



**Bank
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TD Economics

Special Report

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U.S. HOUSING MARKET – FISHING FOR THE BOTTOM

There's a growing impression that U.S. home prices have hit rock bottom and that the housing market could soon recover. How many times have we heard anecdotal reports of how cheap it is to buy a home in Florida with a \$600,000 condominium in 2006 now selling for half that, or the home in the Midwest selling for \$1? However, our findings leave the impression that the misery of weak home prices can be sustained for much longer, possibly 5 years or more. This doesn't mean that prices will fall for 5 years, but any recovery in home prices is unlikely to be vigorous.

This report deals with the classic economic issue of demand and supply and the price that clears the two. Normally price declines spur demand and curtail supply, hence moving a market in excess supply toward balance. True to form, prices have fallen sharply pretty much across the United States and this has perked up key measures of demand. It has also drastically cut into the supply of new

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HIGHLIGHTS

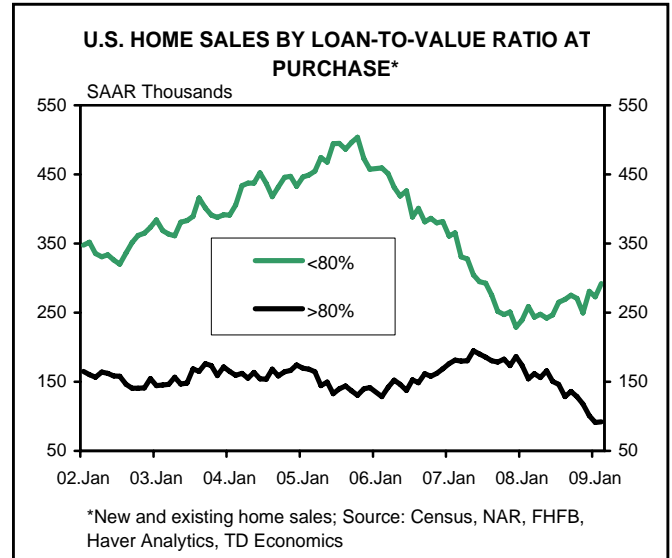
- The steep drop in U.S. home prices has perked up key measures of demand and drastically cut into the supply of new homes being built.
- This process has not been enough to bring balance back to the housing market, because price declines have also increased the total supply of homes on the market through foreclosures.
- The price declines needed to make the market affordable for new buyers is leaving many homeowners with negative equity in their homes. Already 6-11 million mortgages may have gone underwater by February.
- A further 10% decline in home prices over the next year could drive a second wave of underwater mortgages and increase this figure to 12-16 million.
- Combined with our forecast for total job losses by next year to reach 8.3 million, unemployment will exacerbate foreclosures into 2011.
- Breaking the interaction between underwater mortgages and unemployment remains the key challenge to rebuilding a healthy housing market. Once broken, affordability will again drive the market.
- Based on a number of demand measures, affordability has improved, but is still not enough to pull in enough new demand.
- So even after we have addressed the current foreclosure-driven supply glut, and new home construction comes back to life, it will take years for home prices to come back to life.
- Further regional highlights are on page 5.

homes being built - witness the plunge in new home construction to record lows. But there is a twist in the current situation. There is a second source of supply coming from soaring foreclosures that continue to dump homes on the market. As prices fall, a greater number of mortgages are pulled underwater (when the mortgage exceeds the value of the home), raising foreclosures, thereby pumping up this channel of supply. So, the traditional theory that prices fall until it clears the market is complicated by the fact that it is now dumping more supply onto the market. We are dealing with three dynamics from price declines. Falling prices raise demand, cut supply of newly constructed homes, but also raise the supply of foreclosed homes.

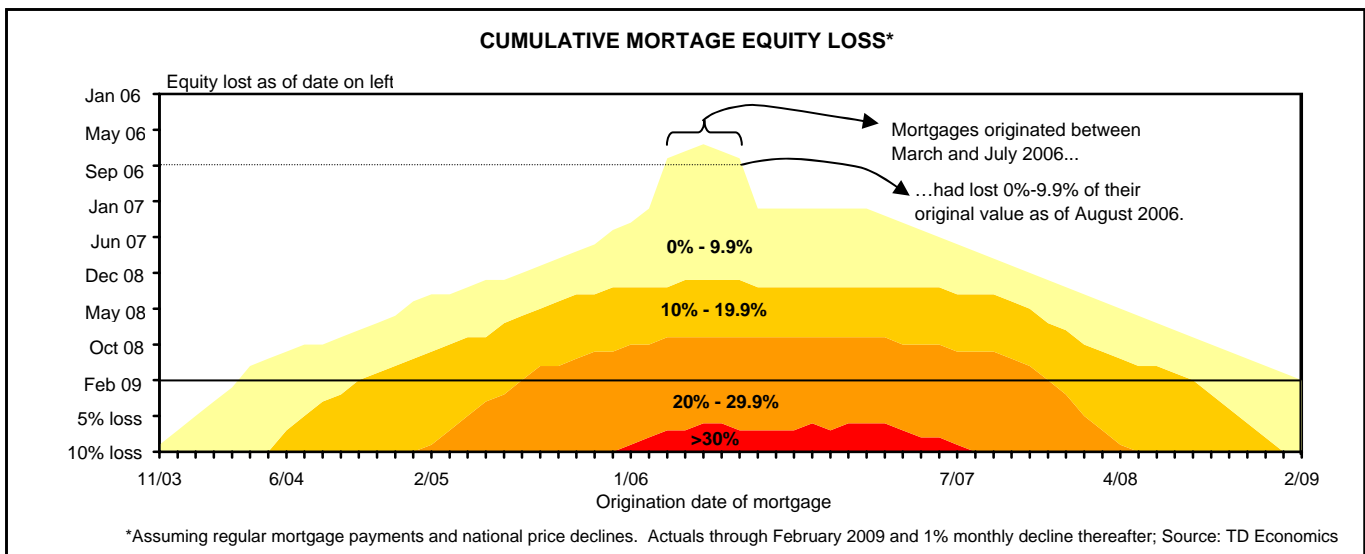
In order to determine at what price and when the regional U.S. housing markets might balance, we must examine how demand and the two facets of supply are and will behave to price declines. In this report we examine 3 critical measures of demand and the likely path of foreclosures across the 4 broad markets – West, South, Northeast, and Midwest.

In doing so, we came to the following conclusions:

1. The incentive to buy a home has improved markedly across all regions, but is not yet at levels to entice sufficient buyers to offset new supply coming onto the market. As a result, home prices need to fall considerably more.
2. But, if prices decline by 6-10% in the next year, there is a danger that a second wave of foreclosures could hit the American economy from underwater mortgages, exacerbating the supply glut already in existence. ¹



3. The Midwest and South are particularly vulnerable to a second wave of underwater mortgages.
4. This may be a necessary evil to establish a price that can finally clear the market. Our analysis shows that in the West where price declines have been the steepest and foreclosure activity has been among the greatest, the peak impact from underwater mortgages appears to have passed.
5. The Northeast region may be the exception to this rule, as it provides less evidence that underwater mortgages present a major supply risk. However, it continues to suffer from the traditional supply source – too much construction in the pipeline – that other regions have already successfully worked off.

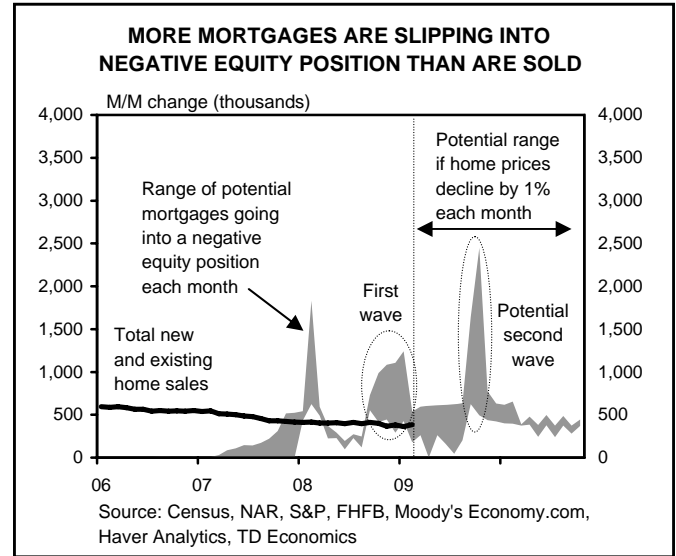


The combination of underwater mortgages and being unemployed too often leaves homeowners out of options. Recent government assistance initiatives are helpful, but may not go far enough in breaking the negative feedback loop between falling prices and new foreclosure. The bottom line is that prices need to fall further across the United States. Even though this risks dumping more supply into the market from foreclosure activity, the West offers an example that the impact from underwater mortgages does eventually peak and further price declines have a waning impact on supply. The scale begins to tilt in favor of buyers. However, demand in the West has outpaced supply for a year, and prices are still trekking lower. Even as buyers begin to pick up the slack, prices can linger in no-man's land for years to come.

The Big Picture

The moral of the story is that contagion from one mechanism to the other can be quite circular and self-sustaining. Falling prices make buying a home more affordable, but simultaneously increase the burden on existing homeowners who lose the equity cushion in their home. The severity of this feedback loop ultimately depends on a decision that was made when the home was first purchased – how much of a downpayment was placed on the home? The smaller the downpayment and accumulation of equity, the greater the risk that in an environment of falling home prices, the mortgage will slip underwater, thereby leaving existing homeowners owing more on their mortgage than the home is currently worth.

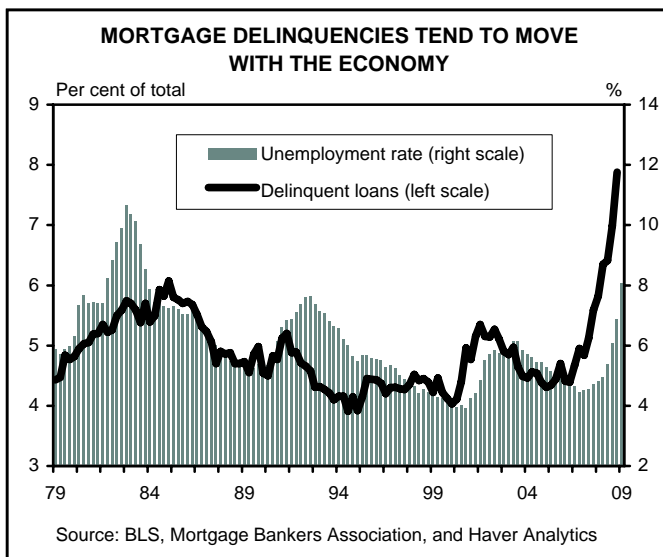
In fact, we estimate that since September 2008, the

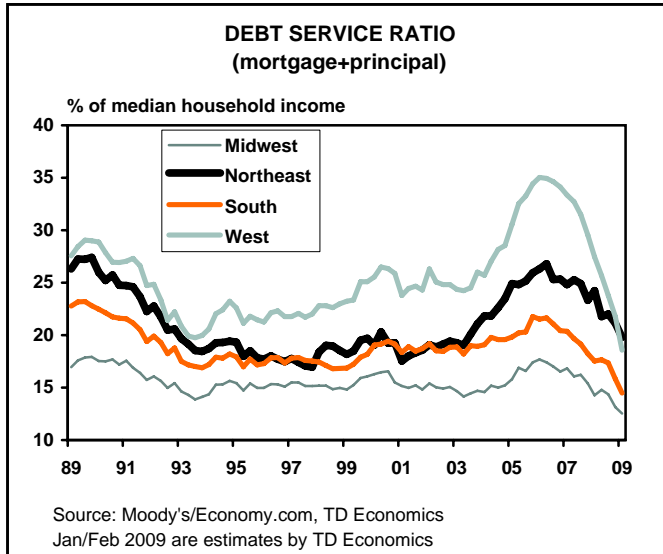


number of mortgages slipping underwater each month was greater than the number of newly-originated mortgages, possibly by a factor of two to three times. This means at-risk mortgages have been growing faster than new mortgages. In terms of levels, we estimate that at its worst in 1991, about 94,000 mortgages in total may have gone underwater, equivalent to about one-third of new mortgages made in a single month. In contrast, 6-11 million U.S. mortgages may have slipped underwater by February 2009, the equivalent of one-fifth to one-third of all new mortgages taken out over the last five years.

But, we believe this is only the first wave of underwater mortgages, with a second wave still likely to come. The current first wave consists predominantly of borrowers who bought homes in the last few years with less than 20% down. The second wave will come if prices decline a further 6-10% over the next year, and begin to draw in the peak of buyers from this housing cycle who bought their homes in the 2004-2005 period with at least 20% down.

The greatest remaining risk to the housing market will be the interplay between the unprecedented lack of home equity and the ongoing loss of jobs. We expect total job losses during this recession to mount to 8.3 million by early 2010 – the total number of job losses seen in the last three recessions *combined*. As a result, the unemployment rate is expected to push slightly above 10% and hold at that level through 2011. With an inability to tap home equity as a temporary source of income following a job loss, underwater mortgages will continue to exacerbate the foreclosure problem. Since the unemployment rate tends to lag



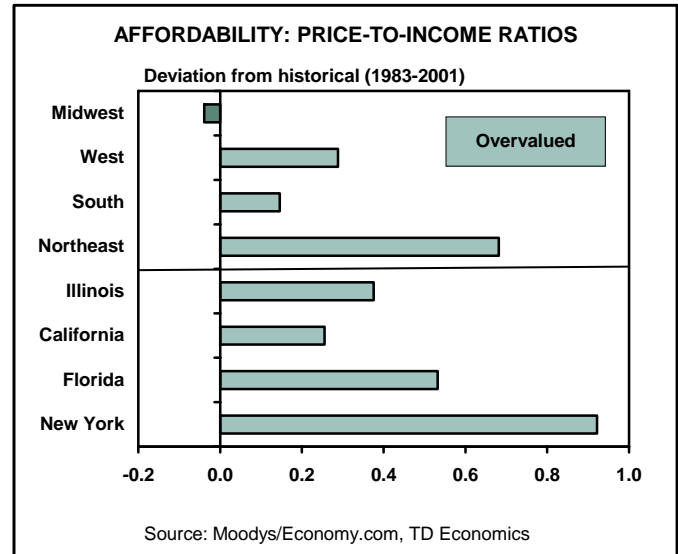


any economic recovery, mortgage delinquencies will likely continue to rise well after the economy has started to recover.

But, while home price declines are a bane for existing owners, they are a boon for buyers looking for an affordable purchase. Whether a buyer is looking to buy a home as an investment or as an alternative to renting, many indicators on affordability suggest that the housing market on average still isn't cheap enough. In spite of the unprecedented low level of construction, the market still can't attract enough new buyers in order to work off the existing high levels of inventories and absorb the ongoing flow of new foreclosures.

The Regional Pictures

The story unfolds slightly differently when we break out the data on a regional basis. In particular, there are budding signs that conditions are ripening for a recovery in the West. In contrast, the South provides little evidence that a bottom is near. The Northeast appears to face some



unique challenges related to the risk that too much new supply from construction is still in the pipeline. In the Midwest, all of the affordability indicators are signaling 'buy', however the troubles in this region were not embedded in a housing bubble, but rather in economic distress that was exacerbated by the national housing fallout. The table on page 5 highlights some key indicators of the ongoing imbalance between regional housing supply and demand. We believe there are three key supply risks – new underwater mortgages, rising unemployment, and the existing level of unsold homes – which remain our focus for addressing the glut of homes on the market. We then balance this with a focus on three key affordability measures – the debt service ratio (DSR), price-to-income ratio (PIR), and price-to-rent ratio (PRR) – to gauge whether there is sufficient demand for housing. We use this same framework as we move through each of the four U.S. regions – the Northeast, West, South, and Midwest – in examining the specific progress and ongoing risks in each area.

Footnote

- 1 Our measure of underwater mortgages is partly based on past sales, so underwater mortgages as of a given date include both mortgages currently underwater, as well as mortgages which may have already foreclosed after slipping underwater.

REGIONAL HOUSING SUPPLY AND DEMAND INDICATORS - CURRENT AND ONE YEAR PRIOR

Supply risk 1: Underwater mortgages				Supply risk 2: Economic variables	
The share of mortgages made since 2004 in which borrowers slipped into negative equity and the average monthly home price decline that would ensure the number of "at risk" mortgages are growing slower than the number of new mortgages.				The average unemployment rate for states in the region	
	Underwater mortgages as a % of total [^]		Price sensitivity ^{^^}	Unemployment rate	
	(Feb 09*)	(Further 10% decline)	(Feb 09*)	(Feb 09)	
Northeast	9%	14%	1.4% / 0.8%	Northeast	7.7%
West	30%	33%	1.5% / 1.2%	West	9.2%
South	23%	32%	0.9% / 0.9%	South	8.1%
Midwest	36%	47%	0.8% / 0.7%	Midwest	8.6%
	(Feb 08*)			(Feb 08)	
Northeast	2%			Northeast	4.8%
West	5%			West	5.3%
South	5%			South	4.7%
Midwest	12%			Midwest	5.4%
Supply risk 3: Current supply				Demand: Incentive to buy	
The number of months it would take to sell the existing stock of unsold homes at the current pace of sales.				The ratio of home prices to household income and mortgage and interest costs as a % of median family income.	
	Existing homes	New homes		Price-to-income	
	(Feb 09*)	(Feb 09*)		(2008 Q4)	Debt service
					(2009 Q1*)
Northeast	8.5	16.3		Northeast	3.5
West	7.3	13.3		West	3.6
South	12.1	10.8		South	2.6
Midwest	11.3	11.8		Midwest	2.1
	(Feb 08*)	(Feb 08*)		(2007 Q4)	(2008 Q1)
Northeast	6.8	14.3		Northeast	3.9
West	12.4	10.1		West	4.9
South	10.8	9.3		South	2.9
Midwest	10.0	11.8		Midwest	2.3

*TD Economics estimate; ^Share of cumulative home sales since January 2004 as of Feb 2009, Feb 2008, and forecasted for a further 10% decline in home prices; ^^Next 12 months / subsequent 12 months; Source: Haver Analytics, Moody's Economy.com, TD Economics

WEST	NORTHEAST
<ul style="list-style-type: none"> The peak impact from underwater mortgages has likely passed. The oversupply of new and existing homes remain high, but improved significantly over the last year. Based on income and rent levels, affordability must improve further. 	<ul style="list-style-type: none"> The Northeast appears to be on higher ground, with less risk of a second wave of underwater mortgages. Oversupply of new homes and ongoing construction remains too high. Affordability remains poor, suggesting prices need to fall considerably to pull in more demand.
SOUTH	MIDWEST
<ul style="list-style-type: none"> The share of underwater mortgages relative to home sales over the last year may double in 2009. Supply throughout the states in the region remains some of the highest in the nation. Home prices remain high relative to rental costs and income levels, limiting new demand. 	<ul style="list-style-type: none"> The Midwest already had one of the worst levels of underwater mortgages and may worsen further. As a result of foreclosures, existing home supply remains particularly elevated. Affordability is good relative to history, but the future shape of the economy is the bigger concern.

The West has crest

While it appears that the housing market in the West (and California in particular) is no longer trolling along the bottom, it still has to see further improvements in affordability and reductions in inventory before a sustainable recovery can take hold to stabilize prices. Still, the West appears closer to this end-game than most other U.S. regions.

Supply risk 1: Underwater mortgages (neutral)

The words Florida and California normally conjure up images of sunshine and white-sand beaches, but to any economist, these two states are the poster children for housing markets in severe distress. However, at least in the case of California, which we use as a broad barometer for the West, there are budding signs of a recovery.

There is no doubt that the rapid home price declines and low downpayments in recent years have come home to roost in the West. We estimate that around one-third of mortgages on newly-purchased homes slipped underwater by February 2009. But, the West saw its accumulation of underwater mortgages accelerate early in the housing downcycle relative to other regions. The West has also seen the unemployment rate rise faster than in other regions, so both risk factors were frontloaded. This is why the West has had such outsized foreclosures to date.

Moving forward, though, we find that with the bulk of at-risk mortgages having already slipped underwater, the Western market is now the least price sensitive of any region in accumulating new underwater mortgages. A further 10% decline in home prices has the potential to in-

crease the stock of underwater mortgages by 26%, half the national average. For cities like Los Angeles, month-over-month price declines would have to exceed 1.7%-2.0% over the next two years in order to drive the flow of newly underwater mortgages above the monthly pace of mortgage originations. This is about twice the pace of home price declines that most other major U.S. cities can tolerate. Rather than a reflection of strength, though, this is more a reflection that the bulk of mortgages at risk of becoming underwater have already done so due to the already large cumulative price declines in the L.A. market.

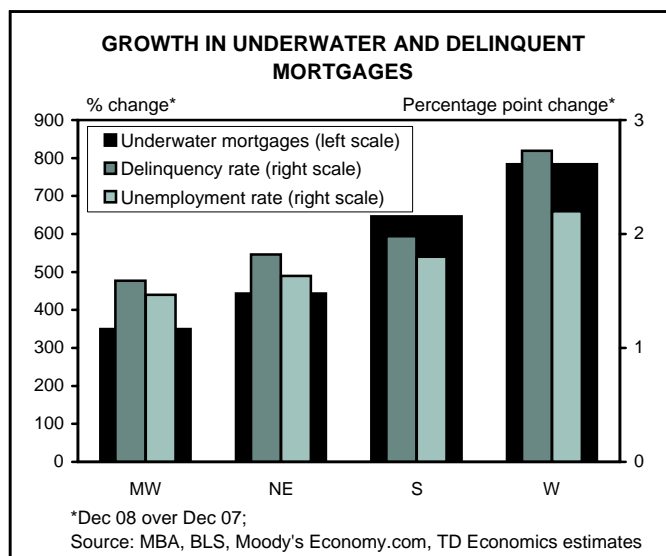
It is unclear which is a bigger concern for driving new foreclosures – how many new mortgages are underwater relative to new workers becoming unemployed, or how long a high level of underwater mortgages and unemployment persist. Certainly the longer poor conditions persist, the more some unemployed homeowners will see their savings depleted and risk becoming delinquent. But, this influence decreases over time so the bigger factor for driving new foreclosures should be newly underwater mortgages and unemployed individuals. With the pace of newly underwater mortgages likely to slow in the West, this does argue for less upward pressure on inventories due to foreclosures, which would be less of a drag on attracting new money into the market.

Supply Risk 2: Economic variables (negative)

The West is in the unfortunate position of having had the highest and fastest rising unemployment rate in the nation over the last year. In the span of one year, the unemployment rate has risen 4 percentage points to 9.2% in February. This certainly raises the risk that a greater share of underwater mortgages could tip into delinquencies in the near-term, and eventually foreclosures. However, the rate of increase in the unemployment rate will likely slow going forward. Construction jobs made up 28% of all job losses in the past year, the greatest share of any region. Since the excesses of building have already been purged from the economy, with housing starts at record lows, it's unlikely that acute job loss pressures from that sector will persist.

Supply risk 3: Supply currently on hand (neutral)

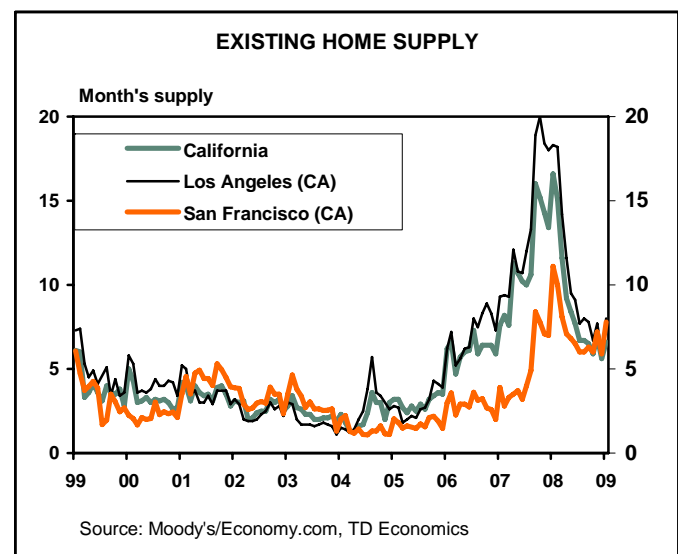
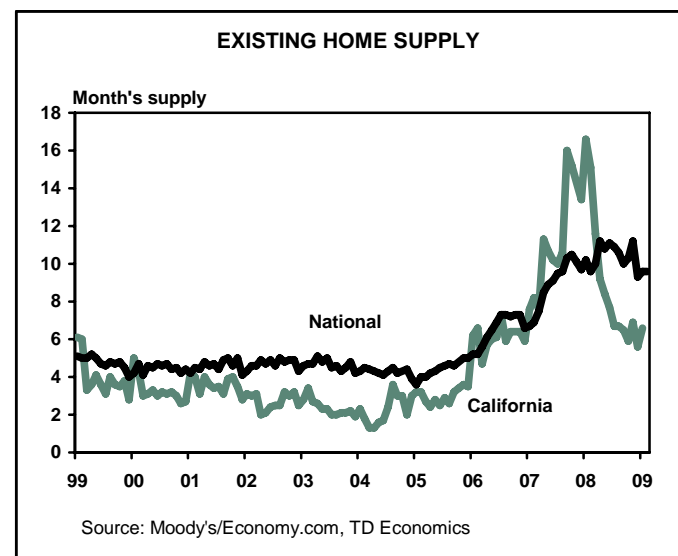
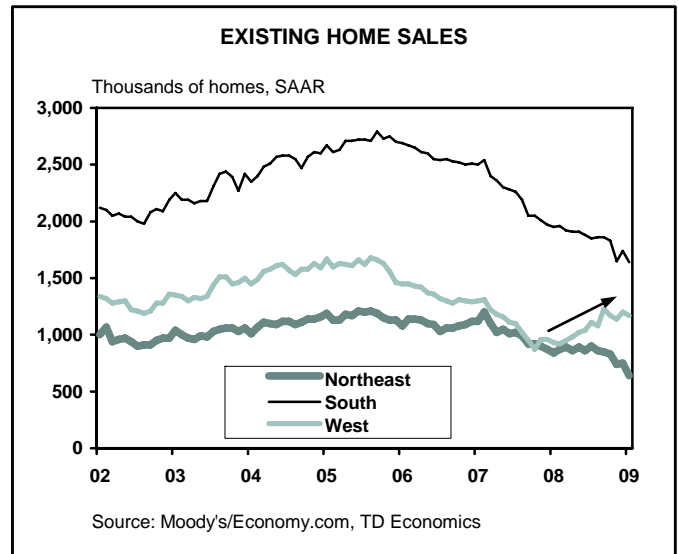
There are several other factors that argue for ongoing improvement in the West. First, looking more broadly at the data, sales of existing homes in the West appeared to



have bottomed in early 2008 and have since made a steady trek higher. Sales are up 30% from year ago levels, while other regions remain deeply in the red. Now, one of the reasons why sales in the West were the first to turn around reflects the fact that it's a region that had a disproportionate amount of foreclosure activity that led to the sharpest price declines in the nation. From peak levels, median existing home prices were down 40% by February of this year, in contrast to 18% in the South, and only 9% in the Northeast. So many of these sales are simply sopping up the massive increase in supply that came from foreclosure activity. However, the good news is that the pace of sales has outstripped that of new supply coming into the market. Specifically in California, existing home inventories have fallen dramatically back to 2006 levels. And, the inventory overhang is below the national levels, so on a relative basis, California's housing market is moving in the right direction towards recovery. Unfortunately, inventories are still high on a historical basis, suggesting one of two things. With supply pressures emanating from foreclosed homes, the rate at which foreclosures are adding to the stock of homes for sale must ebb. Alternatively, there must be continued downward pressure on prices to improve affordability in order to prompt a pick up in demand.

Demand: Incentive to buy (neutral)

Is affordability good enough to tempt large numbers of new buyers? Not yet. Affordability has improved tremendously in the West, but that's not surprising given that home prices have been clawed back to 2003 levels. Specifically for California, the price discounting has been even more dramatic with prices back to 2002 levels. Yet, two of the three tracking measures for affordability – PIR and PRR – suggest the West is still overvalued. Both measures continue to exceed their historical average, but not grossly so in the case of the PIR. Given the still-high level of inventories and the bear housing market, affordability would at least have to return to historical norms and likely lower, in order to entice the necessary demand that would finally tighten up inventory supply and stabilize prices. In addition, breaking these measures down to the MSA level, it appears that Los Angeles and San Francisco remain particularly vulnerable. The third measure, the debt service ratio, has fallen sharply in the West and sits well below the historical average. So on this front, buyers have considerable incentive to jump into the market.



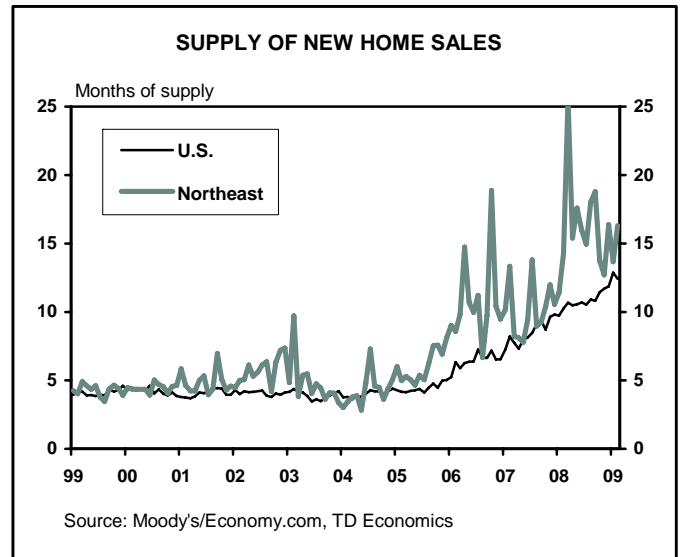
The Northeast is not the least

The Northeast market does not appear to have a large second wave of underwater mortgages waiting in the wings over the next year or so, but the data suggest a substantial decline in prices is waiting in the wings. First, the current new home supply overhang is stark relative to other regions. Second, affordability is poor relative to other regions, suggesting that prices need to fall considerably to pull in more demand. Third, given existing mortgages in the Northeast are less price sensitive, home prices can fall farther and faster than other regions, if needed, in order to increase affordability and bring more buyers into the market without exacerbating foreclosure risks.

Supply risk 1: Underwater mortgages (neutral)

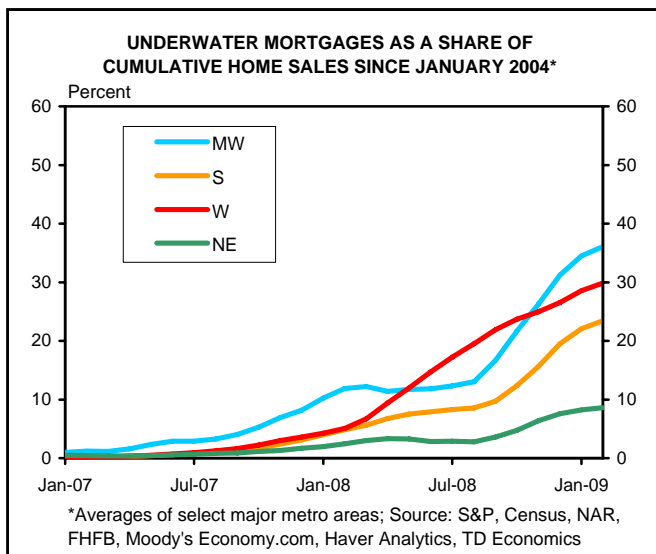
Newly underwater mortgages may grow faster in the Northeast than anywhere else in the U.S. as home prices continue to fall. We estimate that the stock of underwater mortgages would nearly double over the next year if home prices retreat by 10%. While this sounds scary on the surface, the rapid increase is a reflection of the fact that the region has seen much less underwater mortgages to date, so it's rising from a small base. This is largely because the Northeast benefited from more resilient home prices at the start of the housing downturn, with prices not faltering until 6-12 months later than the other regions. The pace of decline in prices has also been less rapid than the other major regions and to cap it all off, relative to the rest of the nation, fewer Northeastern homeowners put downpayments in the high-risk grouping of less than 20%.

The net effect of all this is that less than 10% of newly



sold homes over the last 5 years were at risk of having slipped underwater by February 2009. So, even if the absolute number of underwater mortgages doubles, as a share of newly-sold homes over the last 5 years, it would only amount to 15%, just one-third the national average. The issue of underwater mortgages may increase in importance over the next year, but it does not appear to be overwhelming.

An alternative benchmark we used to judge the vulnerability of a region is to estimate the monthly pace of home price declines that an area can sustain while still keeping the monthly number of newly underwater mortgages below the pace of home sales – in other words more new mortgages are being made each month than old mortgages are slipping underwater. By this metric, existing mortgages in the Northeast appear to be the second-least price sensitive after the West, and therefore more resistant to small changes in home prices driving a larger increase in underwater mortgages. Both the Philadelphia and Boston regions can ensure a manageable increase in underwater mortgages as long as home price declines are no worse than 1.5% each month over the next twelve months. For the subsequent year, home price declines in the Philadelphia and Boston area would have to be more subdued – not exceeding 1% and 0.7% per month, respectively. This would mean Boston and Philadelphia would need to see the pace of home price declines accelerate from their current pace of the last six months and be sustained over the next year or two before a vicious spiral of an unsustainable accumulation of underwater mortgages would materialize. As a result, current homeowners in the Philadel-



phia and Boston areas, and the Northeast in general, seem less susceptible to mortgages slipping underwater than in other areas of the country.

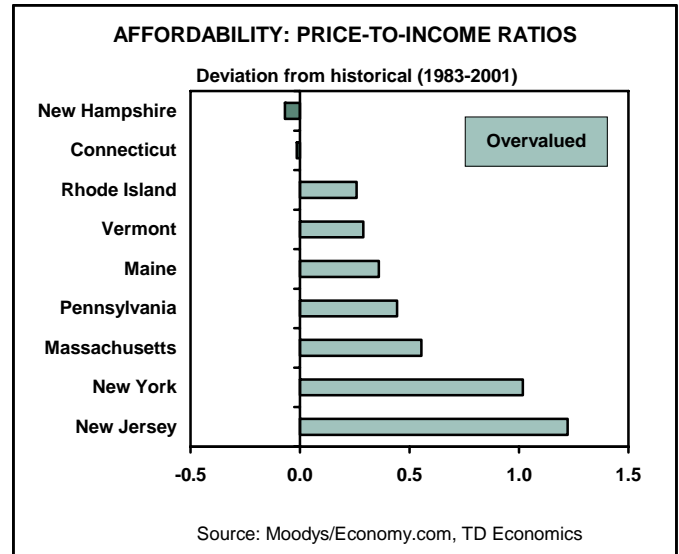
Supply risk 2: Economic variables (neutral)

Although pressures on inventories emanating from foreclosure activity seem limited in the Northeast, the uncertainty and risks may linger longer than elsewhere, as the region's economy is more mature and generally recovers at a more sluggish pace than the nation as a whole. This seems particularly likely given that the economic recession is embodied in a financial crisis and the Northeast has outsized exposure to the financial industry.

On the plus side, thus far in the economic cycle, job losses have occurred at a slower pace than the nation and the Northeast is sustaining a lower unemployment rate.

Supply risk 3: Supply currently on hand (negative)

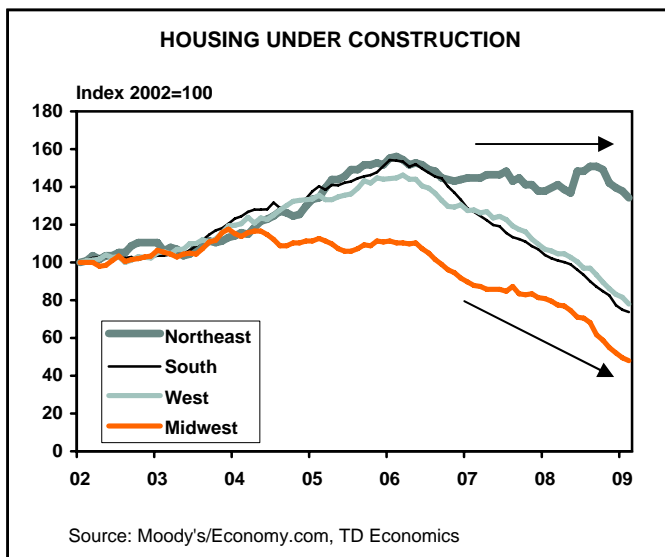
The risk of inventory accumulation from foreclosure activity in the Northeast appears capped and explains why the region has one of the lower levels of inventories of existing homes. However, the region currently suffers from an extremely high level of unsold new homes in the market and there is a danger that too much supply remains in the pipeline. Inventories of unsold new homes in the Northeast were running at 16.3 months of supply in February, four months above the national average. The Northeast is also the only region that is not experiencing a convincing decline in homes under construction. In fact, levels are holding remarkably high and consistent with that seen in



the past two years. A dominant influence here has been the change in the New York City building code for multiple units that took effect in mid-2008, which caused a big push to break ground on new development projects before the new building requirements took effect. Since housing construction in New York City represents one-third of the Northeast market, it's probably safe to say that the supply overload is not representative of the entire region. Nevertheless, too much supply is simply too much supply, and it can have a depressing effect on the broader area. Fortunately for the Northeast, the new home market typically makes up a very small proportion of sales (less than 10%, which is half the national average). Inventory overhang is more problematic within this market if it resides in the resale home market. And in this respect, supply is quite elevated, but the Northeast is comparatively better off relative to other regions such as the South and Midwest.

Demand: Incentive to buy (negative)

So then the question boils down to whether conditions are ripe for a pick up in demand to sop up potential supply? The answer is no. The Northeast market is the only area where the DSR remains above the historical average, so this metric isn't providing a favourable buying incentive, especially when one considers the potential backlog of inventories that still has to be absorbed into the market. Certainly on other measures, such as the PIR and PRR, the Northeast and major cities within are still flagged as an overvalued market, though more so in the states of New York and New Jersey than other areas like Pennsylvania, Maine or Massachusetts.



The South still heading south

Our mortgage risk, economic and demand variables all stack in the negative column for the South. In fact, it is the only one of the four regions to have consensus across the indicators. The risk of a large second wave of underwater mortgages remains great, and affordability has not improved yet to levels that would pull in sufficient demand to head off supply.

Supply risk 1: Underwater mortgages (negative)

While existing mortgage holders in the South in general seem to have done better at avoiding a negative equity position early in 2008, the problem seems to have reached an inflection point in the last three months of that year. We estimate that the level of underwater mortgages doubled from September to December, rising from 10% to 20% of all homes purchased over the last five years, and this ratio was swiftly approaching one-quarter as of February 2009. This is the result of two forces. First, an acceleration of home price declines in many major cities in the region over that period. Second, along with the Midwest, the South mortgage market embedded more high-risk mortgages related to very low down payments. A third of all homes sold by December 2007, were still being conducted with less than a 10% down payment. As a result, the South is still working through their oversized first wave of underwater mortgages. A further 10% decline in prices would potentially increase the stock of underwater mortgages by slightly more than 50% from their February levels, taking the relative measure to one-third of all homes purchased in the last five years at that point being underwater.

Moreover, a number of cities in the South are in a more precarious position when it comes to a tipping point for fueling faster increases in new underwater mortgages. Looking at the major cities for which we have sufficient data, Miami seems best situated, but must still see monthly home price declines over the next 24 months of no more than 1% to keep the pace of newly underwater mortgages below the current pace of total home sales. Dallas, on the other hand, has a sustainable home price decline rate of only 0.7%. With the recent monthly home price declines in the Washington D.C. metro region averaging 2%, D.C. would need to see home price declines limited to no worse than 0.7% over the next 12 months in order to reduce the risk of having more existing mortgages slipping underwater each month than new mortgages are originated. In the

12 months past that, however, home price declines could be slightly worse, at around 1%, assuming the current pace of sales were sustained into 2010. One saving grace for the D.C. region is that it tends to see less job losses in a recession due to the relative stability of government employment. As a result, these homeowners may be less vulnerable to financial distress, which would only be exacerbated by an underwater mortgage, compared to other markets where job losses might be more pronounced. All told, however, our analysis certainly raises the risk that foreclosure activity could increase in the South region over the next 12 months.

Supply Risk 2: Economic variables (negative)

Looking purely at job figures leaves the impression that the labor market in the South has been resilient relative to the U.S., but the data is skewed by the state of Texas which represents almost one-quarter of the job market for the region. Elevated energy prices last year delayed the economic downturn in that state, but this was not the case elsewhere in the region. Excluding Texas, job losses fell at a faster rate in the South (-3.4%) than for the nation as a whole (-3%) in the past year. For just the South Atlantic region, the unemployment rate sat well above the national rate in February with states like Florida already at 9.4%, Georgia at 9.3%, South Carolina at 11%. Being a key catalyst to the housing bust, economic hardship has gripped the region. Looking forward, the region will likely maintain higher unemployment rates than the national economy. Specifically in Florida, a survey conducted by PNC Bank between January 26 and March 4 of small and medium



size business indicated that 71% of business owners plan to cut their capital spending, and just 9% said they plan to hire workers in the next six months, with 20% percent cutting jobs.

Supply risk 3: Supply currently on hand (negative)

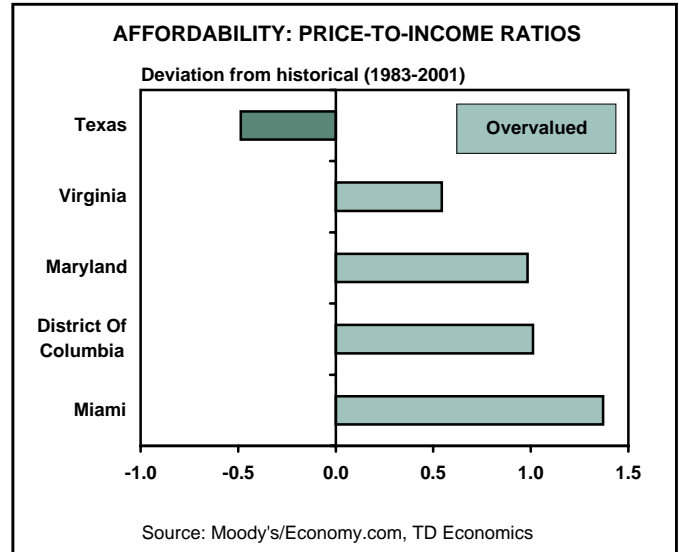
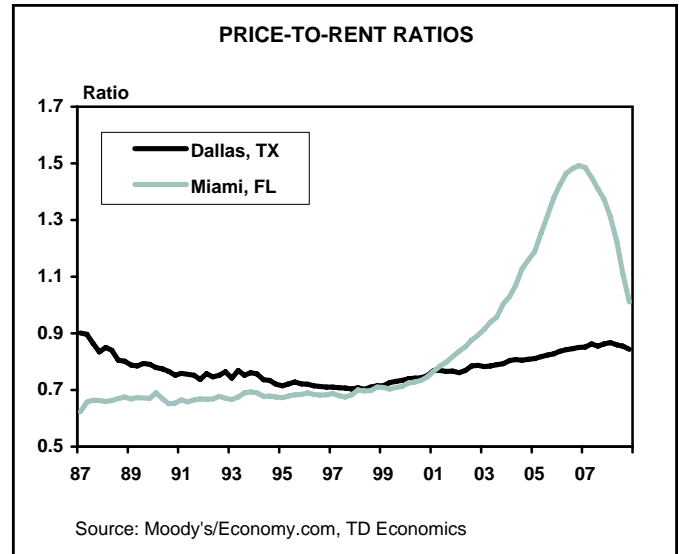
In the Southern region, inventories are in the unenviable position of being the highest in the nation. At the current pace of sales, there is slightly more than a years worth of homes waiting for a buyer. Although the data is not available to compute month's of inventory by state, we do have vacancy rates. Existing home prices fell 35% from the peak to December of last year in Florida, and yet vacancy rates were a record high of just over 17% – the third highest among all 50 states in the United States. Vacancy rates in South Carolina are next in line, coming in fourth highest in the country, while North Carolina is the 12th highest, which speaks to a wider inventory issue than just Florida.

Data compiled by the Florida Association of Realtors and the University of Florida Real Estate Research Center indicate that sales in the state did pick-up in the first quarter, so the vacancy rate probably edged lower, but it would likely have to drop by one-quarter before prices would even begin to stabilize and we're a year or more away from that. An inventory glut remains in Florida and will likely be worked off at a glacial pace, especially since affordability remains poor in the state relative to historical norms. In contrast, in the state of Texas, vacancy rates were dropping throughout 2008 to almost half the level of Florida, which also wasn't too far off its historical low. Supply glut is not an issue yet for this state.

Demand: Incentive to buy (negative)

The demand side of the equation is also giving little indication that this market is at the bottom. Sales continue to deteriorate, vacant housing stock remains extremely elevated and the affordability measures indicate a still-pricey market relative to incomes and rent.

Disaggregating the data further, the PIR for Florida indicates a much more overvalued market than that for the South as a whole. That's because the largest state in the region – Texas – is still considered well-valued by this metric, therefore it skews the entire metric down for the South. The PRR tells the same story for this state. Texas was



late in joining the housing market bust due to specific economic drivers related to elevated energy prices. Amidst all the recent economic turmoil, it's easy to forget that the price of oil was still holding on average above the \$100 per barrel mark in September of last year.

However, looking at a broader swath of the South Atlantic region, it is clear that Florida does not stand alone as an overvalued market relative to affordability. A number of states, such as Maryland, Virginia and the District of Columbia, also have elevated PIR's relative to historical norms.

The Midwest remains depressed

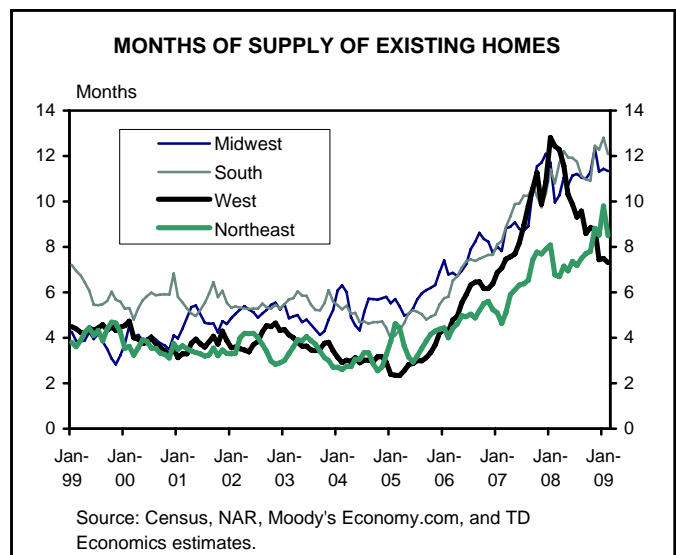
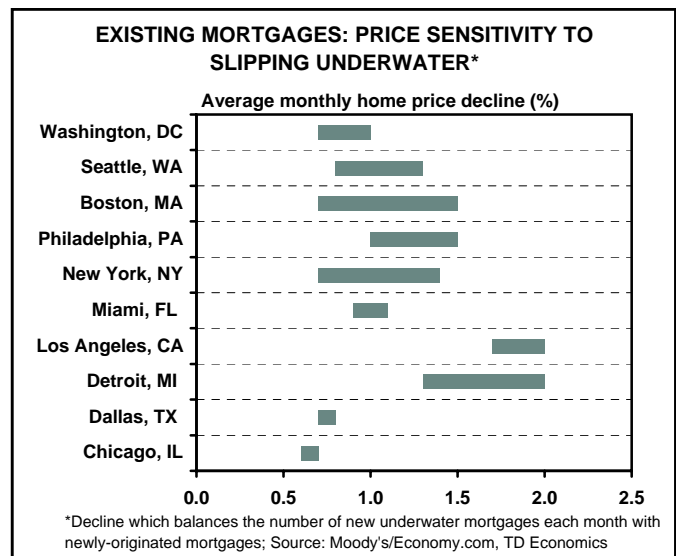
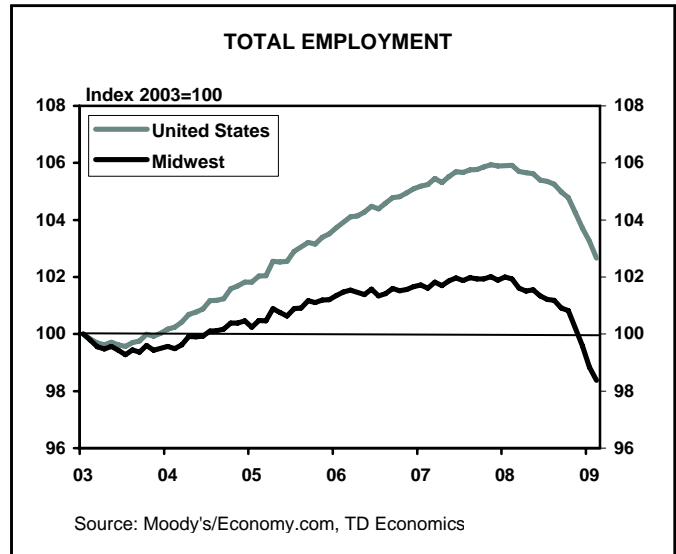
The Midwest had the misfortune of not participating in the housing boom, but is experiencing all of the fallout from the bust. That's because this region has bigger fish to fry than just a housing market crash. States in which the economy is more leveraged to industrial activity, such as Michigan and Illinois, face a number of structural economic changes, which requires little explanation for anyone following the automotive saga of late. In contrast, the economies in states with a heavier agricultural tilt, like Iowa, Idaho, and Kansas, are proving to be more resilient in the face of the recession. In this report, our housing analysis is focused on the former group, due to data availability. The Midwest housing market is caught in the crosswinds of potentially a large second wave of underwater mortgages hitting in the next 12 months, alongside an already over-supplied market. While affordability is among the best in the nation, it will not be the savior of this market.

Supply risk 1: Underwater mortgages (negative)

The Midwest appears to be one of the worst in many regards when it comes to pressures coming from underwater mortgages. As of February, almost two out of five mortgages on homes sold over the last five years may have slipped underwater. This has much less to do with the pace of the housing boom or any abnormal declines in prices. Rather, the region saw a large number of mortgages made with less than 10% down late in the housing cycle, exceeding one third of new mortgages made in the second half of 2007 in several major cities such as Cleveland, Detroit, and St. Louis.

Supply Risk 2: Economic variables (negative)

This seems to have been a reflection of the weak economic environment, where the regional labor market grew by only 2% total from 2003 to 2008 and has since lost almost 4% of the workforce from that low peak. Due to poor economic fundamentals, the loss in home equity from falling home prices has been compounded by the largest decline in the pace of home sales in the country, with the pace of sales in December 2008 sitting 20% below its pace one year prior. As a result of the low pace of sales, cities like Chicago would see newly underwater mortgages exceed the low pace of newly originated mortgages if monthly home price declines are more severe than 0.5%. As this



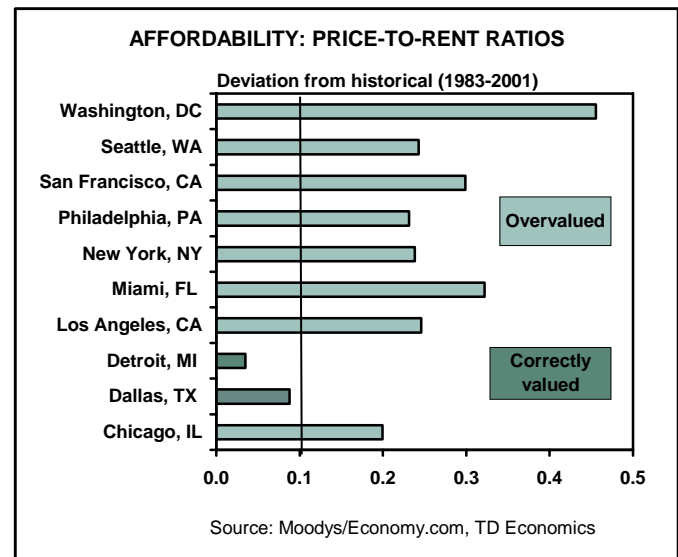
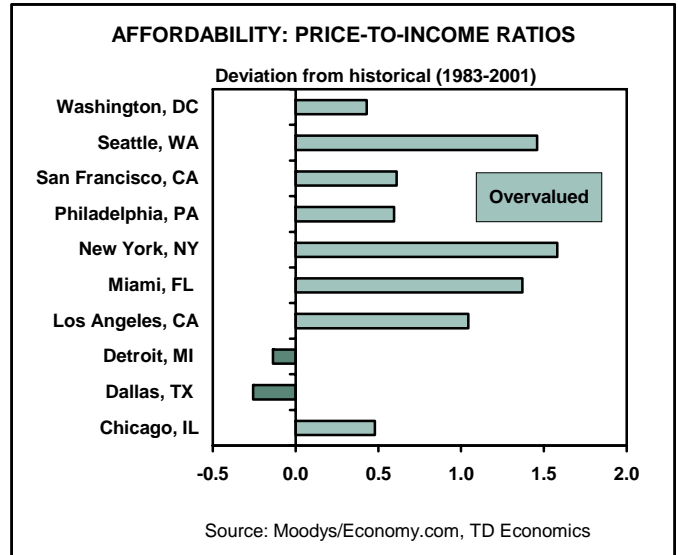
would be just one-third of the average pace of home price declines over the previous month, the risk factors for the region seem strongly biased towards further deteriorations in the level of underwater mortgages, and, given the poor labor market, further deteriorations in the level of foreclosures and inventories.

Supply risk 3: Supply currently on hand (negative)

The Midwest is facing a highly oversupplied market both for new and existing homes. In fact, in the case of the latter, supply exceeds the national average. In Ohio, vacancy rates are about double the long term average, while Michigan faces record vacancy rates. Demand in the Midwest is in an extraordinarily weak condition. Sales have been in a freefall for several years, with the peak in activity having occurred way back in the summer of 2005. In February of this year, sales were still bouncing along the bottom, showing no conviction to head north. The significant risk of more underwater mortgages coming onto the market coupled with the fact that demand has not awakened from its slumber, suggests this housing market has longer term structural issues on its hands and could very well be the last to recover.

Demand: Incentive to buy (positive)

Affordability measures don't provide much assistance in reading the turn in this market via new demand, since all metrics scream 'affordable'. The bigger issue is when the economy will bottom, since this region is experiencing a structural change in its economy, rather than a structural change in the housing market. In other words, it's not about how affordable, but who can afford.



Policy Priorities and Concluding Comments

Outside of the factors cited in this paper, there has also been further assistance and incentives provided to existing and potential homebuyers through regulatory changes and tax incentives. These will help in stemming the tide spilling from at-risk underwater mortgages to actual foreclosures.

President Obama's Home Affordable Refinancing Program helps current homeowners with a solid payment history and, at most, are 5% underwater in their mortgage, to refinance through June 2010. For those already delinquent or at risk of default, the Home Affordable Modification Program provides borrowers with the ability, though December 2012, to refinance their mortgage with lower interest rates, with subsidies and incentives paid to borrowers and lenders from the government for modifying loans and staying current. If interest rate changes alone are not enough, some combination of extending the loan term up to 40 years, reducing the principal, or shifting part of the principal to a zero-interest lump-sum payment at the end of the mortgage can also be used.

These programs all help to stem the tide of rising inventories of foreclosed homes, though given our findings that 12-16 million mortgages may be underwater within one year if prices decline a further 10%, the administration's assumption that these two plans will help 7-9 million people could turn out to be on the low side. Since the biggest concern is the interplay between having an underwater mortgage and then losing your job, a government-funded income replacement scheme could also help stem the tide of new foreclosures. If an existing homeowner with an underwater mortgage loses their job, but their mortgage was otherwise affordable, a plan to provide low-interest income replacement loans to these individuals until they find a new job could be very useful in avoiding a vicious cycle between job losses, mortgage foreclosures, and further home price declines sending more borrowers underwater.

Other unintended consequences have also been mitigated. For example, existing homebuyers in foreclosure or who must sell their home but are in a position of negative equity, are helped by the Mortgage Forgiveness Debt Relief Act passed in 2007 (and as later amended). This ensures that, through the end of 2012, up to \$2 million in loan forgiveness on a primary residence will not be included as income for tax purposes.

Obama's home buyer credit

Any one who buys a home between January 1, 2009 and November 30, 2009 and meets the following conditions:

- Must not have owned a house in the past 3 years. This is the "first time" homeowner condition.
- Income must be less than \$75,000 for singles or \$150,000 for married couples. Singles who make up to \$95k and couples who make up to \$170k can get a partial credit.
- Stay in the house for 3 years otherwise the credit has to be paid back.

To address the demand side of the equation, the tax incentives for first time homebuyers (see box) provide some additional new demand, but arguably many would-be, first-time homebuyers already entered the market in the past few years and may no longer be eligible. One possibility is to open this plan up to individuals who have lost their home to foreclosure in the previous few years, but who are currently financially able to afford a new mortgage with an appropriate downpayment and mortgage terms. This would be one way of creating some further new demand and targeting those most affected by the housing crash. To the extent this plan does lead to home sales that would not have otherwise occurred, or limits the downward pressure on home prices, it is also a subsidy from the government to the states by creating new property tax revenue.

While the monetary amount of this subsidy may be limited, it does highlight what is ultimately needed to resolve this crisis – less supply of homes sitting vacant and more demand that stabilizes home prices. The U.S. housing market is currently ripped in two. While aggregate affordability indicators suggest further progress is needed, there is better affordability for foreclosed homes given their low prices. But, once this inventory is worked off, there is little to suggest there will be much upward momentum in the mainstream U.S. housing market for years to come.

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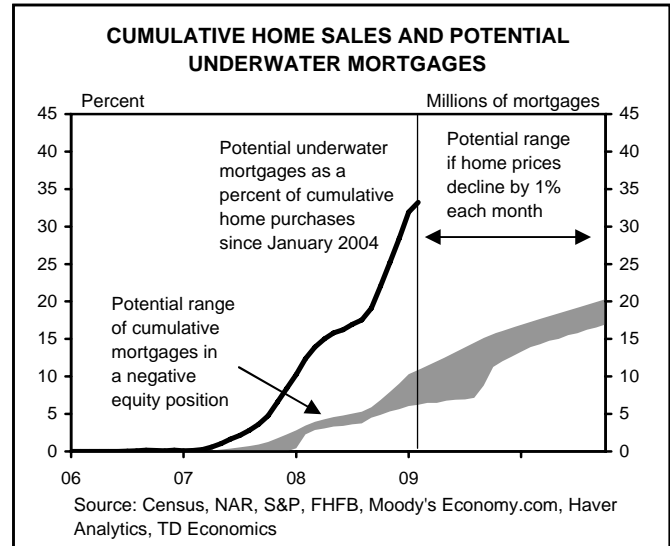
Annex 1: Estimating underwater mortgages

Underwater mortgages pose potentially the largest ongoing risk to the U.S. housing market. A mortgage is said to be underwater when the value of a homeowner's mortgage is larger than the value of the house itself – a loan-to-value (LTV) ratio greater than 100%. When home prices are rising and normal payments are made on a mortgage, this is not an issue as the value of the home is rising over time while the mortgage is being paid off. However, in the current environment, falling home prices reduce homeowners' equity each month and push more and more mortgages into a negative equity position.

Exacerbating the problem, during the heydays of the current housing cycle, more than 20% of new mortgages had LTV ratios of 90%. So it was within quick order that LTV's crossed the 100% threshold for these homeowners as prices tumbled 28% from the peak. Even those with LTV's of 80% were impacted, if homes were bought near the peak of the market. In contrast, during the early-1990s period, households in the high-risk group with LTV's of 90% represented less than 10% of new mortgages, so the peak-to-trough price decline of around 9% was not sufficient to push a large number of mortgages underwater. In fact, we estimate that at its worst in 1991, about 94,000 mortgages in total may have gone underwater, equivalent to about one-third of new mortgages made in a given month. In contrast, combining national data on home prices, home sales, and LTV ratios, we estimate that by February 2009, 6.2-10.8 million U.S. mortgages may have slipped underwater, the equivalent of one-fifth to one-third of all new mortgages taken out over the last five years.

There is an ebb and flow to the number of mortgages slipping into a negative equity position from month to month. For one, the flow of new underwater mortgages is less driven by peak-to-trough declines in home prices, and more so by how fast those declines come. Homeowners who remain current on their mortgage payments are adding slowly to their home equity. Typically, a homeowner will accumulate about 1.5%-2.0% of new equity in their home each year during the first five years of a new mortgage. As a result, a fall in home prices by 10% in one year risks driving anyone who bought a home in that period with less than 10% down underwater, whereas a 2% decline each year for five years would leave home equity levels flat.

Another reason for the variability in newly underwater mortgages is the change in the flow of mortgage



originations. Home sales peaked in late 2004 and into 2005, so the cumulative price declines since that period have the potential to pull more mortgages underwater than any other period. However, financing decisions made by homeowners were changing over time, as well. During the 2004-2005 period, homeowners were showing a greater tendency to put down at least 20% as a downpayment on their home. In contrast, tracking mortgages thereafter to mid-2007, it becomes evident that a greater and greater share of homeowners were buying homes with downpayments that were in a higher risk category of less than 20%. (see chart on page 2) This results in a two-wave effect for pushing mortgages underwater.

We have largely already seen the first wave accounted for by those who put less than 20% down. The second wave will come if home prices decline a further 6-10%, as we expect them to. At that point, there would be another surge in underwater mortgages, washing over many of those homeowners who were in the 2004-2005 period with 20% downpayments.

We estimate that since September, the number of mortgages slipping underwater each month was greater than the number of newly-originated mortgages, and may have even been two to three times greater. It seems likely we are in a period now where as many mortgages are slipping underwater as are being originated each month on newly-purchased homes, but we are likely to see an increasing pace of newly underwater mortgages by the end of the year if home price declines continue.

Just because a mortgage moves into a negative equity position doesn't mean it will become delinquent, so the next

crucial uncertainty is what exactly homeowners do when they find they owe more on their mortgage than the property is worth. The answer in most cases is probably absolutely nothing. There is usually no discernable change for a homeowner after their mortgage moves into a negative equity position. They will likely be unable to refinance their mortgage, but the existing mortgage contract and terms are unaffected. So, as long as a borrower continues to have the ability to make their monthly mortgage payment, nothing needs to change. The uncertainties revolve around the extent to which homeowners view their house as an investment, rather than a home, and the extent to which the ability to make their monthly mortgage payment deteriorates.

A homeowner's decision to continue to finance an underwater mortgage or walk away will depend on:

1. *Whether they view their home largely as an investment.* In this case, if the principal remaining on a mortgage exceeds the home's value, the negative equity position and associated carrying costs is obviously not offering a profitable rate of return on that investment. The owner may look for a way to walk away from their existing mortgage. Even if home price growth turns positive, the investor may still need to wait some time before the price gains erase their negative equity position. In contrast, if they were able to walk away from their existing house and buy a new one, they would not be starting in the hole from an equity position.
2. *Whether they view their home largely as a longer term place to live.* When a homeowner experiences deterioration in their ability to repay the existing mortgage, perhaps due to a job loss as a result of the recession, refinancing the home typically becomes an important option that allows the owner to use that mortgage equity to bridge the gap in their loss of income. If that equity is not available, a homeowner may have no choice but to default on their mortgage. So in the 'investor' case, the lack of equity creates an incentive to leave, while in this case, it creates an increased burden that results from income loss.
3. *Whether the legal structure makes it easy to walk away from a mortgage obligation with little repercussions.* While the laws surrounding foreclosure proceedings in each state may feed into these incentives by making it easier or harder for a borrower to leave their mortgage, we found no evidence to suggest that legal differences across states have exacerbated the stresses on foreclosures during this recession (see Annex 2).

Estimates show that investors in category 1 above represented about 9-10% of outstanding mortgages in the U.S. They not only made up a relatively small portion of mortgages, but it is likely that most investors divested from properties in the earlier states in the housing bust as their income and capital gain prospects eroded. Any remaining investors would make up an even smaller share of the mortgage pie. That brings us to the second group of individuals, who value their home as a place to live. This is the group that presents the greatest risk going forward as a driver of new delinquencies and foreclosures. By our estimates, the economy will continue to deteriorate until the final quarter of this year. Job losses are expected to mount to 8.3 million by early 2010, while the unemployment rate is expected to push slightly above 10% and hold at that level through 2011. So as we look ahead, it is the interrelationship between underwater mortgages and unemployment which concerns us the most.

The recession feedback

Looking at the cross-section of statewide differences over the last two years (December 2006 to December 2008), we estimate that there have been two important factors driving mortgage delinquencies. First, a 10% increase in the unemployment rate (i.e. from 6.0% to 6.6%) led to a 5% increase in the delinquency rate. Second, a 10% decline in home prices led to a 17.5% increase in the delinquency rate. Among the two influences, the first is well known and established. Even intuitively it makes sense that delinquencies are driven by changes in a homeowner's ability to pay, which means the unemployment rate is a key input. And, given that changes in the unemployment rate tend to lag the economic recovery, this implies that mortgage delinquencies will continue to rise well after the economy has started to recover.

In contrast, the impact of home prices in driving delinquencies falls into the category of being a unique and new feature of this cycle. We have not seen this influence in past recessions. Home prices did not decline during the 2001 recession and the 9% peak-to-trough decline during the 1991 recession had no discernible impact on delinquencies. This raises a concern that the dynamics are different this time, and if home price declines are causing delinquencies, and delinquencies lead to further foreclosures, rising inventories of unsold homes, and further home price declines, the vicious cycle could feed on itself. The problem is that there are a number of unprecedented features of the current housing cycle so it is difficult to say whether it is home prices or some other exceptional aspect that is driving price declines and itself is the actual causal factor.

It is not even clear yet whether home prices are driving

delinquencies or delinquencies are driving home prices. The previous discussion on underwater mortgages suggests it may not be falling home prices themselves, but the volume of mortgages driven underwater, and the share of these that then become delinquent when unemployment rates increase and make more homeowners unable to make mortgage payments, which is the true issue. If the flow of new mortgages slipping into a negative equity position is the driving factor, our expectation for another wave of mortgages slipping underwater certainly creates a risk that we will see a further exaggerated increase of delinquencies as the unemployment rate continues to rise through 2010. Unfortunately, an ongoing issue in this financial crisis is the intermix of unprecedented risks and ongoing uncertainties.

Annex 2: Do State Foreclosure Laws Impact Mortgage Delinquency Rates?

The notion that any U.S. homeowner can mail their keys back to the bank at any time and walk away from their mortgage has become fairly prevalent, earning the term “jingle mail.” In fact, there is a fair bit of diversity in foreclosure laws from state to state. The differences generally come down to two fundamental issues. Does a foreclosure require the involvement of the courts and who bears the loss if the mortgage value is greater than the value of the home, the bank or the borrower? While this still oversimplifies the differences, it does provide a useful framework for categorizing each state. There are nine states such as Massachusetts where the laws tend to be borrower-friendly, where the bank typically has little recourse to recoup any negative equity in the home. In a further 13 states, the borrower may be required to compensate the bank for negative equity, but every foreclosure requires going to court, which can be expensive for the lender. In a further 20 states and the District of Columbia, the laws are more favorable to the lender. In these cases, foreclosures may involve the courts, but they can also be contract-based and in either case, the bank may be able to recoup negative equity losses from the borrower. There are then a further eight states, six of which are in the west, where foreclosures may involve courts or be contract-based, but only the courts can make judgments regarding negative equity.

We would expect to find that states which make it easier for borrowers to walk away from a mortgage will, on average, tend to have higher mortgage delinquency rates. In fact, for any given unemployment rate, those states that have borrower-friendly foreclosure laws have tended to have mortgage delinquency rates 1-3 percentage points higher. However, the important question in the current environment is whether these same legal differences lead to different dynamics as unemployment rates rise and more mortgages fall into a negative equity position. Does having a legal environment favorable to borrowers imply that more borrowers than in other states will become delinquent on their mortgage for the same increase in the unemployment rate?

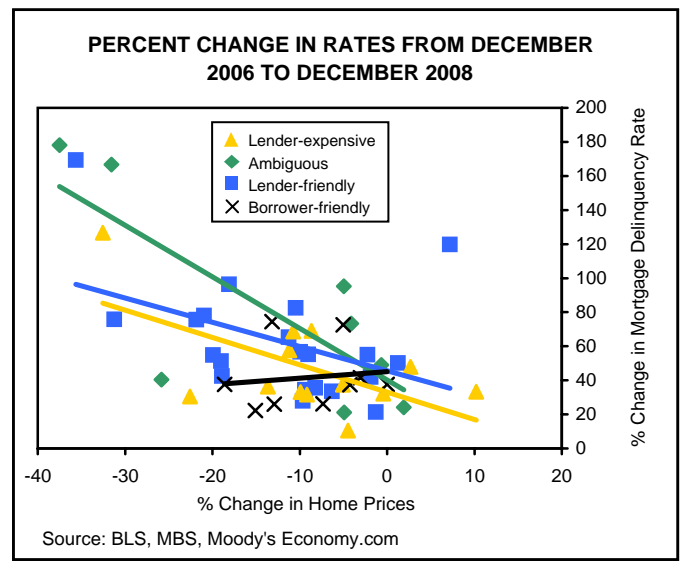
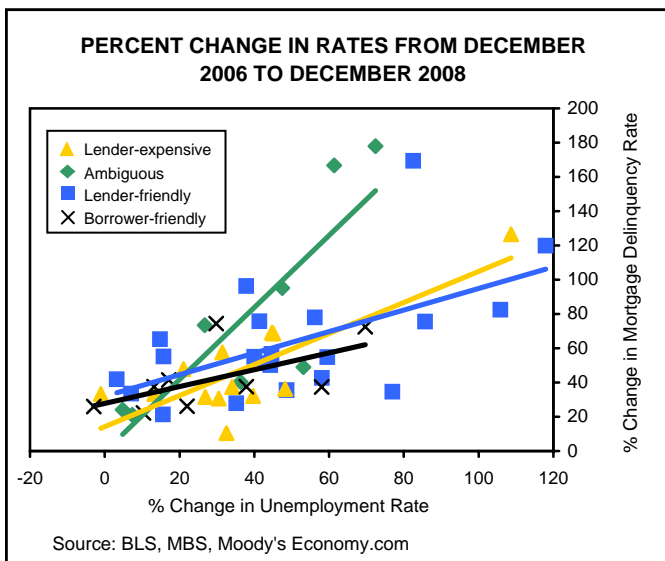
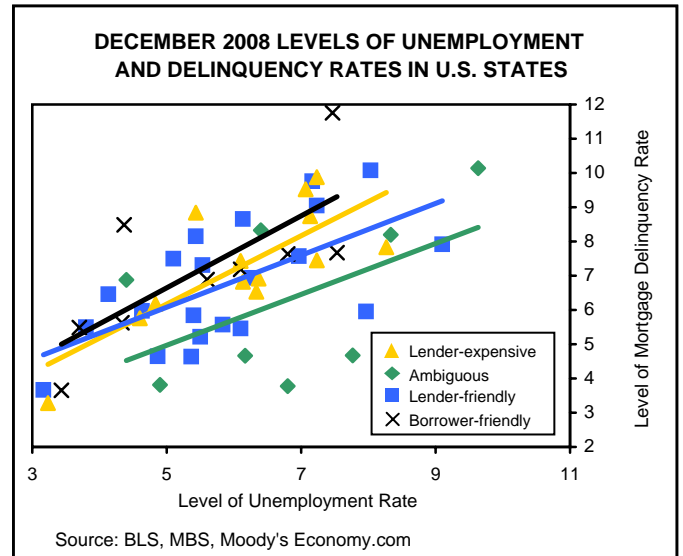
On this crucial question, the evidence is limited but suggests this is not the case. Looking at the relationship between the change in the unemployment rate over the last

two years and the change in the mortgage delinquency rate, those states which had lower delinquency rates to start with relative to other states (such as those with ambiguous laws) have seen the strongest push from rising unemployment rates to rising delinquencies. Meanwhile, those states where delinquency rates were already high (the borrower-friendly states) have seen the least increase in the delinquency rate relative to changes in unemployment. The dynamics here have so far been one of convergence, rather than aggravation.

NATIONWIDE DIFFERENCES IN FORECLOSURE LAWS			
WEST	NORTHEAST	SOUTH	MIDWEST
BORROWER-FRIENDLY			
<i>Foreclosure may or may not require courts, but bank can never recoup negative equity</i>			
	Massachusetts	Delaware Mississippi North Carolina West Virginia	Iowa Missouri Nebraska South Dakota
LENDER-EXPENSIVE			
<i>All foreclosures require a court, but bank can recoup negative equity through the court</i>			
New Mexico	Connecticut Maine New Jersey Pennsylvania	Florida Kentucky Louisiana South Carolina	Indiana Kansas North Dakota Ohio
LENDER-FRIENDLY			
<i>Foreclosure may or may not require courts, and in either case bank can recoup negative equity</i>			
Colorado Hawaii Idaho Nevada Utah Wyoming	New Hampshire New York Rhode Island Vermont	Alabama Arkansas District of Columbia Georgia Maryland Tennessee Texas Virginia	Illinois Minnesota Wisconsin
AMBIGUOUS			
<i>Foreclosures may or may not require courts, but courts are needed to recoup negative equity</i>			
Alaska Arizona California Montana Oregon Washington		Oklahoma	Michigan

The differing relationship between home prices and delinquencies, too, supports the notion that the legal environment plays only a negligible role. Outside of the borrower-friendly states, the larger the decline in prices over the last two years, the larger the increase in the delinquency rate. But in borrower-friendly states where you might expect borrowers to walk away sooner from a negative equity position, there has been no relationship between these declines and increasing delinquencies (though to be fair, these states on average have seen less home price declines). As a final check, after accounting for the fundamental factors described on page 15, there is no evidence that the differing legal environments had any influence on increasing any state's mortgage delinquency rate over the last two years.

(Special thanks to research analyst, Francis Fong, for helping to research state foreclosure laws.)



Annex 3: Affordability measures

The various affordability indices are sending mixed messages at the national level, suggesting there isn't sufficient impetus to drive demand meaningfully higher in order to work off inventories in quick order. This leads us to believe that prices need to fall further to create a greater incentive to buy into a new mortgage.

1. Price-to-income ratio (PIR)...neutral

Historically, a typical American household spends 2-to-3 times their annual income to purchase a detached home. As this measure dips below its historical level, buyers get more bang for their hard-earned buck. On a national basis, our estimates show that this ratio sat at 2.8 at the end of 2008, which is the lowest level since 2001 but still slightly above its historical average of 2.6 – quite remarkable given the steep declines experienced in home prices. Looking ahead, it may have a more difficult time moving below historical norms in short order. That's because household incomes started to slide backward in late 2008, which we anticipate will extend through 2009. Therefore, home prices will have to back peddle at an even faster rate in order to push the PIR to more attractive levels.

Although first quarter data is not yet available, in all probability the PIR moved closer to its historical average as preliminary data suggest incomes declined less than home prices in the quarter. However, in order to entice a sufficient number of buyers into the market to draw down inventories, this ratio likely has to dip below the historical average.

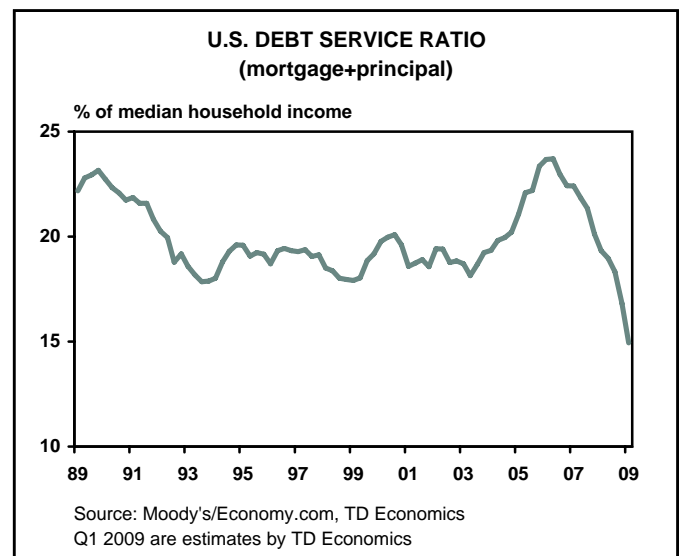
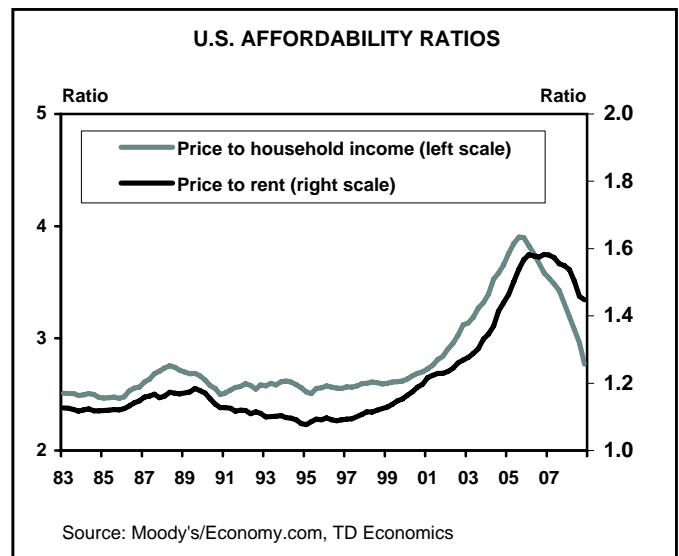
2. Debt service ratio (DSR)...positive

This measure captures the carrying cost of a mortgage (monthly principal payments + interest costs) relative to the monthly median family income. Historically, Americans spend about 20% of their pre-tax income on servicing their mortgages. Our estimates for the first quarter suggest this ratio has dipped to an attractive 15%, the lowest level on record (1981) as the price of a home tumbled further in the New Year and mortgage rates reached record lows. This measure is screaming "cheap, cheap, cheap!"

3. Price-to-rent ratio (PRR)...negative

The price-to-rent ratio can indicate the desirability of owning versus renting a home. Looking at rent is an intuitive way to evaluate the fundamental value of any prop-

erty. The PRR links the cost of ownership with the cost of rental, an ideal relationship since possession of a property can be obtained by either method. Prior to the housing boom (1983-2001), the Case/Shiller PRR averaged just 1.13. It pushed as high as 1.58 during the housing heydays, but since tumbled back to 1.45 by the end of 2008. Still, the PRR remains well above its historical average suggesting that prices need to tumble further in order to restore the historical relationship and pull buyers into the ownership market.



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