- without any legislation or government money.<sup>3</sup>

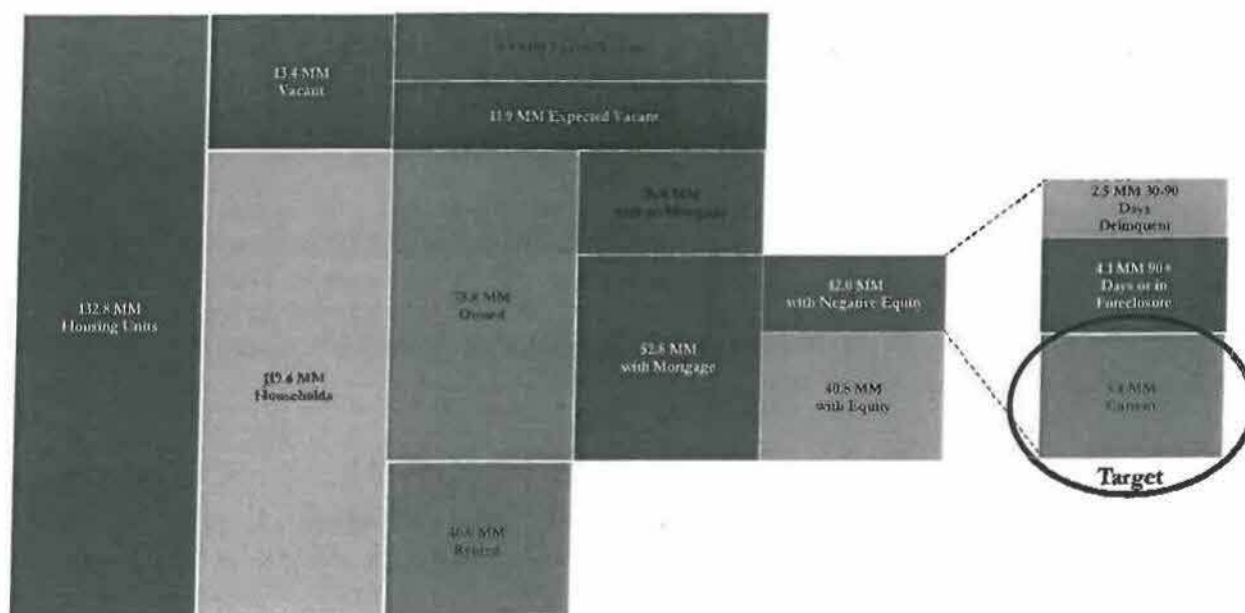
This is a win for the community -- homeowners, realtors, banks and builders -- and a win for holders of \$600 billion in senior bonds. It will curtail appreciation for holders of \$25 billion of mezzanine bonds priced today at 16% of \$125 billion of face value. Hedge funds owning the mezzanine bonds hope to recover the 84% discount by betting on the continued paralysis of current underwater homeowners.

This paper seeks to inject a few key facts, for the benefit of those who are not mortgage wonks:

- The market for mortgage backed securities is already *priced based on "fair market value."* Paying the owners of mortgages fair market value in cash will make liquid *the very value a smart, careful market has already anticipated.* Bondholders will get cash ahead of schedule.
- The current system is a massive transfer payment from homeowners to hedge fund managers. Families are paying substantial sums because conditions which securitization originators fully baked into their models have metastasized in the crisis to allow mezzanine security owners to profit beyond all expectation. *Any fair solution will be unwelcome to the hedge fund holders.*

The dysfunction of the mortgage supply chain is a rare event in US economic history. There are many putative causes, but to debate them involves politics, and the politics of the economy is a bonfire of vanities. Solutions are real if they work where real people live, period. At the local level, practicality is *everything*. With a practical, replicable solution, the US mortgage market and economy can be cured.

A succinct view of US housing from the incomparable John Burns Real Estate Consulting Group:



Sisyphus knows he could walk away. He pays every month because his home is a place for his family and a haven for the less fortunate in an extended family. The kids' schools and the family church are nearby. His job is nearby. His wife has lost her job, but works part time locally. When things are tough, home is the lifeboat, and times are tougher than ever. Note that when the Sisyphus family makes decisions, they do so based on non-financial aspects first (family loyalty, education as a virtue, charity as a requirement, etc.). This is not hagiography: there is ample research showing that financial considerations are not uppermost in middle class decision-making.

Let's examine the \$2,000 that Sisyphus pays each month: the statement says it is part interest and part principal. You remember what dad said about mortgage principal: it is repaying what you owe the bank and putting it into your pocket as equity. A principal payment is money you pay yourself: it goes from "owed" to "owned" and you are happier for it. For Sisyphus and the millions like him, there is no such friendly math: before the payment he had \$0 equity and after the payment he has \$0 equity: for the homeowner, payments on underwater mortgages are effectively 100% interest.<sup>9</sup>

\$24K on \$300K is **8%** interest that Sisyphus actually pays -- more than *twice* what a new mortgage rate would be. The last time mortgages were at 8% was August 2000 when the prime rate was 9.5%.

If Sisyphus walked away and you bought his house, you would pay \$170K (the research shows that abandoned or foreclosed homes sell at 15% below the local market). So *\$170K is the value that Sisyphus is actually preserving with his \$2,000 each month.* Let's recalculate: \$24K on \$170K is **14%**. The last time mortgage rates were anywhere near 14% was 1981 at the height of the inflation cycle when the prime rate was also in double digits.

Another perspective: you bought the Sisyphus house for \$170K with an 85% mortgage: \$145K (less than half the Sisyphus mortgage) having a monthly payment of \$700 (65% less than Sisyphus). You put in \$25K of equity. At \$100 of foregone earnings on your \$25K, you pay 800 a month to own the house for which the Sisyphus family was paying \$2,000: a discount of 60% for the same property.

Yes, that is how the system works. And that is how a healthy system is DESIGNED to work: default, foreclosure, abandonment, short sale, purchase, finance. That is how Wall Street expected the system to work for every loan that became more than 15% underwater (115% LTV). That is what they "knew" would happen as soon as homes went underwater by more than a smidge.

This disclosure is in every prospectus, discussed in every internal memo and client presentation: *if home prices drop and put homeowners underwater, they will walk away and our loans will not be worth what we had hoped.* It is right next to the other "homeowner option" disclosure: *if interest rates fall and the homeowner can refinance at a lower rate we will get paid off sooner than expected, but our loans will not earn what we had hoped.*

**In the United States the lender is "at risk" for a sharp drop in interest rates (refi), a sharp drop in home prices (walk-away) and a sharp drop in household credit (bankruptcy).**<sup>10</sup>

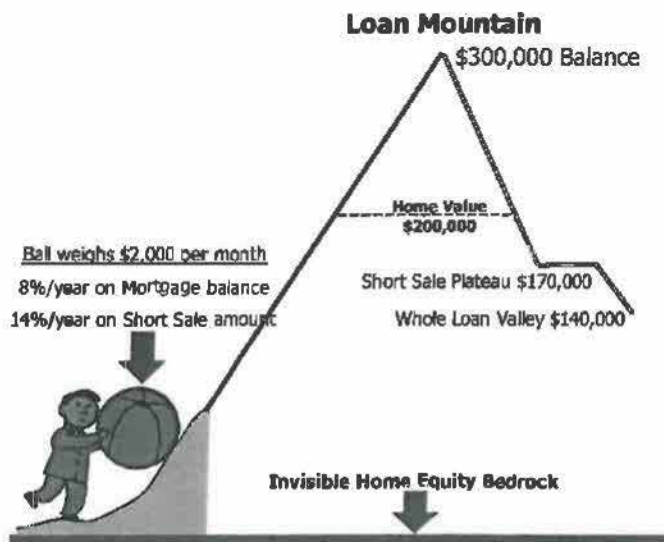
When lenders are at risk but homeowners, for whatever reason, fail to exercise their walk-away option to protect themselves, the effect is draconian.

Here it is in a picture:



Once Sisyphus defaults, it will take months to evict, thus reducing returns. Foreclosure will cost \$15K and a like amount will be spent to fix up and sell the house. Assuming little or no market movement, the sale will be at \$170K. The stranger will make a single digit unlevered return on capital.

If he could do it faster or if the local market improves he can do better. If he is buying with borrowed funds he can do a lot better (at much more risk). It is a lot of work for a few dollars, and when the stranger includes his salary (or fees), the unlevered return is going to be only a few points.



The math of Sisyphus is not really that complex. There are **real numbers: dollars paid by the family** and **value on a sale** and there are **imaginary numbers: loan balance** and the **false principal payments**. What are real and imaginary numbers for the PLS that owns the mortgage?

#### The PLS that owns the Sisyphus Mortgage

A PLS is a financial robot. Such have walked the world for a thousand years: trusts, funds, ESOPs, charities, corporations, ETFs, partnerships, pension plans, the UN, NGOs, foodbanks, cooperatives, communes and the like. They are not bad; they are good. They are not optional, they are essential. Modern life would be impossible without them.

A PLS can be visualized as a bucket with several owners. In this case, the bucket has only one asset: the Sisyphus family mortgage. It paid out \$340K and spent \$10K of its own expenses to help Sisyphus buy his house, so it needed to raise \$350K. To get the money, the PLS sold three pass-through securities to investors (pass-through means that the mortgage payments are passed through to investors in a cascade, without federal or state taxation):

- A **senior bond** for \$200,000 with first claim on cash flow to pay \$200K face plus interest at the rate of 5% ("bond")
- A **junior bond** for \$100,000 with second claim on cash flows to pay accumulating interest at a rate of 8% plus, someday, \$100K face ("mezzanine").
- **Residual** partnership interest for \$50,000 ("equity") entitled to all cash left over.

The publicly traded value of the three public issues is no longer the same as the NAV of the PLS:

Senior bond	\$155,000	← trading at par
Junior bond	15,000	← trading at 15/100 = 15% of par, pays interest only.
Partnership Capital	0	
Total Market cap:	\$170,000	= 56% of NAV, a 44% discount. <sup>11</sup>

Investors – pension plans, families, hedge funds, etc. – have lost a lot in the market but that was caused by the mortgage crisis, not the homeowner. It happened because investors can see the facts, including the value of the home underneath the mortgage.

Investors can see that Sisyphus might default. To buy the mezzanine, an investor must rethink the \$8,000 of so called “interest” and consider it in part return of investment rather than return on investment. There is a risk that in the end the mortgage will pay off less than \$170K, so \$8K a year has to go a long way. On the other hand, the family is paying \$2,000 per month and that is a lovely double-digit interest rate. Who knows, they might pay it again next month!

For the PLS, the **real numbers are the \$2,000 the family pays** each month and the **real dollars the public pays for the securities** issued by the PLS. The **imaginary numbers are the balance sheet numbers**, the inside accounting that posts the mortgage as “worth” \$300,000.

If we insist that the imaginary and the real numbers are reconciled, an asset held at \$300K has to be written down for a whopping loss on the GAAP books of the PLS. But *no one gives a damn!* No one “owns” the GAAP loss recorded in the PLS since these are pass-through securities that trade on actual collateral value and cash flow (real numbers), not accounting fictions (imaginary numbers).

Oh, that Genius Market

**The aggregate market cap of PLS-issued securities takes into account dramatic discounts for underwater mortgages.**

The market for PLS securities is quicksilver, with smart traders running enough computers to dim the lights in Newport Beach, Pasadena and New York (mortgage bond traders recalculate the value of the mortgages every minute of every day based on new rates, etc.). There are 102,000 securities issued by a few thousand PLS, and each has a price. We can add up the market pricing and compare it to the mortgage loans underneath.

Traders start with the value of mortgages that are not underwater and consider those “money-good” (i.e. they will pay in full eventually, by the homeowner or in a refinancing). Money-good mortgages are worth what it says on the balance sheet, and the delay in repayment is compensated by interest. Traders tweak the value based on interest rates and speed adjustments (“speed” measures how long it takes for a mortgage with an above-market rate to be refinanced by the homeowner). These adjustments are small compared to what comes next: valuation of mortgage losses in two situations: underwater mortgages and “low-equity” mortgages.<sup>12</sup>

Every mortgage trader knows how little an impaired mortgage is worth and trades on that knowledge every day. We ignore the rate and speed adjustments (this is a “big numbers, big concepts” piece) and add up the real market value of every single PLS security to compare it to the imaginary number that is the sum of all the mortgage balances in the PLS bucket.



Now that we know there is no real difference between the market value of a loan and the market value of a PLS, and we understand that the robots cannot think, we might ask **why these facts are so widely misrepresented?** Why is no benefit flowing through to the homeowner?<sup>14</sup> Let's go where truth often lies waiting: the question *Cui bono?*

### Cui bono?

Who benefits if the Sisyphus family waits a decade to exercise the right to walk away? In that scenario the senior bonds will pay off at par and **all gain will go to the mezzanine**, to hedge funds who paid \$15K to get \$8K each year and who expect for full face value of \$100K at liquidation a decade hence.

What is the "take" of the hedge fund manager who invests \$15K and gets back \$180K (\$8K per year for ten years + \$100K) for a profit of \$165K inside his fund? Let's add it up:

- **Management Fees = \$10K**  
Over ten years the average Mezzanine price might be \$50 (it is \$15 today and will be \$100 at the end). The manager gets 2% or \$1K per year for ten years = \$10K.
- **Performance Fees = \$31K**  
The hedge fund charges 20% of the gain less fees. 20% of \$165-10 is \$31K.
- **Return on GP Capital = \$12K**  
The fund capital that is owned by partners in the hedge funds averages 10%, so they get 10% of \$165 - 10 - 31 = 124 ("LP after fee gain") = another \$12K.

The total take is \$55K over ten years, so long as Sisyphus is discouraged from exercising his option to walk away. If he walks away tomorrow, the whole \$55K is jeopardized. If Sisyphus waits a year, the hedge fund families (not the investors, the families who own and work at the hedge fund) get \$3K<sup>15</sup> over one year instead of \$55 over ten years.

Sisyphus pays a total of \$24,000 a year, so that is a low of 12.5% (\$3/1yr/\$24) and a high of 23% (\$55/10yrs/\$25) paid to hedge fund families as part of his mortgage check each month.

Let's shift to another set of numbers and tote up what these families owe each month:

- **PLS:** 2.3 million owe an average \$1,500 first mortgage plus \$200 second/HELOC  

interest <i>presented as</i>	4.75%	8.25%
interest <i>actually</i>	6.47% on full balance <sup>16</sup>	9.42%
Total	\$3.45 billion	plus \$0.46 billion

**\$4.0 billion every month** where the homeowner should have walked away<sup>17</sup>

We do not have complete data on seconds, so from here on we will ignore them:

- **Agency:** 6.1 million owe an average \$1,000  

interest <i>presented as</i>	5.25%
interest <i>actually</i>	7.00%
Total	<b>\$6.1 billion/month</b>

- **Agencies** generally issue only one security for each bucket of mortgages, and the value of each loan is guaranteed by the US government. Cash flows are passed through and influence the value of the securities in the same way described above, except that when a mortgage is *finally proven to be impaired* the government kicks in the missing money to pay security holders. Although the procedures are not simple, if every underwater mortgage in an Agency pool were reset tomorrow to keep the families in the homes, security prices would not move a jot but the government would recognize a huge paper loss on the "mark to market".

Politics is the problem here, not accounting. In Washington, for every bad number there must be blame. In the logic of DC, putting millions of families through foreclosure and writing off huge losses after short sales is "sensible" and "inevitable" but making a smaller write-off to keep the same families in their homes is a "give-away" or "a breach of trust with taxpayers."

When the Sisyphus mortgage is held by Agency RMBS, a Sisyphus family is not paying a hedge fund manager's family; they are paying to help politicians avoid thinking about real problems, real numbers and real solutions; to perpetuate a bipartisan political culture of blame and promises.

In the aftermath of the crisis, many at the FHA have mistaken the status quo for stability. If confidence is the currency of stability, the confidence needed is not the confidence of investors or the false promises to taxpayers but the confidence of families – tens of millions of people – that they may remain in their homes at fair cost, able to work and worship, save and spend.

#### A Coda about Public Policy and the Politics of Moving On

There has been little talk here about the families themselves – their lost dreams or their curtailed prospects. We have not dwelt on the importance of these families as an engine for growth through productivity, education and entrepreneurship. We have not dwelt on their race or how long they have been Americans or how many serve in the Armed Forces or the local soup kitchen. Suffice it to say that be you a Democrat or a Republican, these forty million Americans are the very heart of your America. Their travail – now and in the future when they default – mimics America's travail; their economic recovery is essential to America's economic recovery.

Each of us has opinions on the causes and costs of the mortgage crisis, and we may castigate one actor or another for mistakes made or venality revealed, but that is in the immutable past. For the future, *something must happen*. The system has been broken for years; now towns and counties can act to make real change. The result may be a better future, sooner, made one Sisyphus at a time.



- <sup>6</sup> Sisyphus was a trickster who fooled the gods and was sentenced to roll a rock up a hill to the top, where it would promptly roll back to the bottom. In the current mythology of the mortgage crisis, homeowners with underwater mortgages are painted as tricksters who defrauded the banks into giving them crazy mortgages. 5.4 million homeowners still have their shoulder to the rock while the banking gods cash government checks and a few hedge funds expect gains from a predatory trade.
- <sup>7</sup> The numbers used in this paper are rounded to illustrate the math. Also see endnote 1 for a complete disclaimer about numbers: they are mine, personally, they are illustrative, and they have not been calculated or endorsed by Mortgage Resolution Partners or anyone else.
- <sup>8</sup> Much of the bank holdings are mortgages that were trapped "in pipeline" during the crisis were issued at the top of the property market and are deeply underwater. The banks holding such conduit loans were big players in the mortgage boom pre-crisis (Citi, BofA, Wells, etc.). At the other end of the quality spectrum, certain banks hold jumbo mortgages: wealthy borrowers whose mortgages are still at low LTVs and who have external assets and income as well as high priced property that is the direct collateral (First Republic is the iconic portfolio lender in this category and has virtually no write-offs as a result of good strategy and underwriting the old fashioned way).
- <sup>9</sup> This is not a personal credit line, it is a mortgage. When you pay off your credit line, you "owe less" and so have "more equity" in yourself. For a mortgage, you do not owe any amount beyond the value of the asset (that's the "walk away without penalty" part of it) so Sisyphus is paying higher interest (i.e. if the payment is \$X and principal is \$0, the whole payment is interest).
- <sup>10</sup> Not so in other countries. Elsewhere, mortgages may attach to the borrower (the UK is an example, to Ireland's present distress). If you view this as "worse" than the US, there is another system that is demonstrably "better" as well: in Denmark and a few other jurisdictions, mortgages are financed through issuance of covered bonds. These bonds may be bought by the homeowner and used at face value to repay the mortgage (i.e. the homeowner pays the lower of face or market). This elegant method improves the elasticity of the mortgage supply chain and prevents predatory securitization. More information can be found under "Downloads" at [www.Absalonproject.com](http://www.Absalonproject.com).
- <sup>11</sup> Here is a more detailed tabulation of the securities issued by PLS. By category (rated investment grade senior, junk and unrated senior, mezzanine and residual interests), the table shows the face value at issuance in three categories of cash flow participation (claiming principal with write downs taken into account; claiming principal ahead of any write-downs; and interest-only). The market cap today, reflecting payments and current market values for every security, is also shown:

	Prin w/ WD	Prin w/o WD	IO	Total	Market Cap
<b>Investment Grade</b>	<b>58</b>	<b>24</b>	<b>7</b>	<b>89</b>	<b>69</b>
<b>Senior Junk/Unrated</b>	<b>665</b>	<b>201</b>	<b>134</b>	<b>1,000</b>	<b>531</b>
<b>Mezzanine</b>	<b>144</b>	<b>5</b>	<b>2</b>	<b>151</b>	<b>25</b>
<b>Residual</b>	<b>0</b>	<b>0</b>	<b>160</b>	<b>160</b>	<b>0</b>
<b>Total</b>	<b>867</b>	<b>230</b>	<b>304</b>	<b>1,401</b>	<b>625</b>

The original cap structure of the PLS market provided little protection against home price collapse. Almost all the mezzanine and residual (equity-like) tranches have been written down, leaving a current cap structure outstanding of 96% senior and 4% mezzanine. But remember that when issued, the market cap and the face value were briefly the same.

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LTV. If LTV were 130% and effective interest 6.5%, real interest rate is 8.5% ( $6.5\% \div 1/130\%$ ).

- <sup>17</sup> One, in many cases of course the homeowner is indeed in default or in foreclosure. Two, they cannot simply "walk away" from the HELOC in most cases. That said, let's understand that these underwater families are paying not only for a first mortgage that has no enduring value, thus doubling their effective interest rate (or worse), they are also struggling to pay additional debt from what little remains after paying the first mortgage. Do not ask how HELOCs are valued – they are worthless in terms of collateral and the borrower is an awful credit – but to banks they are golden. Since the HELOC is current (it is the family cash financing tool since credit cards are curtailed by the issuers to these households), the balance is treated as money-good at the bank. More illusory assets included in bank capital – by the hundreds of billions.
- <sup>18</sup> But why would managers of the PLS bonds be in a swivet? "Appalling" said one. Indeed? Ignorance, assumption, uncertainty and fear all play a role in these early days, and each will be cured in time. Predatory traders hold a huge share of \$25 billion of deeply discounted mezzanine bonds (although long bond managers also bought, hoping to juice returns for their clients). The key difference is the sharing ratio of the hedge funds: Bond managers charge less than ½ of 1% per year to run funds and get **no performance fees**. Their clients are pension, foundation, endowment, family and sovereign entities. In general, their clients are more aligned with the 5.4 million underwater homeowners than with the hedge fund families.

Bond manager clients have much more to gain from a recovery in the mortgage market than they stand to lose in any share of the \$25 billion of marked down mezzanine bonds, trillions more. When the dust settles, it will be the 125 million Americans covered by American's \$16 trillion of pensions who will – through their bond managers -- finance American counties and towns to benefit the 40 million family members trapped in underwater mortgages.