WASHINGTON, Oct 15 (Reuters) - The U.S. government is working to identify smaller, well-capitalized banks that might have a liquidity problem, after insisting nine big banks accept government capital injections, industry officials said.

But these smaller banks, that might receive portions of a remaining $125 billion in funds, are not lining up outside Treasury Secretary Henry Paulson's door to receive a check.

The nine big banks were essentially arm-twisted on Monday into signing on for the first $125 billion under a program in which the U.S. government gets preferred shares in exchange for the capital infusions.

By insisting all nine take up the money as part of a program to shore up banks and encourage lending, the government avoided singling out a particular large bank as being weak.

"Institutions have a concern that stepping up for the equity... will give the impression to investors and shareholders and depositors that the bank needs government help," said Scott Talbott, chief of government affairs for the Financial Services Roundtable in Washington.

"I know concerns existed before Monday and concerns exist now," said Talbott, whose organization represents about 100 financial services firms.

Treasury is expected to now work with banking regulators to separate the remaining banks into three categories: those that are well capitalized with no liquidity and no solvency issues, those that are relatively well-capitalized but may have a liquidity problem; and those that have both a liquidity problem and a solvency problem.

Only the banks in the middle category are expected to be eligible for a capital injection, the industry sources said.

A bank is generally considered well capitalized if its capital ratio -- a measure of capital compared to risk-weighted assets -- is at or above 10 percent.

Duke University finance professor Campbell Harvey said limiting the injections to those banks that have a liquidity crunch, but are otherwise healthy and viable, is the best use of the government's money.

"By injecting capital in good banks, you get the maximum multiplier effect," Harvey said. "If the money is largely going to go into troubled institutions, it isn't necessarily going to be lent out."

The eligible banks may include community lenders in areas such as California, Michigan and Ohio that have experienced high mortgage loan default rates.

"Some of them might find they need it," said Ike Jones, senior legislative counsel for the Independent Community Bankers of America. He said community
banks are "by and large well capitalized."

The U.S. banking industry has been under pressure from a housing slump and sluggish economy that has caused financial institutions to post stunning write-downs and losses.

Congress earlier this month authorized the U.S. Treasury to spend up to $700 billion to unfreeze credit markets and shore up public confidence. The capital injection program is part of that legislation.

But industry watchers said it will be tough for the government to get smaller banks to sign on.

"I guess it won't be long before the regulators start making calls to regional banks," said Robert Litan, a senior researcher and policy expert at the Kauffman Foundation.

"I can imagine that there are some executives who don't want to see the 202 area code on their phones," he said, referring to the prefix for calls originating in Washington.

Both Federal Deposit Insurance Corp Chairman Sheila Bair and John Dugan, the comptroller of the currency, said on Tuesday they will "encourage" banks to participate in the capital injection program.

They did not specify what that encouragement would entail.

Bair said regulators will be analyzing whether weaker banks should be able to benefit from the program, but did not rule out the possibility.

"For those institutions where there are potential solvency issues, we will carefully monitor any benefits they might derive from these programs," she said.

But some think the real benefits may come from banks' desire to avoid government interference.

George Kaufman, a finance professor at Loyola University who was an economic policy official at the Treasury, said smaller banks had been avoiding private capital because they did not want to give up any control. Now, it may be a different story.

"I think for smaller banks they're going to be incentivized to look for private capital to stay out of government capital," he said. "It's something they should've done anyway." (Reporting by Karey Wutkowski, additional reporting by Patrick Rucker; Editing by Tim Dobbyn)