

VI Forum on Competition and Regulation:
 Troubled Asset Auctions
 With Lawrence Ausubel, professor of the University of Maryland

The current financial crisis has resulted in trillions of dollars in mortgage-related assets with severely reduced value and little or no liquidity. Although actions such as the creation of the troubled asset relief program (TARP) have been successful in pulling the financial system back from the precipice, little has been done to address the removal of toxic mortgages from banks' balance sheets.

Some experts have suggested troubled asset auctions as a possible solution. The idea is that governments would purchase mortgage-related assets, thereby removing the "toxicity" from banks' balance sheet and allow the banking system to support new lending.

The 6th Forum on Competition and Regulation, held at IESE's Barcelona campus on June 17, 2009, focused on just this: using open, transparent auctions to buy these assets. The conference commenced with an introduction from Prof. Xavier Vives, Academic Director for the forum, who gave a brief overview of the current economic situation and described the problem of troubled assets facing the financial sector in Spain.



Prof. Vives' introduction was followed by Prof. Lawrence Ausubel, Professor of Economics at the University of Maryland, and an expert on the auction theory. Professor Ausubel has published widely on auctions, bargaining, the credit card market, and other aspects of industrial organization and financial markets. In addition, he has helped bring state-of-the-art auction designs to practice, including designing the virtual power plant auctions that are currently operated in Spain and France. During his talk, the professor described the idea behind purchasing mortgage-related assets from banks and how auctions could generate market prices for troubled assets.

Defining the "Problem"

Prof. Ausubel started his talk by delving into the "problem", as he described the current economic situation. The financial crisis, considered by the professor to be the biggest in his lifetime, has resulted in trillions of dollars in mortgage-related assets that have plummeted in value, with nobody knowing exactly how much the drop represents.

In its latest report released in April, The International Monetary Fund (IMF) estimated losses arising from assets since 2007 to be USD 2.7 trillion in the United States and 1.2 trillion in Europe, with two thirds of these losses incurred by banks. The European Central Bank estimates released in mid June were consistent with the IMF data, with expected European bank writedowns of USD 218 billion for securities and USD 431 billion for bad loans. The problem, said Prof. Ausubel, isn't that we feel sorry for the banks – but that holding these assets has hurt their ability to lend, converting them into what he coined "zombie banks".

The auction expert then provided a review of proposed policy responses to the crisis, focusing on TARP, which was passed on October 3rd, 2008. Section 113b of this act cites auctions as a possible solution to address troubled assets – which led to the professor and his University of Maryland colleague, Peter Cramton, to be recruited into a special task force to make this idea a tangible reality.

The plan quickly took a different course with the introduction of the Capital Purchase Program, which Ausubel nicknamed the "Suitcase Full of Cash" approach, what involved dumping billions of dollars of investment funds on banks. The problem with the plan was that while auctions were taken off the table, the toxic assets remained.

The tides turned once again with the new U.S. Treasury Secretary, Timothy Geithner, who proposed the Public-Private Investment Program, a two part plan (one for loans and one for

securities) that involved the government providing subsidized leverage and matching capital to private buyers willing to buy troubled assets, and under which private parties compete in an auction to be buyers (and thus recipients of leverage and matching capital). Currently, no purchase of assets has occurred.

With this in mind, Prof. Ausubel considered the following question: is the banking system capable of providing the new lending necessary to support recovery? Although many regulators would like to sit back and let banks grow out of the problem, once the cost of funds returns to ordinary levels, banks that are making money now may find themselves in trouble again.



Prof. Ausubel illustrated this difficulty by quoting Robert Zoellick, the president of the World Bank, who said: "A stimulus without getting credit markets working again is like a sugar high." The issue of the troubled assets continue to come into play – bringing the idea of auctioning assets back to the table. The question remains, how do we do it?

Modern Auction Methodology

The objective of auctioning troubled assets is to provide a quick and effective way to remove troubled assets from banks' balance sheets and prevent them from becoming Zombie banks. In addition, this methodology aims to establish prices and return liquidity to these assets, as well as to promote transparency.

The second part of the professor's talk gave participants an introduction to modern auction methodology. He described several auction processes, including static, or sealed-bid auctions, which are commonly used for issuing government securities and for government procurement; and dynamic auctions, where bidders bid aggressively and get informational feedback (i.e., Sotheby's, Christies, and, more recently, eBay), which are commonly used for the telecommunications spectrum and the electricity and natural gas sector.

The professor provided further distinction between methods by describing "traditional" dynamic auctions, in which bidders iteratively announce their bids and can name any price, and "clock auctions", in which the rate of the prices is paced. When using a clock auction, the auctioneer announces the price, waits for bidders to respond with quantities, then announces the next price until the market clears. The process in these auctions continues until supply equals demand.

The advantages of the clock auction are that they provide a cohesive way to auction both single and multiple units, they prevent gaps in the demand curve by pacing the speed, they give informational feedback, allowing bidders to base their bids on information during the auction, they allow bidders to manage budget constraint or liquidity needs, they prevent bidders from concealing their intentions by not allowing them to increase their quantities as the price progresses, they make collusion more difficult because aggregate supply, but not individual bids, is announced to the bidders and, finally, they maximize transparency.

Perhaps the best known version of the clock auction is the Virtual Powerplant (VPP) Auctions started in France in 2001 with EDF, and which IBM and MEFF now carry out in Spain. Here, regulators encourage entry into the market, but don't want to force the divestment of the plant onto an investor due to security reasons. Instead, they offer virtual financial contracts that do the same thing.

The VPP auctions typically auction off multiple products in multiple groups for varying durations and at various start dates. These electronic auctions normally include 20-40 bidders, conclude within one day and result in around USD 200 million or more transacted.

While there are currently several proposed uses for clock auction, including airport landing and take-off slots at congested airports and CO2 emissions allowance, the financial sector is a prime candidate that could benefit from this type of auction.

Auctions for Toxic Assets

In the third section of the conference, the Ausubel-Cramton auction proposal for toxic assets was revealed. The plan begins by divvying up the troubled assets into two groups: the "easy" group, with assets whose holdings are sufficiently unconcentrated for a competitive auction and the "difficult" group, with assets whose holdings are so concentrated that they need to be pooled with other assets.

With the "easy" group, a security-by-security auction is undertaken. The government only buys a fraction of the total, which results in the price of the asset having some connection with value. In this case, a reverse (or descending) clock auction is employed, whereby bidding starts with the highest price, where everyone is willing to sell, and decreases until the market clears. Winners in this situation value the security the least (or the liquidity the most).

This type of auction provides several benefits according to Prof. Ausubel: arbitrage across securities, direct liquidity to those who need it the most, improved liquidity for everyone involved and restoration of secondary markets.

With the "difficult" group, the assets are pooled and a reference price is established for each security. The descending single price clock in the auction works by auctioning off percentages of the reference price. Clearing in this case occurs when the cost of purchasing securities bid in the auction equals the allocated budget.

The main difficulty in this type of auction is how to set the reference price.

According to Prof. Ausubel, a two-sided auction can be employed to solve this problem. First, the government announces a category of assets. Private investors then bid for pools of loans in a forward auction in order to establish the reference (or buying) price. A reference price auction is then held, which determines the selling price. Each pool that "wins" is transacted, with the private investors paying the buy price, the banks receiving the sell price and the differences rebated to the government.

The essential feature of this model is that the government is completely uninformed, while the private investors are fully informed, about the asset values. In addition, there will most likely be a required rate of subsidy (ideally, as low as possible) in order for the seller of the asset

to be indifferent between selling and not selling. Finally, the government must provide a subsidy that permits buyers to be leveraged and provides a loan guarantee.

Testing the Auction Design

The last part of the conference focused on data generated from lab experiments performed by the professor at his university to test the auction design.

The experiments were carried out at the University of Maryland, using 16 subjects at a time. Subjects were separated with barriers between desks and did not know who they were competing against. The experiments explicitly analyzed sealed-bid versus dynamic clock auctions for troubled assets and implicitly tested the feasibility of doing something like this very quickly. Subjects were doctoral students put in the role of banks and paid real money for their performance. Both pooled auctions and security-by-security auctions were tested.



The studies showed that compared with sealed-bid auctions, bidders achieved significantly higher payoffs in clock auctions, without increasing cost to the government. Ausubel attributed these results to the fact that clock auctions allowed the bidders to better manage their liquidity needs. In addition, the data showed that although the prices of troubled assets were not significantly different under the two auction formats, there was significantly less variation in

prices and less bidder error under the clock auction method. Moreover, prices were significantly more informative under the clock model. The results suggest that dynamic clock auctions could be a viable solution to clean up toxic assets.

Prof. Ausubel concluded his talk by stressing that a well-designed auction process can provide a quick and effective means to remove troubled assets from bank balance sheets, establish prices and provide transparency, all of which could play a role in reviving the financial sector from the damages caused by the economic crisis.