

## **The crisis of credit visualized**

What is the credit crisis? It is a worldwide financial fiasco, involving terms you probably heard like, Sub-prime mortgages, collateralized debt obligations, frozen credit markets and credit default swaps.

Who is affected? EVERYONE.

How did it happen? Here's how. The crisis of credit brings two groups of people together, home owners and investors. Home owners represent their mortgages and investors represent their money.

These mortgages represent houses, and these money represent large institutions, like pension funds, insurance companies, sovereign funds, mutual funds etc.

These groups are brought together through the financial system, a bunch of banks and brokers commonly known as Wall Street. Although it might not seem like it, these banks on Wall Street are closely connected to these houses on Main Street. To understand how let's start at the beginning. Years ago the investors were sitting on their pile of money, looking for a

good investment to turn into more money. Traditionally they go to the US Federal Reserve, where they buy treasury bills believe to be the safest investment. But in the wake of the dot.com bust and September 11th, Federal Reserve chairman Alan Greenspan lowers interests rates to only 1% to keep the economy strong. One percent is a very low return on investment, so the investors say no thanks. On the flip side, this means banks on Wall Street can borrow from the Fed for only 1%, add to those general surpluses from Japan, China and Middle East, and there is an abundance of cheap credit. This makes borrowing money easy for banks and causes them to go crazy with LEVERAGE.

LEVERAGE is borrowing money to amplify the outcome of a deal. Here is how it works: in a normal deal, someone with 10 thousand dollars buys a box for 10,000 dollars, he then sells it to someone else for 11,000 dollars, for a 1000 dollars profit, a good deal. But using leverage, someone with 10,000 dollar would go borrow 990,000 more dollars, giving him one million dollars in hand, and then he goes and buys 100 boxes with his one million dollars, and sells them to someone else for 1100,000 dollars. Then he pays back his 990,000 plus 10,000 in interest, and after his initial 10,000, he is left with 90,000 dollar profit, versus the other guys 1000. Leverage turns good deals into great deals; this is a major way banks make their money. So Wall Street takes out a ton of

credit, makes great deals and grows tremendously rich, and then pays it back. The investors see this and want a piece of action, and this gives Wall Street an idea, they can connect the investors to the home owners through mortgages. Here is how it works: a family wants a house, so they save for a down payment and contact a mortgage broker, mortgage broker connects the family to a lender, who gives them a mortgage. The broker makes a nice commission; the family buys a house and becomes home owners. This is great for them because housing prices have been rising practically forever. Everything works out nicely.

One day, the lender gets a call from an investment banker, who wants to buy the mortgage. The lender sells it to him for a very nice fee; the investment banker then borrows millions of dollars and buys thousands more mortgages, and puts them into a nice little box. This means that every month he gets the payments from the home owners of all the mortgages in the box, and then he sets his banker wizards on it to work their financial magic, which is basically cutting it into three slices: safe, okay and risky. They pack the slices back up in the box and call it a Collateralized Debt Obligation, or CDO.

A CDO works like three cascading trays. As money comes in, the top tray fills first, then spills over into the middle, and whatever is left into the

bottom. The money comes from home owners paying off their mortgages. If some owners don't pay and default on their mortgage, less money comes in and the bottom tray may not get filled, this makes the bottom tray riskier and the top tray safer to compensate for the higher risk. The bottom tray receives a higher rate of return, while the top receives a lower but still nice return. To make the top even safer, the banks will ensure it for a small fee called a Credit Default Swap. The banks do all of this work so that credit rating agencies will stamp the top slice as a safe, triple A rated investment, the highest safest rating there is. The okay slice is triple B pretty good, and they don't bother to rate the risky slice. Because of the triple A rating, the investment banker can sell the safe slice to the investors who only want safe investments. He sells the okay slice to other bankers, and the risky slices to hedge funds and other risk takers. The investment banker makes millions, he then repays his loans.

Finally, the investors have found a good investment for their money, much better than the 1% treasury bills, they are so pleased, and they want more CDO slices. So the investment banker calls up the lender, wanting more mortgages. The lender calls up the broker for more home owners, but the broker can't find anyone, everyone that qualifies for a mortgage already has one. But they have an idea: when home owners default on their mortgage, the lender gets the house and house are always increasing

in value, since they're covered if the home owners default. Lender can start adding risk to new mortgages, not requiring down payments, no proof of income, no documents at all. And that's exactly what they did. So, instead of lending to responsible home owners called Prime Mortgages, they started to get some that were... well, less responsible. These are Sub-Prime Mortgages, this is the turning point. So, just like always the mortgage broker connects the family with a lender and a mortgage, making his commission, the family buys a big house. The lender sells the mortgage to the investment banker, who turns it into a CDO and sells slices to the investors and others, this actually works out nicely for everyone and makes them all rich! No one was worried because as soon they sold the mortgage to the next guy. It was his problem, if the home owners were to default, they didn't care. They were selling out their risk to the next guy making millions, like playing hot-potato with a time bomb. Not surprisingly, the home owners default on their mortgage, which at this moment is owned by the banker. This means he forecloses, and one of his monthly payments turns into a house no big deal, he puts it up for sell, but more and more of his monthly payments turn into houses. Now there are so many houses for sell on the market, creating more supply than there is demand, and housing prices are not rising any more. In fact, they plummet. This creates an interesting problem for the home owners still paying their mortgages. As all the houses in the neighborhood go up

for sale, the value of their house goes down, and they start to wonder why they are paying back their 3000,000 dollars mortgage, when the house is now worth only 90,000 dollars. They decide that it does not make sense to continue paying, even though they can afford to, and they walk away from their house, default rates sweep the country and prices plummet. Now the investment banker is basically holding a box full of worthless houses. He calls up his buddy the investor to sell his Cobnut the investor isn't stupid and says "no, thanks", he knows that the stream of money isn't even a dribble any more. The banker tries to sell to everyone, but nobody wants to buy his bomb. He is freaking out because he borrowed million, sometimes billions of dollars to buy this bomb and he can't pay it back. Whatever he tries, he can't get rid of it. But he is not the only one; the investors have already bought thousands of these bombs. The lender calls up to try and sell his mortgage, but the banker won't buy it, and the broker is out of work. The whole financial system is frozen and things get dark. Everybody starts going bankrupt, but that is not all. The investor calls up the home owner and tells him that his investments are worthless, and you can begin to see how the crisis flows in a cycle

Welcome to the crisis of credit.

## 十分钟搞懂“次贷危机”

次贷危机是什么？是一次全球性的金融溃败。意味着这些你听过的名词：次级贷款、债务抵押债券、信贷市场冻结以及信用违约掉期。

谁会受到影响？所有人。

这是怎样发生的？是这样的：次贷危机拉拢了两群人——房主和投资者。房主就意味着房贷，投资者意味着资金，房贷就等于房子，资金则等同于大机构，比如养老金基金，保险公司，主权基金，共同基金等等。这些机构通过金融系统联系在一起，也就是一帮银行家和经纪人，被通称为华尔街。与看上去不同的是，华尔街的银行紧密地关联着民生街（main street）的房子。

现在从头开始讲事情的起因：很多年前，投资者们坐在钱堆上，寻找好的投资机会来赚更多的钱。习惯上，他们会去找美国联邦储备委员会，购买短期国债，这被认为是最保险的投资。但是，由于互联网泡沫破灭和 911 事件，美联储主席格林斯潘将利率降低到 1 个百分点来维持经济增长。投资者说，1 个百分点的回报率太低了，不用，谢了。但从另一个角度讲，这意味着银行能够以 1% 的利率从美联储借款。再加上贸易顺差从日本，中国和中东不断涌入，所以有大量的低息贷款使银行借贷轻而易举，于是他们疯狂地使用“杠杆”。

“杠杆”是用借贷来扩大交易收益的手段，它是这样操作的：某人的一笔普通交易，用自己的1万美元买了1个箱子，然后以1万1千美元卖给其他人，净赚1千美元，这桩买卖还不错。但如果用杠杆操作，一个有1万本金的人，会去再借99万美元，现在他手里有了100万美元——可以买100个箱子。用掉那100万美元以后，再以110万卖给其他人，还掉99万贷款本金和1万利息，除开最初的1万，他净赚9万美元！而另一个人只能赚1千美元。杠杆能把不错的买卖变成不凡的交易，银行也就是这么赚钱的。因此，华尔街借入大量的信贷，做了许多大生意，赚得盆满钵满。最后还掉本金，投资者们看到以后也想分一杯羹。于是华尔街就想到了，他们可以通过利用房贷拉拢投资者和房主。是这样的：有家人想买房子，他们要存足够的首付和房贷经纪人联系。这家人通过房贷经纪人找到房贷公司，房贷公司给他们房贷，经纪人拿到佣金，这家人买到房子，成为房主。这对大家都很好，因为房价事实上永远在上涨，一切都太完美了。有一天，房贷公司接到投资银行的电话，他想买下房贷，房贷公司用一个不错的价格卖给他。投行的银行家借到数以万计的资金，然后买了成千上万的房贷放到一个漂亮的小盒子里。于是乎，每个月，他就可以得到盒子里房主还的房贷。然后他召唤银行巫师施展金融魔法，把房贷分成三部分：安全，还行，有风险。分别放到盒子里，取个名字叫“债务抵押债券”，简称CDO。CDO像三个小瀑布一样工作，当资金回笼的时候，最上面的盒子先装满，再流到中间盒子，剩下的装到最底

层。资金来源于房主偿还的房贷，如果有人欠贷不还的话，那回笼的资金就少了，最底层的盒子就装不满了。所以最底层的盒子风险最大，而最上层则更安全。为了弥补高风险，底层盒子的收益会更高一些，而顶层盒子收益更低，但也还不错。银行还给顶层盒子套上保险，这叫“信用违约掉期”。做这一切是为了让信贷评级机构把顶层认证为三 A 安全投资——安全性最高的评级。中间盒子评为三 B，也还行，风险最高的部分就懒得评级了。有了三 A 评级，投行的银行家可以把最安全的部分卖给承担低风险的投资者，还不错的部分卖给其他银行家，把最有风险的部分卖给对冲基金和其他风险投资者。投行银行家赚了几百万。最后还掉贷款，投资者终于为资金找到了好的出路，这可比 1 个百分点的短期国债好多了，投资者很满意，想买更多的 CDO。于是，投行银行家找到房贷公司，想买更多房贷，房贷公司找经纪人要更多房主。但经纪人再也找不到买房的人了，能申请房贷的人都已经有了房子了。但他们有个主意，有房主付不起房贷的时候，房贷公司就收回房子。而房子总在升值，因此房价已经覆盖了断供的风险，房贷公司只需要提高新房贷的风险，而不要求首付，不需要收入证明，不需要任何手续，他们也真就是这么干的。不是借款给值得信赖的房主，也就是所谓的优级贷款。他们开始找那些，嗯，不那么可靠的人。于是就出现了次级贷款，转折点出现了——经纪人和往常一样，用房贷拉拢了这家人和房贷公司，拿到佣金，这家人买了一所大房子。房贷被房贷公司卖给了投资银行家，又被包装成 CDO 卖给了投资者们，一切都狠顺利，大家都发财了。

只要能把房贷卖给下家，自己就不用担心了，让下家去操心好了，如果有房主还不起房贷，

没关系，只要能把风险转嫁给下家，自己就能赚几百万，就像在抱着定时炸弹玩击鼓传花。

毫无悬念，房主还不起房贷了，而房贷在银行家手中，这就意味着他无法偿还月供，房贷变成了房子，没关系，他还能选择卖掉房子。但是越来越多的月供都变成了房子，市场上待售的房子越来越多，供应远远大于需求，房价就再也不会上涨了。事实上，房价开始下挫，这对仍在还月供的人来讲，就形成了一个有趣的局面：他们邻居的房子都挂牌出售的时候，自己的房子也跟着跌价，那为什么还要偿还 30 万的房贷，而自己的房子只值 9 万美元？

他们觉得继续还贷毫无道理，即使他们还得起房贷，他们也弃房而去，断供潮横扫全国，房价跳水。现在投行银行家手里只是一批跌价了的房子，他给投资者打电话推销 CDO。但投资者也不傻，他们答道“不用，谢了”，他也知道，一滴资金流也没有。银行家开始向所有人推销，但谁都不愿意买他的炸弹。他现在惶惶终日，借了数百万，甚至借了数十亿才买下这些炸弹，现在却还不起。不管他怎么折腾，就是无法脱手。但他并不孤单投资者们自己也买了成千上万的炸弹，房贷公司在打电话想卖掉炸弹，但银行家根本不会买。经纪人则被炒了鱿鱼，整个金融系统被冻结了，黑暗时代到来了——大家都破产了。这还没完，投资人找到房主，告诉他的投资已经一文不值了，现在你看到危机是如何轮回的了。

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