

**Mr. McDonough gives his perspective on the Year 2000 problem and the challenges it poses**

Remarks by the President of the Federal Reserve Bank of New York, Mr. William J. McDonough, before the Regional Y2K Meeting for Financial Regulators in the Asia/Pacific Region, held in Sydney on 19/10/98.

I am delighted to be here today at the first of several regional forums on the Year 2000 problem that the Joint Year 2000 Council is organizing. As an original sponsor and ex officio member of the Council, I am especially pleased that it has been successful in rapidly organizing today's events to coincide with the International Conference of Bank Supervisors meetings. This gathering provides another example of how financial market supervisors and regulators such as yourselves are leading the way in tackling this issue around the world.

In my remarks today, I will provide my perspective on the Year 2000 problem and the challenges it poses. My experience with the issue draws first on my role at the Federal Reserve Bank of New York, where we are addressing Year 2000 challenges as a central bank, as a bank supervisor, as a payment system operator and as a business much like any other business. Internationally, I became involved with the issue through the G-10 Committee on Payment and Settlement Systems and spoke out about the need for payment system operators worldwide to address the Year 2000 problem. More recently, on the Basle Supervisors' Committee, I have been learning about the Year 2000 issues that confront bank supervisors around the globe.

Scope

Simply put, I do not think it would be possible to overstate the importance of the Year 2000 problem as an issue for the financial markets. Naturally, the tendency in these turbulent times is to focus on day-to-day concerns, and to leave future problems to be dealt with later. This tendency must be resisted strongly if we are to succeed in addressing the Year 2000 problem.

I say this because the Year 2000 problem is an issue for every country, firm, organization, government agency, bank and piece of critical infrastructure in the world. If the Year 2000 problems that exist within software programs and embedded computer chips are not repaired by January 1, 2000, the affected systems will cease to function or will malfunction. Those firms that have checked for Year 2000 problems overwhelmingly have found that their systems were affected and would not have functioned normally in the Year 2000 without being fixed. Moreover, the efforts of firms around the world have demonstrated that while the extent of the Year 2000 problem varies, no country or sector is immune from it or can afford to ignore its impact.

Financial sector organizations such as banks, securities firms and insurance companies are typically among the most highly affected organizations. National and local government systems and services are affected. Critical infrastructure such as transport, water, power and telecommunications systems are also likely to be affected. Nearly all aspects of the economy in every country are therefore potentially at risk because of the widespread dependence on a country's core infrastructure.

The unprecedented scope of the Year 2000 problem means that a critical aspect of the issue is the management challenge. Substantial management resources are needed to coordinate the efforts to assess, repair, and test affected systems prior to the fixed deadline of

January 1, 2000. At the Federal Reserve, for example, we have created a number of management positions within our organization that are focused exclusively on different aspects of our Year 2000 preparations.

A final point that underscores the need for urgent and sustained action is the increasing focus on the issue by the media, by the public and by market observers such as the rating agencies. Over the course of 1999, the extent of Year 2000 preparations by financial organizations will become the subject of ever more intensive scrutiny. As supervisors, therefore, we must do all we can to support the efforts of market participants to address the problem effectively, and to build confidence among others that this is being accomplished. While we must make it clear that supervisors cannot solve the problem, we can help mobilize others to take the necessary steps.

Of course, I realize that most of you are already fully convinced of the need to seriously address the Year 2000 issue and are more interested in advice on how to tackle the problem. In this regard, I will focus on approaches that supervisors can take in five areas: (1) encouraging cooperation and coordination; (2) encouraging information sharing and disclosure; (3) developing assessment plans; (4) encouraging testing programs; and (5) developing and supporting contingency plans.

### Cooperation and Coordination

The single most important piece of advice that can be given on the Year 2000 problem is to work cooperatively with others. This applies at a number of levels. First, every organization should develop an internal Year 2000 plan that encourages cooperation between different parts of the organization. For example, a successful Year 2000 program for an organization will encompass not only the software programs that are maintained by the information technology department, but will also address the Year 2000 risks that may be posed by the embedded chips in the firm's buildings, including heating and cooling, building security and safety systems.

The benefits of cooperation include the sharing of information, so that the resources required to obtain valuable information can be reduced. Cooperation across organizations is also essential to the development of joint industry initiatives, including testing programs. For example, we have seen industry associations play a very valuable role in raising industry awareness and providing a focal point for the sharing of information and the development of joint Year 2000 initiatives. I strongly urge each of you here today to challenge the industry associations in your countries to develop an aggressive Year 2000 program for the mutual benefit of all their members.

In fact, a largely unprecedented amount of cooperation already is taking place with respect to Year 2000. For instance, the Joint Year 2000 Council brings together more regulators and supervisors in one organization than has ever been done before. In April of this year, the four sponsoring organizations realized that they needed to pool resources and bring together their respective experts to discuss the issue collectively and to develop a common dialogue with the global supervisory community. The efforts of the Council to date have been valuable in communicating Year 2000 information to this community, and I support the continuation and expansion of these efforts.

The Global 2000 Coordinating Group, which consists of internationally active financial institutions, is another example of an important effort to foster cooperation on the Year 2000 issue. The firms represented on Global 2000 are working together to tackle several different aspects of the problem, especially the international dimension. They have approached this collective effort with a high degree of transparency and I applaud their efforts at cooperation.

Cooperation is also needed between the supervisory community and the private sector. The New York Fed has hosted a series of informal meetings in New York bringing together banks, securities firms, settlement systems, insurance companies and regulators to help each understand better the perspectives of others around the table. The New York Fed also is participating in joint efforts with several industry associations that focus on Year 2000 contingency planning and on testing. For these two issues, in particular, it is critical that an active dialogue be established between the public and private sectors.

The final element of cooperation needed for an effective approach to Year 2000 is cross-industry cooperation. Most financial market participants are not accustomed to gathering extensive information from other industries, such as the telecommunications industry. Yet financial firms, among others, depend critically on the proper functioning of sectors such as transportation, electric power generation, and government services. In the absence of cooperation and coordination, the lack of information flowing across sectors can create serious obstacles to achieving successful Year 2000 outcomes. Errors of omission in coordinating your efforts broadly can be far more significant than you might realize.

Based on our experience in the United States, the creation of a government body to assist in coordinating preparations can play an important role. In the United States, the President's Council on the Year 2000 Conversion has been active in promoting cross-industry discussions and tracking the progress of different industries. Governments in other countries such as Australia, Italy, Japan, Mexico, Saudi Arabia and the United Kingdom have also implemented national Year 2000 strategies.

As supervisors, our first task is to address the Year 2000 issues in the sectors for which we have responsibility. However, we cannot lose sight of the dependence of the financial sector on the broader national and international infrastructure. Year 2000 issues affecting this infrastructure must be addressed. Each of us must seek to ensure that these concerns are being appropriately tackled within our own countries and that information on these preparations is being made available to financial market participants.

### Information Sharing and Disclosure

This last point brings me to my next topic – information sharing and disclosure. In the absence of good information on Year 2000 preparations, we would naturally expect market participants to take a conservative approach and to protect their own interests. It is vital that market participants be encouraged to be as forthcoming as possible about the steps they have taken to prepare for the Year 2000 conversion.

There are a variety of different types of disclosure, and all may play a role in fostering better information about Year 2000 preparations. First, there is voluntary self disclosure, which is a form of information sharing, such as when firms discuss Year 2000 issues and strategies among each other. In addition, financial organizations need to provide information on their Year 2000 efforts to their customers and counterparties, their investors and

others. In the case of banks, for example, it is important for correspondent and custodial customers to develop comfort that the bank will be able to function normally in the new century.

Banks and other firms need to develop strategies for conveying appropriate information efficiently to these constituents. In response to a flood of Year 2000 questionnaires from their customers, some banks in New York are beginning to hold forums to convey information and build confidence that they are addressing the problem. Another practice we are seeing is organizations declining to fill out questionnaires regarding their Year 2000 readiness unless the firm asking the questions discloses the same information. It is clear to me that this sort of market discipline is going to become a powerful force in the coming months for firms that are perceived to be lagging and failing to disclose. A solid program of self-disclosure is the best available approach to ensuring that all parties are willing to share information.

Of course, supervisors and regulators may also need to develop mandatory disclosure programs or to interpret existing disclosure requirements to cover Year 2000-related issues. In the United States, the Securities and Exchange Commission has progressively strengthened its efforts to require meaningful disclosure by all types of firms. Clearly, supervisors considering increased transparency need to act rapidly to ensure that any new requirements will become effective in time to be useful to market participants.

An important challenge in considering either voluntary or mandatory disclosure is the question of what information should be disclosed. Some information can in fact be downright misleading. For example, a firm may engage in internal testing and locate a number of Year 2000-related problems in its systems. Of course, it is the process of this testing that will enable the firm to locate and overcome these problems. Thus, disclosing its internal test results in isolation could give a false impression of its readiness. In general, comprehensive self-disclosure in written form, supplemented by a willingness to answer specific questions, is proving to be the most effective way of sharing information.

Another issue that often comes up in this context is the question of certification. External parties, whether auditors or examiners, cannot realistically certify Year 2000 compliance. The best that they can do is focus on the effectiveness of the process that the organization has established. Oversight by these third parties should not be seen as a substitute for an organization's own due diligence, an area in which internal audit departments have traditionally played a leading role. Internal auditors also could be useful in helping firms develop their Year 2000 disclosures.

Another concern is the existence of possible legal obstacles that may stand in the way of Year 2000 information sharing. In the United States, several efforts have been made to limit or remove these obstacles, and such efforts may be needed in other countries as well. For example, a ruling was issued by our Justice Department limiting the extent to which Year 2000 information sharing could be viewed as a violation of antitrust laws. Recent legislation reduces the legal liability for statements made in good faith that later turn out to be inaccurate. Supervisors have been supportive of these efforts, and I encourage each of you to consider whether substantial impediments to meaningful information sharing may exist in your own countries.

The final point that I will make in this area concerns the power of leading by example. As supervisors and regulators, we should each strive to communicate frequently and openly with our constituents about our own Year 2000 programs. At the Federal Reserve, we

have testified before Congress on our efforts and have made available a large amount of material through the World Wide Web and numerous publications. As leaders in the financial markets, it is important that we set the right tone in promoting information sharing and transparency in our own preparations.

### Assessment and the Role of the Supervisor

I will now turn to the role of supervisors in promoting Year 2000 readiness among the firms that we supervise. The primary effort must be to communicate the seriousness and urgency of the problem to the firms under our jurisdiction. In the United States, the bank supervisors are examining every bank operating in the United States regarding its Year 2000 program. As part of this program, the Federal Reserve conducted reviews of approximately 1,600 organizations, including a significant number of foreign banking organizations.

These reviews have had a very substantial effect in increasing bank awareness of the issue and in focusing senior management's attention on the problem. Initial reviews, completed by mid-1998, indicated that 10-15% of domestic banks had inadequate Year 2000 programs, with the US operations of foreign banks showing an even higher percentage. In almost all cases, the supervisory attention led to immediate steps being taken by the banks involved, and the percentage of banks now in this category is well below 5%.

What can we do if we find banks that are not progressing rapidly enough? If an institution is judged to be deficient, we can communicate these findings through meetings with senior management and the board of directors. We can call for the submission of detailed plans and formal responses to the deficiencies noted. Naturally, such institutions also will be subject to increased monitoring and supervisory review. We can and have put restrictions in place that limit expansion by banks judged to be behind schedule. As a result of these measures, we have found virtually all banks willing to take seriously their Year 2000 responsibilities.

We are now in the second phase of our supervisory program for Year 2000. During this second phase, which will last through March 1999, we will conduct another round of supervisory reviews focused on Year 2000 testing and contingency planning. We also will be looking at how banks are addressing Year 2000 risks arising from their relationships with vendors, customers and counterparties. Even if banks are successful at tackling their internal Year 2000 concerns, they may still face risks from critical services that they receive from vendors. In addition, banks should assess their credit exposures to customers that face significant Year 2000 challenges of their own.

I hope that all financial organizations sufficiently address the Year 2000 conversion in time to limit possible disruptions. If they do not, we will find it increasingly difficult to deal with the issues arising from deficient organizations over the course of 1999. There will likely be some chance that vigorous catch-up efforts on their part will allow them to avert serious problems. On the other hand, the closer the time until January 2000, the more difficult it will be for the customers of that firm to find an alternative provider of financial services. Many banks already are indicating that they will be reluctant to take on new wholesale customers in the latter half of 1999. To avoid this bottleneck, supervisors need to take all possible steps to identify firms whose progress to date has been insufficient, and to pressure them to adopt a plan that will address their Year 2000 problems.

Inevitably, however, supervisors may face difficult enforcement issues during 1999 regarding those institutions that are not making appropriate progress. The timing and severity of these enforcement steps will not be easy to gauge, and I hope that the Basle Committee's Year 2000 efforts will provide some guidance for supervisors on the issues involved in making these choices.

A key concern that I would have today about an organization is whether its senior management truly understands the scope of the Year 2000 problem and the need to tackle it as a critical management challenge and not simply as a technical issue. If appreciation of the problem is lacking at the upper levels of an organization, experience suggests that the lack of concern will filter through to the entire organization, with potentially devastating results.

### Testing

Of the many different elements of a sound Year 2000 project plan, perhaps none is more crucial than testing. In that regard, I will now turn to some of the most important issues related to Year 2000 testing. As a first step, it is important to distinguish the different types of testing and test programs that are in place or being developed. The Joint Year 2000 Council's recently published paper, "Testing for Year 2000 Readiness" contains a valuable discussion of these different types of tests.

Internal tests are those over which the testing institution has full control and in which external parties are not directly involved. Firms that have engaged in multiple types of tests have reported that the internal future date testing phase was the most important in terms of uncovering remaining Year 2000 problems. Uniformly, every institution that has engaged in internal testing also has indicated that this process indeed located further Year 2000 problems that needed repair. Thus, in spite of extensive repair efforts, some problems were not isolated until internal future date tests were performed. This underscores why every organization must build in a program of rigorous internal testing as a part of its Year 2000 project schedule, even for applications designed to be Year 2000 compliant. Moreover, the internal testing process cannot wait until the last minute. Experience has shown that testing programs overall typically consume over 50% of the resources allocated to Year 2000 projects.

External tests are conducted by an institution to assess the risks in repaired and internally tested systems where they interface with systems of other institutions. External tests are particularly important where the interface is proprietary or specific to the particular business activity and the dependency on the external interface is critical. For the most critical systems, in particular payment and settlement systems, external testing must be done, and should be done carefully.

External tests can take a variety of forms. Point-to-point tests verify the ability of an institution to transmit and receive data with another entity. End-to-end tests take this one step further and verify the ability of an institution originating a transaction to transmit test data to a recipient through an intermediary which correctly performs business functions using that data. End-to-end tests are particularly appropriate for real-time, interactive applications. Some organizations are using a series of point-to-point tests to effectively simulate an end-to-end testing process.

With regard to Fedwire, the Federal Reserve's large-value funds transfer system, we have made the system available for external tests from July of this year. We have also begun

a program of shared testing days that allows multiple customers to simultaneously perform end-to-end testing over the system. These tests will cover the full range of payments and accounting applications that we provide and will address both the century date conversion and the leap year date in 2000, which many systems also may not handle correctly.

One of the key lessons that has come out of our test process for Fedwire is the importance of extensive planning for each aspect of the testing program. For example, both the testing schedule and test scripts required extensive efforts to develop. Furthermore, without the very substantial amount of communication and advance planning by the Federal Reserve and the banks involved, we could not be confident that the tests would provide a meaningful output. Naturally, appropriate internal testing must also be completed in order to derive maximum value from the external testing program.

These lessons are particularly pertinent in the case of industry-wide external tests that are designed to permit most or all system participants to test simultaneously with each other. For example, the Securities Industry Association in the United States has developed a very ambitious program of this type for the US stock market. I believe that the Association would be the first to admit that the amount of work required to pull this off has been staggering. As time grows ever shorter, such industry-wide tests may prove impractical for some markets.

Many market participants are also considering the role of proxy testing, in which the tests are conducted by a third party, such as a user group, rather than by each institution for itself. Needless to say, there is some risk in such an approach. However, proxy testing may be appropriate where it is not practical for every user of a service to conduct point-to-point testing with every other user.

In terms of advice, Year 2000 testing obviously is critical, but each market must consider what is achievable in the time that remains. Internal testing is the most critical, and no institution should be allowed to go forward with a Year 2000 plan that does not allot ample time for internal testing. External testing also is important, and payment and settlement systems in particular should make external test facilities available to participants. The degree of elaborate external testing that can be achieved will then be a function of the time available to adequately plan for such a test. It simply does not make sense to devote considerable resources to a test plan that is not likely to be realized. A key goal of testing programs is to build confidence that systems will work as expected on January 3, 2000. There is no doubt that having to call off a test at the last minute because of insufficient planning will be counter-productive to reaching such a goal.

### Contingency Planning

The final issue I will discuss today is contingency planning. Much has been said about the need to develop contingency plans for the Year 2000 conversion, and I fully support these efforts. We need contingency plans in place for two main reasons. First, to ensure that we have considered how to handle the inevitable disruptions that will occur as a result of Year 2000, and, second, to help build confidence that disruptions will not have systemic consequences. In the process of contingency planning, we must also keep in mind that it is prudent to consider the possibility of some very serious, but improbable, events.

Contingency planning for Year 2000 will not be limited to the century rollover itself. As my colleague, Roger Ferguson, has described it, there will be a Year 2000 "shadow" that will affect financial markets both before and after the event itself. This shadow will relate to

the uncertainty among market participants about the possible consequences of Year 2000 disruptions for particular firms and markets. In some cases, this concern will lead market participants to consider conventions and procedures for limiting risks during the rollover itself. For example, some transactions that normally would be executed for settlement on January 3, 2000 may be postponed. In other cases, uncertainty about the possible consequences of Year 2000 disruptions could lead to over-reactions on the part of market participants. As supervisors, we will need to be increasingly alert to the possibility of Year 2000 rumors affecting the liquidity of firms during the latter half of 1999, and should support the disclosure of accurate information in response.

The Basle Committee's Year 2000 Task Force will be developing a contingency planning document focused on issues relevant for bank supervisors. I am pleased to see that the Joint Year 2000 Council also has formed a sub-group to address contingency issues, including sound practices for financial institution contingency planning as well as market-wide aspects. As I see it, there are three broad areas to consider in developing contingency plans. First, each firm should have a contingency plan that covers business continuity issues in the case of operational problems affecting its own systems. Institutions also should develop contingency plans that would help address Year 2000 problems arising from their vendors or customers, or as a result of disruptions to public infrastructure. These plans should seek to assess the risks that firms face in each instance and should focus on the possible measures that may be available to mitigate those risks.

Second, supervisors and regulators need to develop their own contingency plans for how they will deal with problems affecting them or the institutions under their jurisdiction. Most organizations have some experience in contingency planning for various types of market disruptions, so this will not be entirely new ground. However, several aspects of the Year 2000 problem are unique and will require fresh thinking. For example, the potential scope of operational problems that may be experienced across different markets globally is new. At the time of the century change, there also may be significant uncertainty about how long problems will last, as well as the extent to which some participants are facing more than simply operational problems. On both of these fronts, I am hopeful that the transition to the euro at the end of this year will give us some insight into how supervisors and regulators should cope with these issues.

The third major element of contingency planning that needs to take place is both cross-industry and cross-border in scope. The Year 2000 problem has reminded us of the extent of interdependencies in our global economy. Financial markets in particular are dependent on a mix of firms to provide liquidity in all of the various markets. These firms are dependent on vendors for market information and communications, on payment and settlement systems to complete transactions, and on power generators and other infrastructure providers to support all of their activities. In turn, these infrastructure providers are dependent on receiving and paying for adequate supplies to keep their plants operating, as well as on relevant insurance coverage to ensure that they can operate without unlimited liability.

We must consider the scope of these dependencies in formulating contingency plans. Needless to say, there is no way that the financial sector can completely insulate itself from more widespread Year 2000 disruptions by developing contingency plans. However, we should do what we can to prepare realistically for a wide variety of outcomes, including some that may not be very likely. We also should open lines of communication with relevant associations and regulatory bodies outside the financial sector in order to better understand their preparations and contingency plans, and so that they could understand ours.



## Conclusions

These thoughts represent my perspective on the key issues facing the global supervisory community regarding the Year 2000 challenge. As you can infer, I am a very serious believer in the need for vigorous efforts to address the problem. The scope of the challenge is enormous and much work remains to be done before January 1, 2000.

Nevertheless, I am not a doomsayer. I believe the financial sector can and will successfully address Year 2000. I say this because I believe we are capable of harnessing an unprecedented level of cooperation to tackle the problem. I see this happening here today.

I say this because the resources that are being devoted to address Year 2000 are large and growing. We see a number of firms and systems testing successfully ahead of the schedules they have set for themselves, demonstrating the value of the Year 2000 investments that these organizations have made.

I say this because I see governments taking the problem seriously and devoting significant attention to Year 2000 issues throughout the economy. I support these steps and encourage each of you to urge your government to move in this direction if it has not already done so.

As supervisors and regulators, we must continue our efforts to promote solid and transparent programs covering Year 2000 information sharing, testing, and contingency planning. I am convinced that through the aggressive efforts of the global supervisory community and the firms that we supervise, we can build confidence that the financial sector will rise to the occasion long before January 1, 2000, which I might remind you is only 439 days from today.