

# Quantity, Quality, or Both? Explaining Investment Test Scores in Federal Community Reinvestment Act Examinations

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## *Abstract*

Banks and thrifts are major actors in the affordable housing and community development arenas. They are often relied on to invest in low-income housing tax credits and other projects as well as provide operating support. Banks and thrifts are explicitly encouraged to invest in such activities by the Community Reinvestment Act's (CRA's) Investment Test. Regulations require examiners to consider both quantitative and qualitative criteria in determining a large bank's Investment Test rating. The qualitative criteria are particularly important for organizations seeking investments for projects that are more innovative or complex or that offer less than stellar financial returns.

An analysis of CRA performance evaluations reveals that, of the two qualitative criteria, only responsiveness to needs has a significant impact on Investment Test scores. Moreover, controlling for investment activity leads to higher Investment Test scores for larger banks. Implications for CRA policy and implementation are discussed.

**Keywords:** Banks; Community Development and Revitalization; Community Reinvestment Act (CRA)

## **Introduction**

Under current Community Reinvestment Act (CRA) regulations, the Investment Test is one of three tests that most medium-sized and larger banks must undergo as a part of their regular CRA evaluations. (The other two are the Lending and Service Tests.) The Investment Test evaluates the equity investments, grants, and deposits a bank makes in and to organizations and activities that promote community development in low- and moderate-income neighborhoods or benefit low- and moderate-income households

within the bank's assessment area. The test, which was formally integrated into the CRA regulatory regime in 1996 and 1997, is frequently cited as a primary factor in the expansion of bank involvement and partnerships with community development corporations (CDCs), community development financial institutions (CDFIs), low-income credit unions, and other community-based development organizations throughout the United States (Jacob and Bush 2003). Thus, the Investment Test is critically important to many community development and housing organizations all across the country.

CRA regulations prescribe a method for considering both quantitative and qualitative criteria in determining a bank's score on the Investment Test. The regulations call for examiners to evaluate the amount of "qualified" community development investments over the examination period, as well as whether the bank has used "innovative and complex" investments and whether the investments are "responsive to the credit and community development needs" of the community. From the perspective of those seeking bank investments, the nature and structure of the investment instruments can be critical to how much impact those investment dollars have on their community development operations. For example, a near-market-rate deposit in a community development bank, which would generally be considered a qualified investment by a CRA examiner, may have much less impact than a patient, below-market-rate equity investment in that same community development bank. If only the quantity of investments is considered, banks will have little incentive to provide more complex, innovative, or responsive investment types.

This article will evaluate whether examiners appear to be adhering to the letter, or at least the spirit, of the regulations in applying the test. The key issues addressed here are the degree to which Investment Test scores appear to have been based on the quantitative and qualitative criteria specified in the regulations and the degree to which other bank characteristics, including asset size and the results on the Lending and Service Tests, may have affected Investment Test scores.

Despite CRA's importance to community development and affordable housing, little systematic research has examined the behavior of evaluators or the results of examinations. Stegman, Cochran, and Faris (2002) focused on the implementation of the Service Test and found that when banks performed "so poorly on the Lending and Investment Tests that they were in danger of receiving a Needs to Improve rating overall...their Service Test scores were much higher than would otherwise be expected" (432). Higher Service Test scores often gave banks just enough cumulative points to earn an overall Satisfactory rating. The implication of such a finding is that some

examiners may be using the Service Test as a fudge factor to ensure that a bank gets at least an overall Satisfactory rating.

Immergluck (1998) analyzed some of the early performance evaluations (PEs) produced soon after the introduction of CRA reform and found that Investment Test scores were markedly lower than scores on the Lending and Service Tests. These initial low scores may have created some impetus for increased bank investments in housing and community development.

Avery, Canner, and Mok (2005) found that an institution's community development lending (considered as part of the Lending Test in CRA evaluations) is largely unrelated to its overall, final CRA rating.

Only one previous study, conducted by staff at the Federal Reserve Bank of San Francisco, has focused on the determinants of Investment Test scores (Trammell 2004). This study used simple bivariate regression techniques to estimate the proportion of the variance in Investment Test scores that can be explained by qualitative or quantitative factors. Trammell (2004) argued that while the quantity of investments explained a small portion (about 10 to 13 percent) of the variance in Investment Test scores, assessments of innovation and complexity and, especially, responsiveness to needs explained much more (41 and 76 percent, respectively). However, the multivariate analysis was not reported, and so the study did not indicate what the independent effects of the different criteria were.

### **Financial institutions, investments, and housing and community development**

It is widely recognized that depository financial institutions—both banks and thrifts—are major players in the development of affordable housing and community development more generally. Besides providing loans and basic financial services to consumers, homeowners, and developers, banks and thrifts often serve as leading corporate investors in, and funders of, community development activities by purchasing low-income housing tax credits (LIHTCs), providing operating support for CDCs and CDFIs, and making equity or equity-like investments in CDFIs.<sup>1</sup> Banks and thrifts may be involved in these activities because of their dependence on the local economy and the local building stock, but they are also explicitly encouraged to support local community and economic development by CRA regulations. Non-

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<sup>1</sup> Banks can invest traditional forms of equity in for-profit CDFIs, such as community development banks. For nonprofit CDFIs, bank regulators have considered highly subordinated rolling maturity debt called “equity equivalent investments” to be investments and not debt for CRA purposes (McLenighan and Tholin 1997).

depository financial institutions, including mortgage and finance companies, insurance companies, and securities firms, are not covered by CRA and are generally considered less active investors in and supporters of housing and community development endeavors. Moreover, the 1995 changes to CRA, in which the Investment Test was adopted, increased the weight that banks received in their ratings for investments.

Perhaps the single most significant vehicle through which banks and thrifts make investments in housing and community development is the purchase of LIHTCs. Handelman and Smith (2004) estimate that “CRA-motivated” buyers of tax credits dominate demand for LIHTCs, accounting for a “rough estimate” of 90 percent of the market. The LIHTC program is by far the largest supply-side subsidy program for the production of affordable rental housing in the United States (Schwartz 2006). LIHTC purchases qualify as investments under CRA and can be used to improve a financial institution’s score on the Investment Test.

Another key way in which banks and thrifts invest in housing and community development is through their investments in CDFIs, which represent a growing sector of alternative financial institutions that provide credit and capital for affordable housing and other forms of community development in lower-income and disadvantaged communities. While some forms of CDFIs—particularly community development credit unions—date back to the first half of the 20th century, CDFIs began to grow in number and variety in the 1960s and 1970s so that as of 2003, there were approximately 800 to 1,000 of them across the nation (Corporation for Enterprise Development 2003). Nieman and Bush (2002) analyzed one subsector of CDFIs (community development banks) and found that it had grown considerably since the adoption of the Investment Test. From 1996 to 2001, CDFI assets grew from \$2.84 billion to \$5.12 billion. Annual lending volume grew from \$1.43 billion to \$2.91 billion.

Banks and thrifts are an important source of equity capital for CDFIs. The 512 CDFIs surveyed by the Corporation for Enterprise Development (2003) reported that in 2001, more than \$850 million of their current equity capital came from banks. The bulk of this (\$745 million) went to community development loan funds. In fact, depository institutions accounted for more than a third of loan fund capital. CDFIs frequently depend on below-market and creative forms of investment from banks.

One measure of bank nondebt investment in housing and community development projects is available for nationally chartered banks. These are regulated by the Office of the Comptroller of the Currency (OCC), which has generally allowed banks to invest up to 10 percent of their equity capital

in what are called “Part 24” community development investments, including investments in LIHTCs, CDFIs, and similar activities. Litan et al. (2000) found that national banks invested seven times as much (in real dollars) in Part 24 investments from 1993 to 1998 (the latest year they examined) as in the previous 28 years (1965 to 1992).

### **CRA reform**

The 1977 CRA established a regulatory requirement for banks and savings institutions to serve the credit needs of their local communities. CRA is a fairly brief and general piece of legislation that relies on an extensive set of administrative regulations to specify how regulators evaluate and rate banks’ community reinvestment performance. The main enforcement tool is regulators’ ability to block a number of different kinds of changes in operating structure (mergers, acquisitions, new branches) because of poor CRA performance.

Throughout the late 1970s and the 1980s, community reinvestment advocates argued that CRA regulations were not being rigorously enforced (Bradford and Cincotta 1992; Immergluck 2004). In the early 1990s, improvements to Home Mortgage Disclosure Act data and new public access to CRA examinations, both provided by the Federal Institutions Reform, Recovery, and Enforcement Act of 1989, helped revive interest in CRA among community groups, the media, and policy makers (Sniderman 1994).

In 1993, the Clinton administration urged federal banking regulators to propose new rules for implementing CRA. Shortly afterward, the four federal regulators—OCC, the Federal Reserve Board (FRB), the Federal Deposit Insurance Corporation (FDIC), and the Office of Thrift Supervision (OTS)—proposed major revisions to the implementing regulations. In April 1995, after 18 months of public comments and debate, the new CRA regulations were released (OCC et al. 1995). The 12 assessment factors in the previous regulations were replaced by an outcome-based evaluation system that was intended to assess how well institutions serve their communities in terms of lending, investments, and financial services, rather than on how well they conducted needs assessments and documented community outreach.

While a shift from process to outcomes was a primary objective of the final regulatory changes, some attention was also given to easing the regulatory burden for banks, especially smaller institutions (Immergluck 2004). A two-tier evaluation system was therefore established, with banks classified as small or large. The former had less than \$250 million in assets and were subject to more limited evaluation procedures than the latter.

Under the final 1995 rules, which (with some modifications) are generally in place today for banks with more than \$1 billion in assets, CRA evaluations usually consist of three components: the Lending, Investment, and Service Tests.<sup>2</sup> The Lending Test, which measures a bank's performance in direct lending, primarily via mortgages, multifamily loans, and small business loans, accounts for 50 percent of the overall CRA rating. The Investment Test, which accounts for 25 percent of the overall rating, considers investments in community development activities such as community development loan funds or minority-owned banks. Under the Service Test, which accounts for the remaining 25 percent of the overall score, banks are evaluated on the distribution of their branch locations and their provision of basic, affordable deposit services.

For overall ratings, the original legislation establishes four categories: Outstanding, Satisfactory, Needs to Improve, or Substantial Noncompliance. The bank examiner substantiates the rating in a written report. A public portion of the examination is published after the bank is informed of its rating. An institution may receive any of five possible scores on each of the three component tests: Outstanding, High Satisfactory, Low Satisfactory, Needs to Improve, or Substantial Noncompliance.

Table 1 indicates how points are assigned for the different component scores. These numerical equivalents of the scores on the component tests are then summed to arrive at a composite score that corresponds to an overall rating. A composite score of 20 or more yields an Outstanding rating, 11 to 19 yields a Satisfactory, 5 to 10 yields a Needs to Improve, and 0 to 4 yields a Substantial Noncompliance. However, the algorithm used to calculate the overall score is not entirely linear. To give additional emphasis to the Lending Test, an institution must receive at least a Low Satisfactory on that part to obtain an overall Satisfactory rating.

The Lending Test evaluates a bank's lending activities, including the overall amount of lending and the distribution of loans by location and income

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<sup>2</sup> In August 2005, three of the federal banking regulators, OCC, FRB, and FDIC, issued revised CRA regulations creating a new set of "intermediate small banks," those with assets between \$250 million and \$1 billion (OCC, Federal Reserve System, and FDIC 2005). Under a more flexible scoring regime, intermediate small banks are subject to only a Lending Test (which still counts for at least 50 percent of the overall CRA rating) and a Community Development Test. The latter can count for anywhere between 0 and 50 percent of the overall rating and considers a flexible combination of investment and service activities. Theoretically, such institutions are no longer held to any requirements in terms of investment activity, although such activity could still boost their overall CRA rating by enhancing their score under the Community Development Test (OCC, Federal Reserve System, and FDIC 2005). OTS, the thrift regulator, went even further, applying a similar regime to all OTS institutions. The OTS has now changed its rules to be consistent with the other agencies.

**Table 1.** The CRA Large Bank Performance Rating System

		Lending	Investment	Service
Component test ratings matrix				
	Outstanding	12	6	6
	High Satisfactory	9	4	4
	Low Satisfactory	6	3	3
	Needs to Improve	3	1	1
	Substantial Noncompliance	0	0	0
Points required for overall CRA rating levels				
20 +	Outstanding			
11–19	Satisfactory <sup>a</sup>			
5–10	Needs to Improve			
0–4	Substantial Noncompliance			

<sup>a</sup> Must receive at least a Low Satisfactory rating on the Lending Test to receive an overall Satisfactory rating.

of the borrower. It focuses primarily on direct lending to households and small businesses. Examiners consider residential, small business, and community development lending. The Service Test is aimed mainly at a bank's retail banking services. Examiners are supposed to consider the distribution of branches among low-, moderate-, middle-, and upper-income areas, as well as branch openings and closings, especially those affecting low- to moderate-income areas or individuals. Also taken into account are alternative systems of service delivery (automated teller machines, bank-by-phone, loan production offices) and the range of services offered. In addition, the regulations call for an examination of an institution's community development services, which promote credit availability, small business development, or affordable housing, or which provide technical assistance in the financial services field.

### The Investment Test

The focus of my study is the Investment Test, which assesses a bank's record in helping to meet the credit needs of its community through investments—nondebt financial resources usually provided as some form of grant or unsecured equity investment (where a financial return of some sort is expected). Deposits in certain types of financial institutions and certain in-kind donations also qualify as investments under the regulations.

The Investment Test was a new component introduced under CRA reform. Under this test, regulators delineate which types of investments are

considered in evaluating a bank's CRA record. These "qualified investments" must benefit the institution's assessment area or a broader area that includes its assessment area, and they must be for community development as defined in the regulations. A bank's qualified investment activity is supposed to be judged for its innovation and complexity and its responsiveness to needs, as well as its overall quantity. This activity might involve LIHTCs, CDFIs, CDCs, mortgage-backed securities targeted to lower-income households or neighborhoods, small business investment companies (not necessarily geographically targeted), and municipal revenue bonds of various sorts, as well as deposits or membership shares in low-income credit unions, minority-owned banks, or community development banks. Also included are grants or in-kind contributions to community organizations, CDCs, CDFIs, or other nonprofits that primarily benefit low- and moderate-income individuals or communities by providing homeownership counseling or local commercial development, for example.

CRA reform boosted the importance of bank investments in part by making investment activity a more explicit expectation for banks with over \$250 million in assets. Many banks had been investing in community development activities before 1995, and such activities boosted their prospects for better CRA ratings. However, the formulation of the Investment Test in 1995 gave investments new importance.

### **Examining the Investment Test portion of CRA Public Examinations**

Before examining the effect of different criteria on Investment Test scores, I had to establish the sufficiency of examinations in detailing performance on these criteria. I examined the public portion of all of the first 100 CRA public examinations (PE) published in 2004 (from January to August) for banks with assets of at least \$1 billion.<sup>3</sup> During this period, the definition of large banks included many (but not all) banks with assets between \$250 million and \$1 billion. However, the smaller of these institutions are generally viewed as of less interest when it comes to sources of qualified investments since their capacity is more limited. The larger banks make the bulk of qualified investments. Moreover, in 2005, OCC, FRB, and FDIC changed the regulations to define a new set of "intermediate small banks," with assets

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<sup>3</sup> There were 134 CRA examinations published in 2004 for banks and thrifts with more than \$1 billion in assets. Thus, the 100 PEs published between January and August do not appear to suffer from any major seasonality effect with regard to the flow of published examinations throughout the year.

between \$250 million and \$1 billion. These will no longer be subject to a formal Investment Test (OCC, Federal Reserve System, and FDIC 2005). Thus, from a policy perspective, any findings on these smaller banks would be of significantly less relevance to ongoing policy since the entire regulatory regime has changed for them.

I examined large bank PEs in order to identify enough of them with sufficient information on the two qualitative criteria, as well as on the quantity of investment activity, to understand how these criteria were actually being used to determine Investment Test scores. A close review of these 100 PEs from all four regulatory agencies made it clear that only the FDIC frequently provided enough information to assess the examiners' evaluation in terms of both the quantitative and the qualitative criteria on which the regulations say the Investment Test score is supposed to be based.

Table 2 indicates the completeness of Investment Test qualitative data for the 100 PEs during this eight-month period. FDIC conducts more PEs than any other regulator and so accounted for almost half of the initial examinations reviewed. Moreover, of the 45 FDIC PEs, 60 percent had complete information both on the examiner's assessment of the two qualitative criteria and on the dollar amount of qualified investments that the bank made during the period. FRB, OTS, and OCC reported much lower numbers of sufficiently complete PEs. Therefore, the analysis from this point on was conducted on FDIC PEs alone.

**Table 2.** Number of PEs with Complete Information on Quantitative and Qualitative Investment Test Criteria, by Regulator

Regulator	Total Number of PEs	Number with Sufficient Information	Percentage with Sufficient Information
FDIC	45	27	60.0
FRB	16	2	12.5
OCC	23	9	39.1
OTS	16	1	6.3
Total	100	39	39.0

*Source:* Author's sample of 100 FDIC, FRB, OCC, and OTS PEs from January through August 2004.

### FDIC 2003–05 PEs

To examine the derivation of Investment Test scores more carefully, I gathered additional PEs from FDIC alone. Recognizing that some nontrivial number would have insufficient information, I collected all FDIC PEs for banks with \$1 billion or more in assets from January 2003 through April

2005 in order to compile enough for statistical analyses. This amounted to 174 PEs, including the original 45 (from January to August 2004). Screening out the ones with insufficient data on the Investment Test criteria resulted in a data set of 101 FDIC-regulated banks.

Table 3 provides some summary statistics on these banks, which range in size from \$1.02 billion to \$29.3 billion in assets and which are located all across the country. Table 3 also compares the PEs that had complete Investment Test information with the entire set of 174 PEs published over the 28-month period. In terms of bank size, the two groups are essentially equivalent. A somewhat higher mean asset size is mostly due to the fact that the PE for the largest bank in the set had missing Investment Test information and so was omitted from the complete data sample. However, the median asset size of the complete data sample is essentially equivalent to that of the full 174 banks. So, while the banks in the complete data sample are a bit smaller on average than the FDIC banks, this is due primarily to the omission of one very large institution.

It is important to point out that FDIC banks generally do not have assets of more than \$75 billion. In fact, the centralized database of CRA evaluation ratings maintained by the Federal Financial Institutions and Examinations Committee (FFIEC), an interagency coordinating committee of the four CRA regulatory agencies, shows no FDIC exams for banks over \$75 billion between October 1998 and December 2005 (FFIEC 2006). Moreover, relatively few banks with assets of more than \$100 billion are examined. This same database lists only 19 examinations (on 11 banks) by any agency for institutions with more than \$100 billion in assets during the 1998–2005 period. These megabanks constitute a very small set of very large organizations, and understanding their CRA exams is best left to case-study methods.<sup>4</sup>

The complete data sample is also distributed over time in a fashion similar to that for all FDIC examinations for banks with more than \$1 billion. There are somewhat fewer in the last four-month period in the complete data sample (10 of 101 versus 25 of 174), but overall the distributions are quite comparable.

A more significant difference between the complete data sample and the population of FDIC examinations lies in the regional location of the banks. Institutions from the Chicago and, to a lesser extent, the San Francisco FDIC regions are disproportionately represented in the complete data sample. Institutions from the Boston and “other” FDIC regions—Atlanta, Kansas

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<sup>4</sup> As of this writing, of the 11 banks with more than \$100 billion in assets, 7 are regulated by OCC, 3 by OTS, and 1 by FRB. The largest FDIC-regulated bank has \$81 billion in assets (FDIC 2006).

**Table 3.** Descriptive Statistics on 101 FDIC Banks with Complete Investment Test Data, January 2003 through April 2005, Compared with All FDIC Examinations for Banks with Assets over \$1 Billion during the Same Period

	PEs with Complete Investment Test Data	All PEs	Percentage with Complete Data
Mean asset size of the bank (in billions of dollars)	4.28	4.82	
Median asset size of the bank (in billions of dollars)	1.91	1.93	
Standard deviation for asset size	5.83	7.56	
Minimum/Maximum for asset size	1.02/29.30	1.00/264.47	
Number of PEs	101	174	58.0
Number in the San Francisco FDIC region	29	38	76.3
Number in the New York FDIC region	27	53	50.9
Number in the Chicago FDIC region	21	21	100.0
Number in the Boston FDIC region	11	31	35.5
Number in the four other FDIC regions	13	31	41.9
Number published from January through June 2003	23	39	
Number published from July through December 2003	23	39	
Number published from January through June 2004	21	37	
Number published from July through December 2004	24	34	
Number published from January through April 2005	10	25	
Investment Test rating distribution			
Number receiving Substantial Noncompliance	2	3	
Number receiving Needs to Improve	5	6	
Number receiving Low Satisfactory	32	48	
Number receiving High Satisfactory	38	61	
Number receiving Outstanding	24	43	
Number without an Investment Test rating	NA	13	

NA = not applicable.

City, Memphis (TN), and Dallas—are underrepresented. The Chicago office is notable for the fact that all 21 examinations had enough Investment Test information, suggesting that, at least in terms of information revealed in that portion of the examination, different regional offices may be implementing the process differently. Moreover, the performance of the Chicago region suggests that providing more complete information on the criteria for Investment Test scores in public examinations is feasible. While there is some difference in geographic distribution in the complete data sample, it seems unlikely that this difference would have a major impact on the multivariate estimations that appear later in the article.

To analyze the qualified investment activity of the 101 FDIC banks in the context of their financial capacity and structure, I gathered data from FDIC's Uniform Bank Performance Reports for each of the banks and matched the date of the balance sheet information as closely as possible to the date of the examination. (Balance sheet data are from June and December statements.) Data pulled from these reports involved asset size, investments, and core or Tier 1 capital, which generally includes common stockholders' equity and noncumulative perpetual preferred stock, less most intangible assets. It is a measure of the available financial equity on a bank's balance sheet at a given point in time. Adjustments are made to subtract out any intangible assets whose value might be subject to significant uncertainty. Thus, it is a more conservative estimation of equity than just common and preferred stock and provides for a reasonable measure of a bank's maximum available capacity for investment (for all sorts of investments, not only community development investments). In many of the CRA PEs reviewed for this study, the examiners explicitly relied on a ratio of qualified investments to Tier 1 capital (QI/Tier 1) for their measure of investment activity.

In each of these 101 PEs, the examiners commented on two qualitative criteria specified in CRA regulations: the degree to which the qualified investments (1) were responsive to the credit and community development needs of the local community and (2) used innovative and/or complex investments to support community development initiatives. For the responsiveness criterion, as specified in the CRA regulations, a bank's qualified investment activity is supposed to be categorized as Excellent, Good, Adequate, Poor, or Very Poor. The degree to which the bank uses innovative and complex forms of investments in its qualified investment activities (the other qualitative criterion) is supposed to be categorized as Extensive, Significant, Occasional, Rare, or Does Not Use.

To receive an Outstanding score on the Investment Test, the regulations require that the bank demonstrate

1. An excellent level of qualified investments, particularly those that are not routinely provided by private investors, often in a leadership position
2. Extensive use of innovative or complex qualified investments  
*and* (emphasis added)
3. Excellent responsiveness to credit and community development needs

Table 4 indicates the ordinal levels that, according to CRA regulations, must be achieved for the two key qualitative criteria in order to meet different ratings under the Investment Test (OCC et al. 1995). It turns out, how-

**Table 4.** Minimum Qualitative Ratings to Obtain Different Investment Test Ratings

Investment Test Rating (Level Number)	Responsiveness to Credit and Community Development Needs		Use of Innovative and/or Complex Investments
Outstanding (5)	Excellent	AND	Extensive
High Satisfactory (4)	Good	AND	Significant
Low Satisfactory (3)	Adequate	AND	Occasional
Needs to Improve (2)	Poor	AND	Rare
Substantial Noncompliance (1)	Very Poor	AND	Does Not Use

Source: OCC et al. 1995.

ever, that examiners sometimes do not use precisely the language specified in the regulations to characterize the performance of the bank on these criteria. (Frequently, the examiners do not characterize them at all; such PEs were excluded from the study data set earlier.)

Table 5 lists alternative, synonymous terms that were considered equivalent to the terms prescribed in the regulations for classifying performance on the responsiveness to credit and community development needs (the responsiveness to needs) criterion. The table suggests that examiners are generally quite consistent in using the official regulatory terminology to describe an institution's performance on this criterion. In 84 percent of the cases, examiners used the official terminology described in table 4 to classify an institution's responsiveness to needs performance. Moreover, in examining the other descriptors used, the remaining terms were easily allocated as synonyms in these five ordinal categories. For example, "limited" and "low level" were allocated to the Poor category, while "satisfactory" or "reasonable" were allocated to the Adequate category. There are only one or two cases in which there is any significant ambiguity relating to which category is meant ("very limited" might belong in either Poor or Very Poor, and "very good" might belong in Good or Excellent). In these two cases, a conservative assumption was made, and the descriptors were classified according to their more positive synonyms. That is, "very limited" was classified as Poor, and "very good" was classified as Excellent.

Table 6 gives a list of terms considered equivalent or synonymous to different terms prescribed in the regulations for classifying innovation and complexity. This table indicates a somewhat higher degree of departure from the official regulatory terminology when examiners assess this criterion. They used the official categorical terminology in 69 percent of the examinations. However, as with the responsiveness to needs criterion, there were very

**Table 5.** Equivalent Descriptors Used to Classify Performance on the Responsiveness to Needs Criterion

Very Poor	2
very poor	1
not responsive	1
Poor	7
poor	3
limited	2
very limited	1
low level of	1
Adequate	38
adequate	29
satisfactory	3
responds to	2
yes (in response to: Does the institution demonstrate responsiveness to...?)	2
reasonable	1
demonstrated	1
Good	29
good	29
Excellent	25
excellent	23
exhibits leadership	1
very good	1

few cases in which a term was ambiguous. The term “lack of” was equated with Rare, the phrase “invests in an innovative manner” was equated with Significant, and “seeks to make” was allocated to Rare. All 101 exams were assigned responsiveness to needs and innovative and complex levels according to tables 4, 5 and 6.<sup>5</sup>

A literal interpretation of the regulations would suggest that banks should receive an Investment Test score no higher than is indicated by the minimum rating they receive on either of the qualitative criteria. The regulations state that a bank must achieve a certain level of performance on every quantitative and qualitative criterion to receive a certain Investment Test score. For

<sup>5</sup> A former supervisor of examiners and current policy official at one of the regulatory agencies (someone who works on interagency CRA policy) stated that his agency’s goal was to have all examiners use the specific terminology found in the regulations (that found in table 4) in all PEs. “It is harder to compare documents if they don’t use that language,” said the official in a telephone conversation on July 24, 2006.

**Table 6.** Equivalent Descriptors Used to Classify Performance on the Use of the Innovative and Complex Investments Criterion

Does Not Use	23
did not use/made no use of	23
Rare	17
rare	8
lack of	3
low level of	1
one use of	1
not innovative/rarely complex	1
not very much use of	1
two of 98	1
seeks	1
Occasional	31
occasional	25
some	5
moderate	1
Significant	20
significant	12
used/uses	5
make good use of	1
makes use of	1
invests in an innovative manner	1
Extensive	10
many uses of	3
extensive	2
very good	2
appropriate, excellent	1
often uses	1
frequently uses	1

example, to receive a High Satisfactory Investment Test score, a bank must receive the equivalent of a “Good” rating on responsiveness to need and a “Significant” rating on use of innovative and complex investments. Again, according to a literal reading of the regulations, this is regardless of the quantity of investments.

To estimate how closely examiners follow this literal interpretation of the regulations, we can compare the maximum predicted Investment Test score based on the qualitative ratings with the actual score. If the examiners are applying such an interpretation of the regulations, then the actual score

should rarely exceed the maximum predicted rating based on the qualitative evaluations alone.

The first histogram in figure 1 provides such a comparison for the 101 FDIC PEs. It indicates not only whether the actual Investment Test score exceeds the maximum predicted score, but also by how many levels. This first histogram suggests that Investment Test scores usually exceed the maximum predicted score. Of the 101 PEs, 69 had Investment Test scores that were higher than were predicted by performance on the qualitative criteria. For 30 of these, the actual scores were at least two levels higher than the predicted scores. In only one case was the Investment Test score lower than was predicted by the qualitative criteria.

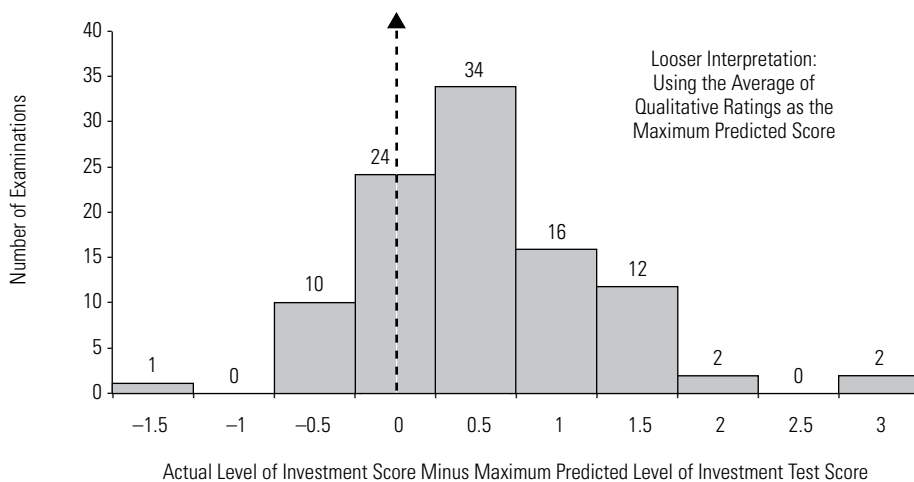
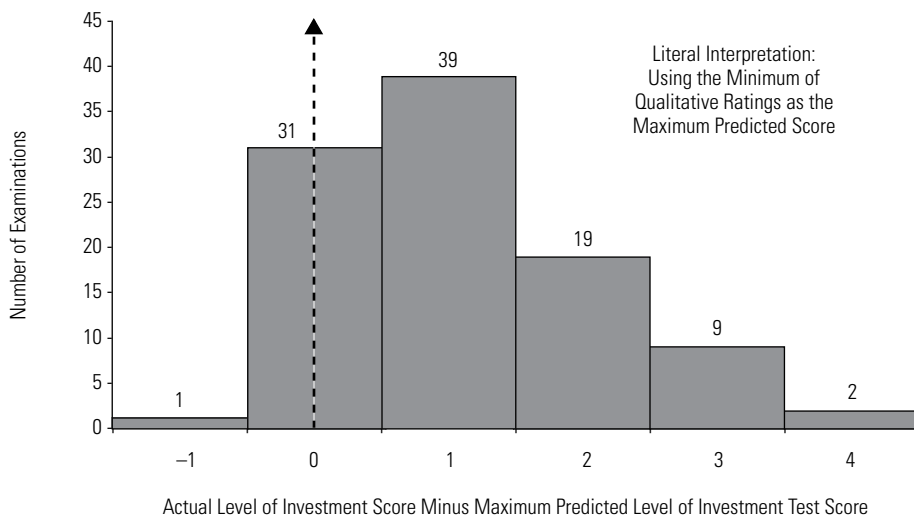
The second histogram in figure 1 repeats this basic analysis, but allows for a looser interpretation of the regulations by compensating for relatively poor performance on one qualitative criterion by a relatively stronger performance on the other. Thus, instead of basing the maximum predicted Investment Test score on the minimum of the qualitative ratings, it is equal to the average performance on both criteria. For example, if a bank's responsiveness to needs was considered "Good" (relates to a High Satisfactory rating) but was judged as "Rarely" (relates to a Needs to Improve rating) using innovative and complex investments, its maximum predicted rating on the Investment Test would be a Low Satisfactory, instead of a Needs to Improve as would be determined by a literal interpretation of the regulations.

Although the less literal application might be expected to significantly reduce the extent to which actual Investment Test scores exceed the maximum predicted score, the lower histogram shows that the actual scores exceed the maximum predicted scores in almost the same number of cases (66 of 101). The degree of excess is somewhat reduced, however, in that in only 16 of these examinations does the actual score exceed the maximum predicted score by more than one level. Moreover, in 11 of the cases, the actual score is less than the maximum predicted score.

### **What explains Investment Test scores?**

This analysis suggests that examiners are not applying the qualitative criterion in the Boolean "and" fashion that a literal interpretation of the regulations would require. For example, examiners are not viewing performance on a criterion at the level associated with a High Satisfactory as necessary to receive a High Satisfactory rating. Further, they may be applying more of an additive function that allows for trading off better performance on the qualitative criteria against better performance on the quantitative criterion.

**Figure 1.** Distribution of CRA Examinations According to Differences between Actual and Maximum Predicted Investment Test Scores Using Alternative Interpretations of the Regulations



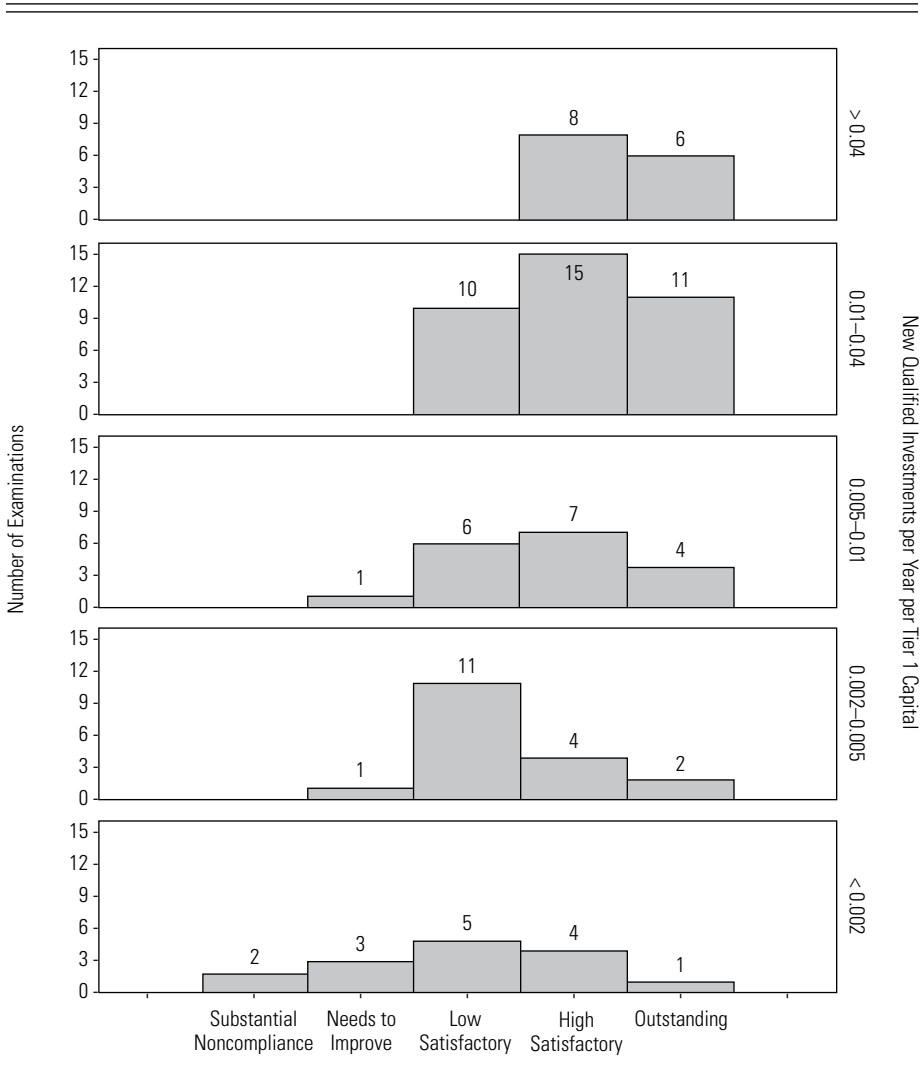
Such an interpretation would suggest that Investment Test score, in general, would improve as a bank devotes a greater share of its investment capital to qualified investments as long as its performance on the qualitative criteria did not deteriorate significantly.

To obtain comparable measures, I first annualized qualified investments over the examination period. That is, I measured the average amount of

investments per year over the examination period, then divided by the bank’s Tier 1 capital based on the corresponding period’s most recent six-month balance sheet.

Figure 2 illustrates the distribution of Investment Test scores for banks with different levels of qualified investment activity when measured this way. Consistent with expectations, banks with higher proportional levels of new qualified investment dollars per Tier 1 capital generally received higher Investment Test scores. Of the 14 banks with more than \$4 of new quali-

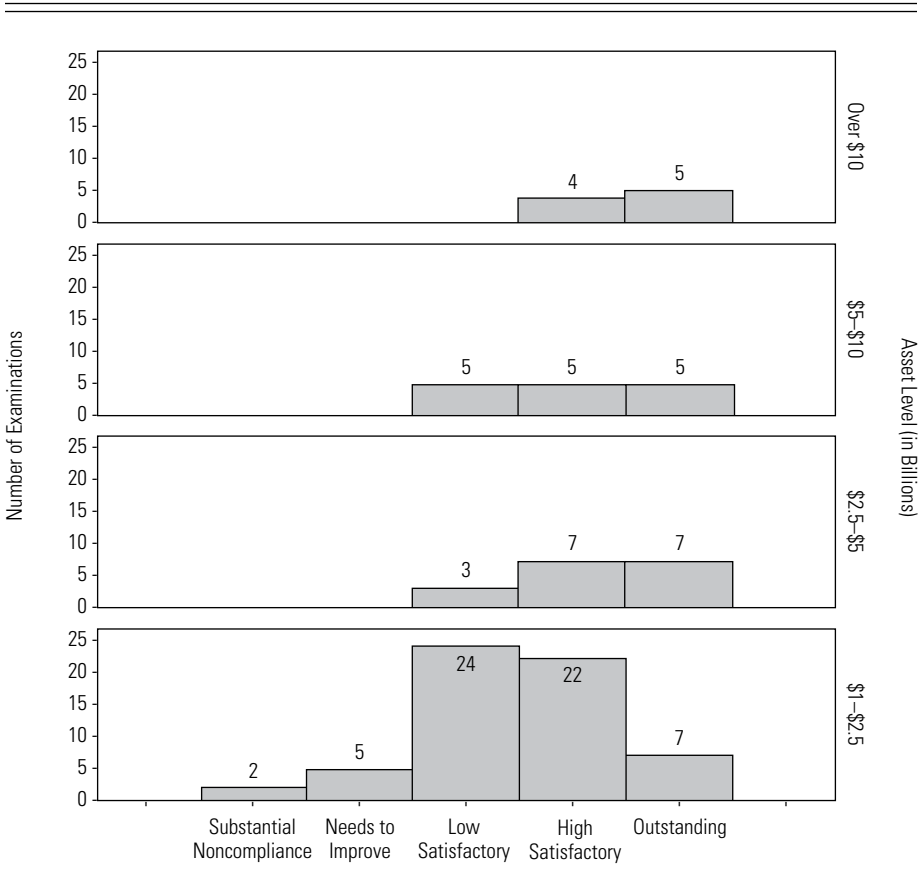
**Figure 2.** Investment Test Scores by Bank’s Qualified Investments per Year per Tier 1 Capital



fied investments per year per \$100 of Tier 1 capital, all received either High Satisfactory or Outstanding scores on the Investment Test. For banks that invested between \$1 and \$4 of new qualified investments per \$100 of Tier 1 capital, 72.3 percent received either High Satisfactory or Outstanding scores on the Investment Test. For banks that invested between \$0.50 and \$1 per \$100 of Tier 1 capital, 61.1 percent received either High Satisfactory or Outstanding scores on the Investment Test. Conversely, of the 33 banks making less than \$0.50 of qualified investments per \$100 of Tier 1 capital, only 33 percent received High Satisfactory or Outstanding scores on the Investment Test. Thus, this simple bivariate analysis suggests that higher levels of investments may indeed result in higher Investment Test scores.

Other factors may be at work as well, however. Figure 3 breaks out the Investment Test ratings for banks by assets and shows that scores are also related to bank size. Larger banks tend to receive significantly higher Invest-

**Figure 3.** Investment Test Scores by Bank Size



ment Test scores than smaller ones. The 101 PEs were broken out by simple asset size categories to determine whether Investment Test scores appear to be related to bank size. All nine of the banks with the largest assets (\$10+ billion) received High Satisfactory or Outstanding ratings on the Investment Test. Of the banks in the \$5 to \$10 billion range, 67 percent received High Satisfactory or Outstanding Investment Test scores. While this pattern is interrupted a bit for the 17 banks with assets between \$2.5 and \$5 billion (for which 82 percent received High Satisfactory or Outstanding scores), it generally holds. Slightly less than 50 percent of banks in the smallest category (\$1 to \$2.5 billion) received High Satisfactory or Outstanding scores on the test.

One might expect that bank asset size is merely a proxy for levels of qualified investments. So it will be important to disentangle bank asset size from investment levels. However, it turns out that a bank's asset size is statistically uncorrelated (Pearson's coefficient =  $-0.02$ , significance =  $0.846$ ) with its level of qualified investments as measured by the *QI/Tier 1* ratio. That is, once differences in Tier 1 capital are taken into account, larger banks do not appear to invest more or less than small banks in qualified investments.

### **Multivariate analysis of Investment Test scores**

The discrepancies between maximum predicted Investment Test scores based on qualitative ratings and actual scores, as well as the potential effect of bank size on scores, suggest that a multivariate approach is needed to estimate the effects of different examination and bank characteristics.

A number of different factors might be expected to influence scores. Besides the results on the two primary qualitative criteria, the following potential factors were also explored: annualized *QI/Tier 1* capital, the asset size of the bank, and the FDIC region in which the bank's main office is located. During the study period, FDIC had eight regions, each of which was responsible for examinations in a number of states.<sup>6</sup> The timing (whether the examination occurred relatively later or earlier over the three-year period of possible dates) was also assessed, but it had no effect on scores.<sup>7</sup>

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<sup>6</sup> The regions and the corresponding states under their purview were as follows: Atlanta (AL, FL, GA, NC, SC, VA, WV); Boston (CT, ME, MA, NH, RI, VT); Chicago (IL, IN, KY, MI, OH, WI); Dallas (CO, NM, OK, TX); Kansas City (IA, KS, MN, MO, NE, ND, SD); Memphis (AR, LA, MS, TN); New York (DE, DC, MD, NJ, NY, PA, Puerto Rico, Virgin Islands); and San Francisco (AK, AZ, CA, Guam, HI, ID, MT, NV, OR, UT, WA, WY).

<sup>7</sup> The timing had no significant effect on Investment Test scores and no significant impact on coefficients of other variables. Given the limited number of observations and the corresponding need to limit the number of regressors, the final regressions did not use this variable.

The FDIC region could play a role in Investment Test scores for at least three different reasons:

1. First, banks in certain parts of the country may be more developed and sophisticated in their appetite for qualified investments.
2. Second, the demand for such investments, including a demand for more innovative and complex investments, may be more developed in some parts of the country. There may be, for example, more CDFIs or more CDCs requesting such investments in certain places. Of course, the demand for such investments may be latent. That is, without banks offering to invest in community development activities, few CDFIs or CDCs may be able to start up or sustain themselves.
3. Finally, the rigor of the examination process might differ across regions. Differences in staffing, political environment, or even the cultural context of the process could play a role. While a larger data set would more readily allow for the inclusion of dummies for each FDIC region, dummies for regions with substantial numbers of examinations (San Francisco, New York, and Chicago) were added altogether and then individually. Only the Chicago dummy had any sort of significant effect on the results, and so to limit the number of regressors, only the results with the Chicago dummy are shown.

Ordinary least squares (OLS) regression is not appropriate because it assumes that the dependent variable is measured on an interval scale. There is good reason not to make this assumption. The effect of going from one level of Investment Test or overall CRA score to the next higher level is not necessarily constant, and there is no straightforward way to develop a measure of the number of equivalent intervals when going up or down the scale. CRA Investment Test scores are ordinal, not interval, ratings. We know that Outstanding is better than High Satisfactory and that High Satisfactory is better than Low Satisfactory, but we do not know whether the difference between Outstanding and High Satisfactory is greater than the difference between High Satisfactory and Low Satisfactory. While the CRA regulations do assign numerical points to each Investment Test score to help generate an overall CRA rating, the formula is not entirely linear.<sup>8</sup>

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<sup>8</sup> In the CRA regulations, Investment Test scores are given the following weight in an algorithm used to determine the overall CRA rating: Outstanding = 6 points; High Satisfactory = 4 points; Low Satisfactory = 3 points; Needs to Improve = 1 point; and Substantial Noncompliance = 0 points. Again, however, the overall score is not simply a linear function of the component test scores because a minimum rating of Low Satisfactory on the Lending

Table 7 gives the results for an ordered logistic regression of Investment Test scores on the independent variables identified earlier.<sup>9</sup> To be parsimonious with the number of variables and maintain substantial numbers of observations in each category, some of the categories were combined for use in the regressions. Because very few examinations yielded Investment Test scores below the level of Low Satisfactory, the dependent variable was configured as a three-level ordinal variable. That is, the dependent variable can equal one of three values: (1) Low Satisfactory or below (including Needs to Improve and Substantial Noncompliance), (2) High Satisfactory, or (3) Outstanding. Thirty-nine of the exams fall into the first category, 38 into the second, and 24 into the third.

The ordinal variables for the qualitative criteria were also reconfigured to three levels. The innovative and complex levels are as follows: (1) Does Not Use *or* Rare use of innovative and complex investments (40 examinations), (2) Occasional use of such investments (31 examinations), and (3) Significant *or* Extensive use of such investments (30 examinations). The responsiveness to needs levels are as follows: (1) Very Poor, Poor, or Adequate (47 examinations); (2) Good (29 examinations); and (3) Excellent (25 examinations).

Again, in a variety of alternative specifications, only the Chicago regional dummy had any significant effect on the results, so to preserve the parsimony of the independent variables, only that dummy was used. In both specifications in table 7, the Chicago dummy does have a significant, negative effect on the Investment Test score, although only at the  $p < 0.10$  level.

Separate regressions, not shown here, used more disaggregated versions of qualitative criterion and FDIC regional variables. The results were generally consistent with the results in tables 7 and 8. However, given the limited number of observations, the smaller number of independent variables is preferred.

The results in table 7 suggest that bank asset size, the amount of qualified investments per Tier 1 capital, and responsiveness to needs are important factors in determining Investment Test scores. Even after controlling for  $QI/Tier1$ , I found that larger banks receive higher Investment Test scores. Responsiveness to needs comes in generally as predicted by the regulations, so that other things being equal, banks receiving lower marks on this crite-

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Test is required for an overall Satisfactory rating. As an alternative estimation to the ordinal regressions shown in tables 6 and 7, an OLS regression using the above point system was run. The findings were consistent with the ordinal regression results shown here.

<sup>9</sup> A logit link function, which assumes evenly distributed categories, was used. Other link functions including a probit function, which assumes a normal distribution, were attempted, but the logit form provided the best fit.

**Table 7. Ordered Logistic Regression Results with the Investment Test Score as the Dependent Variable**

	With OI/Tier1 as the Investment Measure				With Ln(OI/Tier1) as the Investment Measure			
	Estimate	Standard Error	Significance	Exp(B)	Estimate	Standard Error	Significance	Exp(B)
Threshold (Investment Test score)								
Low Satisfactory or Needs to Improve or Substantial Noncompliance	-5.167	0.957	0.000***		-7.673	1.461	0.000***	
High Satisfactory	-0.888	0.645	0.169		-3.271	1.162	0.005	
Asset Size (in thousands)	1.32E-07	5.59E-08	0.018**	1+1.32E-07	1.26E-07	5.66E-08	0.026**	1+1.26E-07
I&C = No Use or Rare (n = 40)	-1.164	0.738	0.115	0.312	-1.326	0.749	0.077*	0.266
I&C = Occasional (n = 31)	-0.319	0.710	0.654	0.727	-0.389	0.718	0.588	0.678
RTN = Very Poor, Poor, or Adequate (n = 47)	-5.844	0.970	0.000***	0.003	-5.466	0.996	0.000***	0.004
RTN = Good (n = 29)	-3.025	0.787	0.000***	0.049	-2.944	0.799	0.000***	0.053
Chicago region (n = 21)	-1.330	0.801	0.097*	0.264	-1.515	0.809	0.061*	0.220
OI/Tier 1	2.963	3.026	0.327	19.363	0.515	0.205	0.012**	1.674
Ln(OI/Tier1)								
Nagelkerke pseudo R <sup>2</sup>	0.744				0.766			
McFadden pseudo R <sup>2</sup>	0.498				0.525			
Percentage of correctly classified observations	85.1				88.1			

Note: N = 101

Exp = exponentiated; I&C = innovation and complexity; RTN = responsiveness to needs.

\*  $p < 0.10$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ .

tion generally receive lower Investment Test scores. Innovation and complexity appears to have a significant effect only when banks that do not or rarely use such investments are compared with those who use them significantly or extensively. However, the coefficient is significant only in the second specification and only at the  $p < 0.10$  level. The coefficients are much smaller than those of the responsiveness to needs variables.

Table 7 provides two slightly different specifications of the regression. It might be expected that as investment levels increase, the impact of additional increases on the Investment Test score would decline, although stay positive. Thus, in the second version (results shown in the right-hand columns), the *QI/Tier1* variable is replaced with a logged version,  $\text{Ln}(\text{QI/Tier1})$ . In this result, the quantity of qualified investments does show up as significant (and positive). Thus, quantity of investments appears to impact Investment Test scores positively. Moreover, the log transform of the investment level variable improves the fit/performance of the regression on all three measures.

Another important finding is that the innovation and complexity criterion is statistically significant only in the second regression and only at the  $p < 0.10$  level. This suggests that examiners may not be considering this criterion heavily in arriving at Investment Test scores. This could work to the detriment of CDFIs, CDCs, and others undertaking more challenging development projects as they compete against less innovative and less complex vehicles for bank investments.

To determine whether problems of severe multicollinearity caused by correlation between the innovation and complexity (I&C) and responsiveness to needs (RTN) variables may be dampening the statistical significance of the I&C variables, measures of association between the ordinal RTN and I&C variables were calculated. As expected, the relationship between RTN and I&C levels was found to be significant and positive. However, the measures of association were not particularly high, allaying concerns about severe multicollinearity problems. The two most appropriate measures for this analysis are Kendall's tau and the Spearman correlation coefficient. The former was 0.457 and the latter was 0.541. The Pearson coefficient was also calculated at 0.532. No measure of association exceeded 0.60, and most were well under 0.40.<sup>10</sup>

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<sup>10</sup> Traditional correlation coefficients/measures of association were also calculated between *all* possible pairs of independent variables. In no case did any of the traditional measures of association (Kendall's tau, Spearman's rho, or Pearson's coefficient) exceed 0.60, and most were well below 0.50.

### **Checking for influence from the Lending and Service Tests**

The CRA regulations call for an independent assessment of the lending, investment, and service activities of the bank being examined. The results of these tests are then combined through a specific quantitative algorithm that generates an overall CRA rating. (See table 1.) Thus, any compensation of poor performance on one test by better performance on another is supposed to be implemented via this algorithm. If examiners give a bank a higher Investment Test rating simply because it performed well on the Lending or Service Test or because it did not do well on one of them, then the independence of the Investment Test and the integrity of the component test system would be called into question. For example, Stegman, Cochran, and Faris (2002) found evidence suggesting that the Service Test may have been used to prop up banks' overall CRA ratings when they did not perform well on the Lending or Investment Test.

Table 8 checks for the possible influence of the other test results on the Investment Test score. The results are generally similar to those in table 7, but there are some differences. First, one of the other component test variables does turn out to be significant (at the  $p < 0.10$  level). A bank receiving a Low Satisfactory score on the Lending Test (compared with the omitted value of Outstanding) was likely to receive a lower score on the Investment Test. This finding could be the result of some unmeasured characteristic that leads an examiner to give a bank a lower (or higher) score on both parts of the examination simultaneously. There may be factors whose effects are not captured by the other independent variables and influence the examiner's assessment of both the Lending Test and the Investment Test.

However, if some unmeasured characteristic (e.g., some general business practices) leads a bank to do a good job on both lending and investments, then the RTN, I&C, and quantitative variables should pick up much of the impact on investment performance (or at least the part that is supposed to be assessed in the PE). Nevertheless, it could be that an unmeasured characteristic (e.g., some perception of the bank's sincerity or intensity in pursuing community reinvestment) is simultaneously influencing the examiner's ratings of the Lending and Investment Tests. Depending on the interpretation of the regulations, it is debatable whether such influence should be reflected in the Investment Test score above and beyond what is captured in the assessments and the level of qualified investments.

The finding on the Lending Test variable could also be explained by some lack of independence—or feedback—between the tests. (The three parts are generally conducted simultaneously by a single examiner.) The results in

**Table 8.** Ordered Logistic Regression Results, Including Tests for the Influence of the Lending and Service Tests, with the Dependent Variable as the Investment Test Score

	Estimate	Standard Error	Significance	Exp(B)
Threshold (Investment Test score)				
Low Satisfactory or Needs to Improve or Substantial Noncompliance	-8.955	1.752	0.000***	
High Satisfactory	-4.243	1.351	0.002***	
Asset Size (in thousands)	1.38E-07	5.68E-08	0.015**	1.000
Ln(QI/Tier1)	0.609	0.228	0.008***	1.839
I&C = No Use or Rare (n = 40)	-0.927	0.776	0.233	0.396
I&C = Occasional (n = 31)	-4.72E-04	0.753	0.999	1-4.72E-04
RTN = Very Poor, Poor, or Adequate (n = 47)	-5.297	1.030	0.000***	0.005
RTN = Good (n = 29)	-2.833	0.825	0.001***	0.059
Chicago region (n = 21)	-1.270	0.899	0.158	0.281
Lending Test = Low Satisfactory	-1.733	0.953	0.069*	0.177
Lending Test = High Satisfactory	-0.804	0.721	0.265	0.448
Service Test = Needs to Improve or Low Satisfactory	-0.798	0.885	0.367	0.450
Service Test = High Satisfactory	-0.699	0.612	0.253	0.497
Nagelkerke pseudo $R^2$	0.789			
McFadden pseudo $R^2$	0.555			
Percentage of Correctly Classified Observations	86.1			
<i>Note:</i> N = 101				
Exp = exponentiated; I&C = innovation and complexity; RTN = responsiveness to needs.				
* $p < 0.10$ . ** $p < 0.05$ . *** $p < 0.01$ .				

table 8 simply indicate the possibility of such interactions and suggest the need for additional research.

Two other findings in table 8 differ from the results in table 7. The impact of the FDIC Chicago region variable is no longer statistically significant. Also, the I&C variable is no longer a statistically significant determinant of Investment Test scores.<sup>11</sup> However, the other key findings, including the significance of the RTN dummy variables, bank asset size, and Ln(QI/Tier1)

<sup>11</sup> Again, because strong levels of association between independent variables may signal severe multicollinearity problems, measures of association between all possible pairs of independent variables were calculated. In no case did any of the traditional measures of association (Kendall's tau, Spearman's rho, or Pearson's coefficient) exceed 0.60, and most were well below 0.40.

variables, all remain consistent with the results in Table 7. The latter variable is now significant at the  $p < 0.01$  level.

Interpreting the coefficient estimates of ordered logistic regressions is not as straightforward as interpreting the more common OLS method because the coefficients (actually, the exponentiated version of the estimates, as shown in the rightmost columns) indicate the relative odds of achieving a higher (versus a lower) Investment Test score because of an increase in the independent variable of one unit.

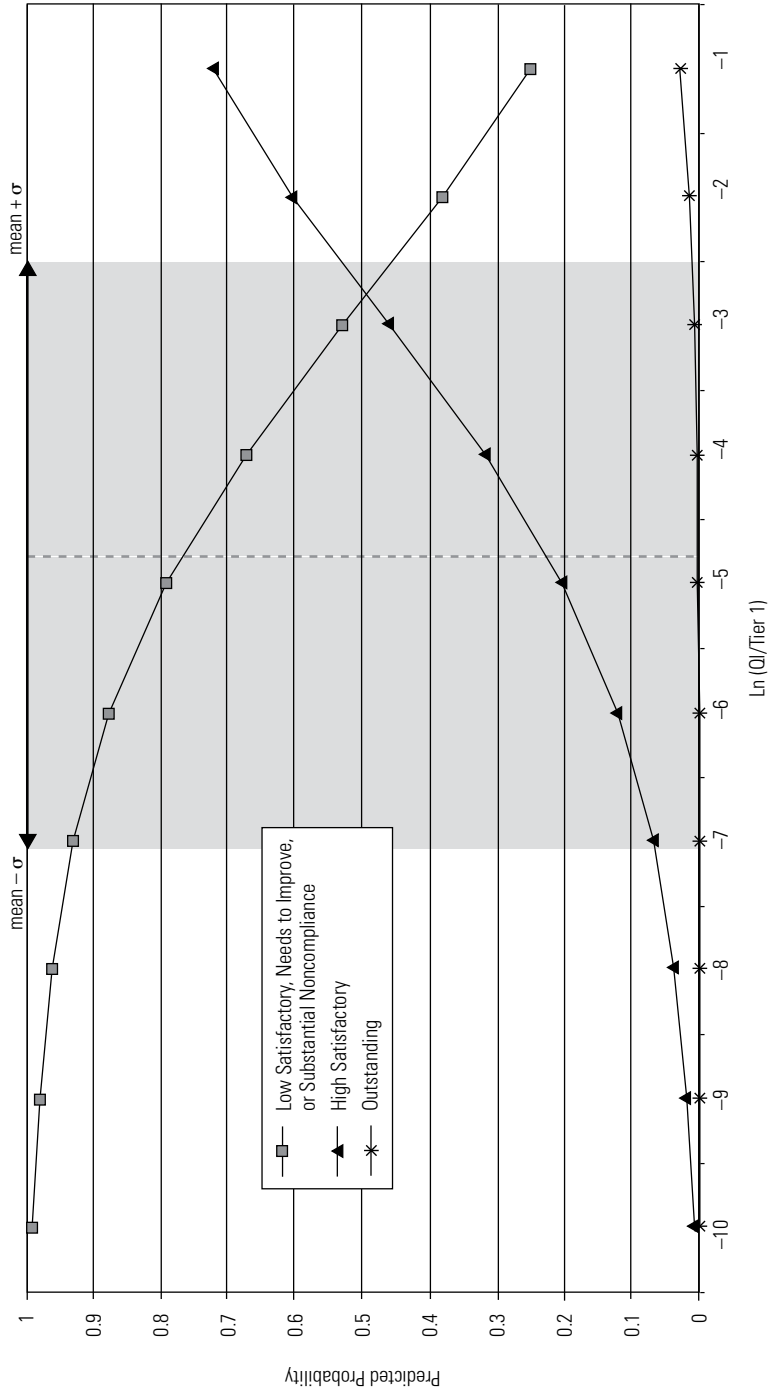
Rather than relying on odds ratios, a more useful tool for interpreting ordered logistic coefficients is the plotting of predicted probabilities. In this case, such plots display how the predicted probabilities of different Investment Test scores change as the value of a particular independent variable changes, assuming that all variables other than the independent variable of interest remain fixed. However, predicted probability curves vary significantly depending on the levels (called the “base values”) at which the other independent variables are held fixed.

Figure 4 presents two graphs, which describe the probabilities of the Investment Test categories as  $\text{Ln}(\text{QI}/\text{Tier1})$  varies, each depending on a different assumption for the base value of the RTN variable. Figure 4 also indicates the range of  $\text{Ln}(\text{QI}/\text{Tier1})$  that contains the mean value plus or minus one standard deviation. This is intended to indicate where most banks' investment levels tend to lie. The top graph assumes that the bank has a level of “Adequate” or below (the modal level). It also assumes that all other categorical variables (I&C, Lending Test, Service Test, and Region) are at their modal levels, while the other continuous variable (Asset Size) is set to its mean value. The bottom graph assumes the same base levels for all variables other than RTN, which is now set to Excellent.

The top graph shows that, with the RTN value at Adequate or below and the other variables at their base levels, banks are most likely to receive an Investment Test score of Low Satisfactory or less when qualified investment levels are low. As the logged investment level approaches its mean, the probability of a Low Satisfactory or lower score begins to decline. Then, at around the mean plus a standard deviation, the probability of a High Satisfactory score begins to exceed that of a Low Satisfactory score. At this level, the probability of an Outstanding score remains very low, regardless of the level of investments.

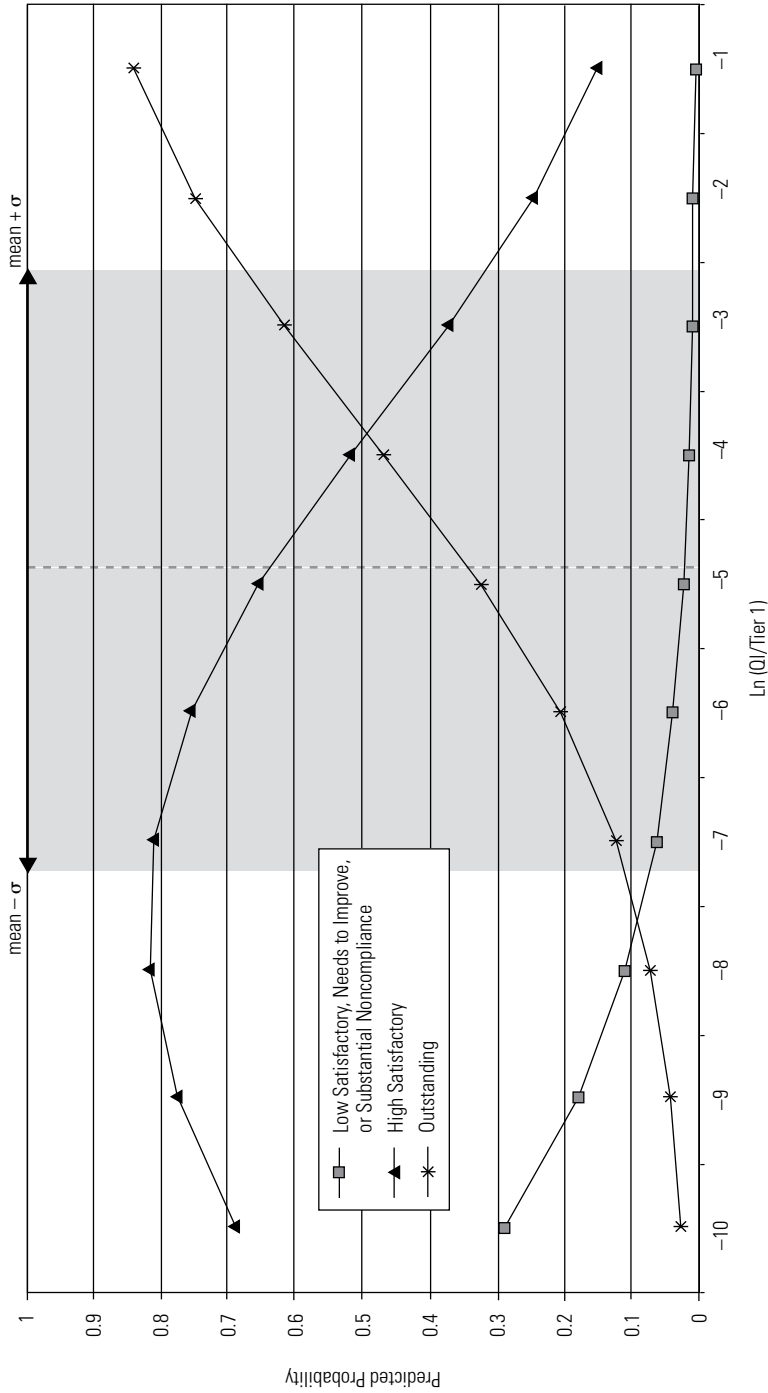
The bottom graph assumes that the RTN value is held at Excellent, with substantially higher probabilities of High Satisfactory or Outstanding Investment Test scores at all levels of investment flow. In fact, with RTN at this level, the probability of a High Satisfactory score always exceeds that of a

**Figure 4.** Predicted Probabilities of Investment Test Scores for Changes in  $\ln(QI/Tier1)$  under Different Assumptions about the RTN Base Value



*Note:* With RTN = Very Poor, Poor, or Adequate. Asset Size is set to the mean value. Other categorical variables are set to modal values (C&I = Occasional, Lending Test = High Satisfactory, Service Test = High Satisfactory, Region = Not in the Chicago region).

**Figure 4.** Predicted Probabilities of Investment Test Scores for Changes in  $\ln(QI/Tier1)$  under Different Assumptions about the RTN Base Value *Continued*



*Note:* With RTN = Excellent. Asset Size is set to the mean value. Other categorical variables are set to modal values (C&I = Occasional, Lending Test = High Satisfactory, Service Test = High Satisfactory, Region = Not in the Chicago region).

Low Satisfactory or lower score. Moreover, at somewhat above the mean logged investment level, the probability of an Outstanding score begins to exceed that of a High Satisfactory score.

It is important to keep in mind that these graphs indicate trends for only two sets of base values. There are, of course, a large number of permutations of possible base values that would result in sometimes quite different predicted probability curves. However, these two graphs provide examples of the sorts of patterns that these probability curves can take and illustrate the importance of the RTN value on Investment Test outcomes, regardless of the level of investment flows.

Figure 5 provides an analysis similar to that of figure 4, except that here the relationship between Asset Size and predicted probability of Investment Test outcomes is plotted. Again, the RTN value in the first graph is assumed to be Adequate or less, and, in the second graph, the RTN level is assumed to be Excellent.

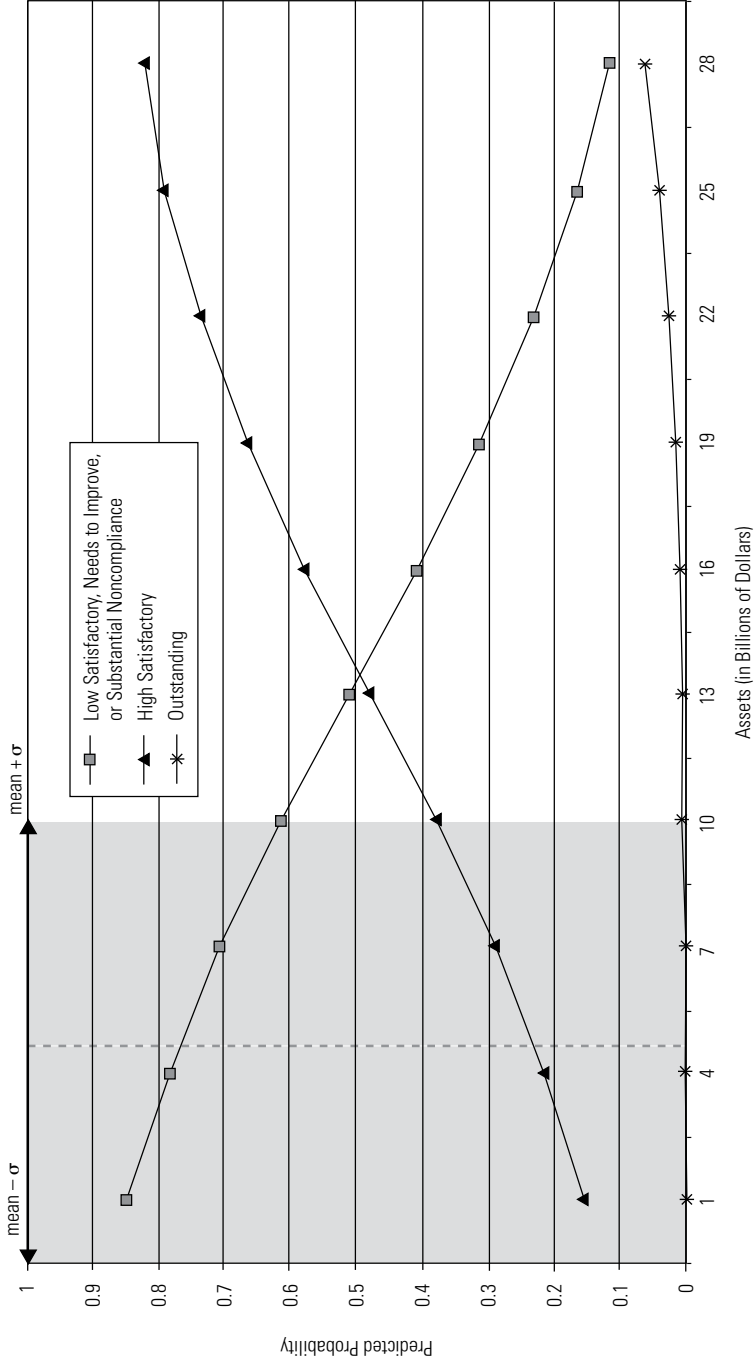
The first graph in Figure 5 shows that, with RTN at Adequate or less and again assuming that other variables are set at base values, an Investment Test score of Low Satisfactory or less is the most likely for most bank sizes. As bank size increases above the mean plus a standard deviation, a High Satisfactory score becomes the most likely outcome. The second graph shows that, with the RTN value at Excellent, the most likely outcome is always a High Satisfactory or Outstanding score. For banks with less than about \$9 billion in assets, the most likely score is a High Satisfactory. For larger banks, the most likely score is an Outstanding, even after I control for QI/Tier 1.

Figure 6 provides the predicted probabilities of Investment Test scores for different RTN levels, again assuming that all other variables are held at their modal values and that all of the continuous variables are held at their mean values. While this is just one of many possible scenarios, the figure illustrates the dramatic impact that RTN has on predicted Investment Test outcomes. With the RTN value equal to Adequate or less, the probability of a High Satisfactory or Outstanding Investment Test score is less than 23 percent. As RTN increases to Good, the probability of a such a score increases to 77 percent. With RTN at Excellent, the probability is 98 percent. Again, modal and mean base values are assumed for other independent variables.

## **Conclusions and policy implications**

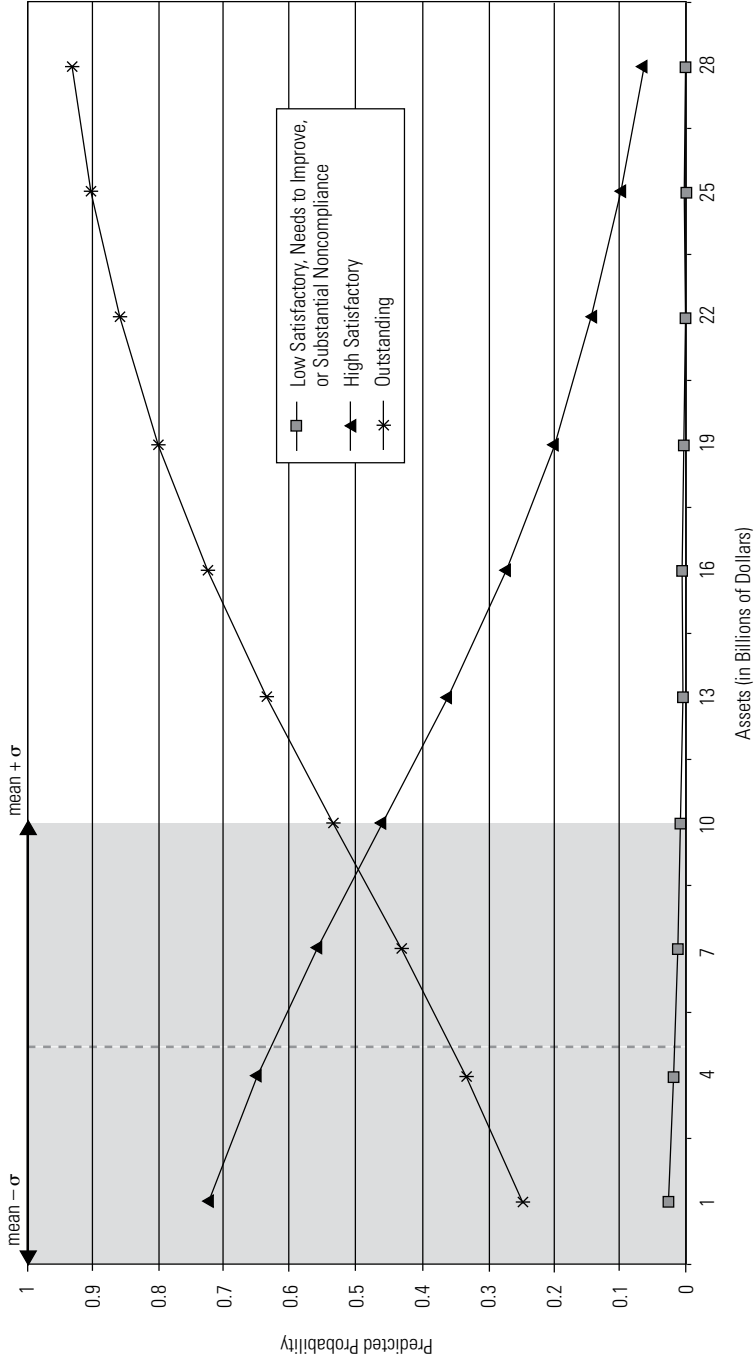
The results of these analyses have a number of implications for community reinvestment policy and implementation. These include implications for the thoroughness and/or public disclosure practiced in the examination

**Figure 5.** Predicted Probabilities of Investment Test Scores for Changes in Bank Asset Size under Different Assumptions about RTN Base Value



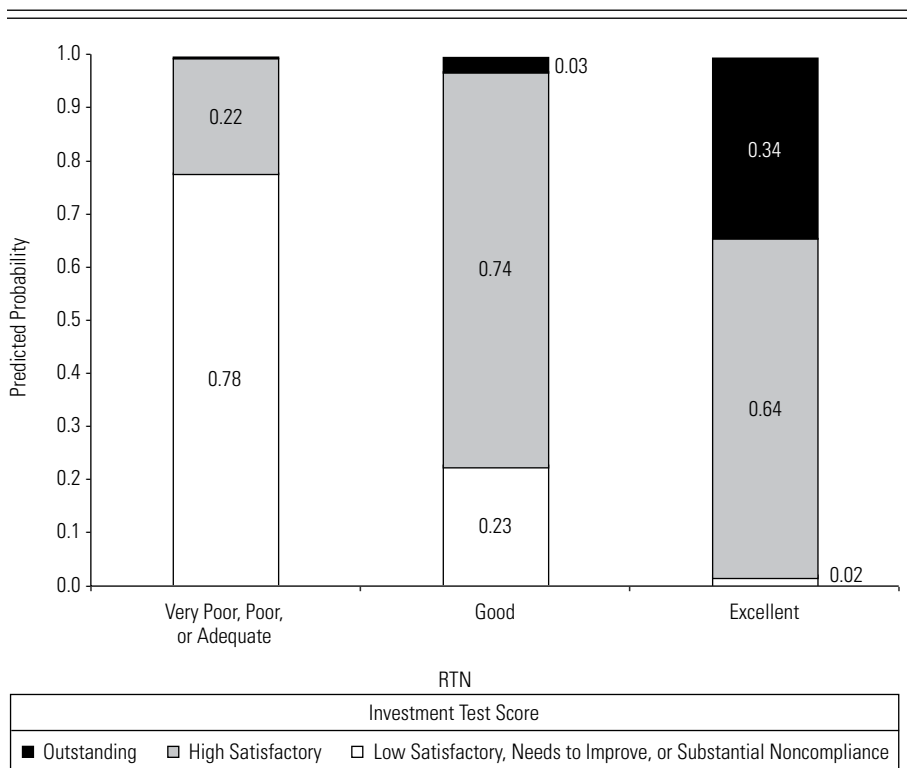
With RTN = Very Poor, Poor or Adequate; Ln(Q/Tier1) set to mean value; other categorical variables set to modal values (C&I = Occasional, Lending Test = High Satisfactory, Service Test = High Satisfactory, Not in Chicago Region)

**Figure 5. Predicted Probabilities of Investment Test Scores for Changes in Bank Asset Size under Different Assumptions about RTN Base Value**



With RTN = Very Poor, Poor or Adequate; Ln(Q/Tier1) set to mean value; other categorical variables set to modal values (C&I = Occasional, Lending Test = High Satisfactory, Service Test = High Satisfactory, Not in Chicago Region)

**Figure 6.** Predicted Probabilities of Investment Test Scores for Changes in RTN



*Note:* Continuous variables (Ln(QI/Tier1) and (Asset Size) are set to the mean values. Other categorical variables are set to modal values (I&C = Occasional, Lending Test = High Satisfactory, Service Test = High Satisfactory, Region = Not in Chicago region).

process and its variation among regulators, the acknowledgment that the regulatory language is not being applied literally in the Investment Test, and differences in the relative effects of the three criteria on Investment Test scores.

*Lack of information on performance and variation among regulators*

Information on performance on regulatory criteria in CRA exams is generally lacking, and the amount of information provided varies greatly depending on the different regulators. The variation among regulators in the sufficiency of qualitative data as shown in table 2 has important implications for CRA policy and practice. It appears that one of two things has been occurring. Either the agencies have been making important data on the community reinvestment performance of their regulatory charges avail-

able to the public at substantially different rates, or some of the agencies are generally not employing all of the criteria specified in the regulations. Most of the incompleteness in the PEs results from the lack of a clear rating of the bank's performance on the two qualitative criteria. In other cases, insufficient data on the dollar amount of new qualitative investments committed during the investment period were presented. A former supervisor of examinations and current compliance policy official at one of the regulatory agencies stated in a telephone conversation on July 24, 2006, that "the goal is to have examiners comment on all the factors" in the Investment Test. This official also explained that the agencies have both compliance policy and operations components. The latter, which includes field examiners, is responsible for fulfilling such goals. This official was unable to explain why different agencies reported qualitative ratings at different rates.

On the one hand, if the discrepancies in the thoroughness of the PEs are due to a different propensity among the agencies to make public the examiner's assessment on different criteria, this is clearly problematic. If FDIC can make these data public most of the time, there is no apparent reason why the other agencies cannot do the same. In fact, there appears to be no reason why all the agencies cannot strive to make this information public on all examinations.

On the other hand, if many examiners are not assessing performance on the qualitative criteria, then this is also problematic, since the regulations clearly require such an assessment. Moreover, without it, certain types of organizations seeking investments that are more complex, innovative, or responsive will be disadvantaged in the competition for bank investments and funding.

Regardless of whether these reporting discrepancies are due to different practices in the substance of the evaluation process or to the way the analysis is presented in the public PE, the variation is cause for concern. The regulations dealing with the generation of Investment Test scores do not vary. For the period examined in this study at least, the regulations provide no justification for FRB and OTS to regularly report substantially incomplete explanations of how they arrived at Investment Test scores.

### *The language of the regulations*

The language of the scoring regulations is not being applied literally. The CRA regulations technically specify that banks must achieve certain levels of performance on both quantitative and qualitative criteria to receive particular scores. More precisely, use of the word "and" in the regulations suggests

that a bank should receive a rating no higher than the one associated with the lowest score on each of three criteria: (1) quantity of investments, (2) use of innovative and complex investments, and (3) responsiveness to needs. However, Investment Test scores usually exceed the maximum predicted score derived from this literal interpretation of the regulations. Of the 101 PEs, 69 had Investment Test scores higher than those predicted by a literal interpretation of the regulations. For 30 of these, the investment scores were at least two levels higher than the maximum predicted scores based on this interpretation. In only one case was the Investment Test score lower than the maximum predicted by the qualitative criteria.

Even if this literal interpretation of the regulations is relaxed somewhat, examiners do not appear to be requiring some minimum performance on the qualitative criteria to achieve a certain score. After I established a maximum predicted Investment Test score as equal to the average (rather than the minimum) performance on the two qualitative criteria, the extent to which actual scores exceeded the maximum predicted scores did not change very much. Using this algorithm, the actual score exceeded the maximum predicted score in 66 of the 101 examinations.

### *The role of innovation and complexity*

The results of the multivariate analysis in tables 7 and 8 suggest that innovation and complexity appear to play a very small role in determining a bank's Investment Test score. If this is the case, it is problematic not only because it is not consistent with the regulations, but also because it has a likely impact on more challenging housing and community development projects. More innovative or complex projects are likely to be perceived as higher risk and thus are likely to be disadvantaged in the competition for bank community development investments. Without giving innovation and complexity some significant weight in the evaluation, banks have little reason to invest in such efforts instead of alternative properties.

### *The role of bank size*

Bank size appears to have a positive impact on scores, even after I control for investment levels per dollar of Tier 1 capital and other factors. The policy implications of such a conclusion are significant: Examiners, after accounting for the other performance criteria, may be giving larger banks higher marks on examinations. This is consistent with Stegman, Cochran, and Faris (2002) and Immergluck (2004), who also found that bank size positively affected CRA ratings.

### *The role of responsiveness to needs*

Although level of qualified investments and bank size are significant, the results of the multivariate analysis suggest that responsiveness to needs is the strongest determinant of the Investment Test score. The importance of this criterion in determining Investment Test scores suggests two potential policy and implementation issues:

1. First, it calls into question whether the Investment Test is really being operationalized as a multi-attribute test consistent with the regulations.
2. Second, it also raises concerns over how examiners determine a bank's performance on this criterion. CRA regulations give little guidance on how examiners are to evaluate banks on this component of the test. Other than some general discussion of performance context analysis by the examiners, the regulations provide little guidance on how examiners are to assess the credit and community development needs in a bank's assessment area. Moreover, it is also unclear how examiners assess the degree to which an institution responds to those needs.

While this analysis raises questions as well as answers them, it does provide a serious, in-depth look at the results and mechanisms of the Investment Test. Given its importance in encouraging increased investment in affordable housing, CDFIs, CDCs, and community development more generally, it is an important subject for more research and policy discussion.

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### *References*

Avery, Robert, Glenn Canner, and Shannon Mok. 2005. Community Banks and Rural Development: Research Relating to Proposals to Revise the Regulations Implementing the Community Reinvestment Act. *Federal Reserve Bulletin*, Spring, pp. 202–35.

Bradford, Calvin, and Gale Cincotta. 1992. The Legacy, the Promise, and the Unfinished Agenda. In *From Redlining to Reinvestment: Community Responses to Urban Disinvestment*, ed. Gregory Squires, 228–86. Philadelphia: Temple University Press.

Corporation for Enterprise Development. 2003. *Community Development Financial*

*Institutions: Providing Capital, Building Community, Creating Impact*. World Wide Web page <<http://www.cfed.org>> (accessed July 5).

Federal Deposit Insurance Corporation. 2006. *Find an Institution*. World Wide Web page <<http://www2.fdic.gov/idasp/main.asp>> (accessed July 1).

Federal Financial Institutions Examination Council. 2006. *FFIEC Interagency Rating Search*. World Wide Web page <<http://www.ffiec.gov/craratings/default.aspx>> (accessed July 1).

Handelman, Ethan, and David Smith. 2004. *Web Update 35: Lowering CRA Thresholds Will Cut Demand for LIHTCs*. Boston: Recapitalization Advisors, Inc. World Wide Web page <<http://www.recapadvisors.com/pdf/wu35.pdf>> (accessed July 29, 2006).

Immergluck, Dan. 1998. *The Community Reinvestment Act and Community Development Financial Institutions: Qualified Investments, Community Development Lending, and Lessons from the New CRA Performance Evaluations*. Chicago: Woodstock Institute.

Immergluck, Dan. 2004. *Credit to the Community: Community Reinvestment and Fair Lending Policy in the United States*. Armonk, NY: Sharpe.

Jacob, Katy, and Malcolm Bush. 2003. *CRA and CDFIs Revisited: The Importance of Bank Investments for the Community Development Financial Institutions Industry and Implications for CRA Regulatory Review*. Chicago: Woodstock Institute.

Litan, Robert E., Nicolas Retsinas, Eric Belsky, and Susan White Haag. 2000. *The Community Reinvestment Act after Modernization: A Baseline Report*. Washington, DC: U.S. Department of the Treasury. World Wide Web page <<http://www.treas.gov/press/releases/docs/crareport.pdf>> (accessed June 29, 2006).

McLenighan, Valjean, and Kathryn Tholin. 1997. *Partners in Community Building: Mainstream and Community Development Financial Institutions*. Chicago: Woodstock Institute.

Nieman, Kimbra, and Malcolm Bush. 2002. *Doing Well by Doing Good: The Growth of Community Development Banking*. Chicago: Woodstock Institute.

Office of the Comptroller of the Currency, the Federal Reserve System, and the Federal Deposit Insurance Corporation. 2005. Community Reinvestment Act Regulations. *Federal Register* 70(147):44256–70. World Wide Web page <<http://www.fdic.gov/news/news/financial/2005/fil7905a.pdf>> (accessed July 20, 2006).

Office of the Comptroller of the Currency, the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision. 1995. Community Reinvestment Act Regulations and Home Mortgage Disclosure: Final Rule. *Federal Register* 60(86):22155–223. World Wide Web page <<http://www.fdic.gov/news/news/financial/1995/fil9535.pdf>> (accessed July 3, 2006).

Schwartz, Alex. 2006. *Housing Policy in the United States: An Introduction*. New York: Routledge.

Sniderman, Mark. 1994. Issues in CRA Reform. *Economic Commentary*. Cleveland: Federal Reserve Bank of Cleveland. World Wide Web page <<http://www.clevelandfed.org/research/com94/0301.pdf>> (accessed July 3, 2006).

Stegman, Michael, Kelly Cochran, and Robert Faris. 2002. Toward a More Performance-Driven Service Test: Strengthening Basic Banking Services under the Community Reinvestment Act. *Georgetown Journal on Poverty Law and Policy* 9:405–52.

Trammel, Ryan. 2004. *Understanding the Relationship between Investment Test Examination Criteria and Investment Test Ratings*. Center for Community Development Investments at the Federal Reserve Bank of San Francisco. World Wide Web page <<http://www.frbsf.org/community/resources/QIfinal.pdf>> (accessed November 1, 2005).