

The Year 2000 Issue

The smooth entry into the Year 2000 by Hong Kong's financial markets was the result of months of extensive preparations. The exercise provided important practical lessons about contingency planning, cross-sector co-operation and public communications. The Year 2000 issue underlines the continuing need for regulatory authorities and the financial sector to be vigilant about technology-related risks in an age of rapid progress.

Overview

The Year 2000 issue arose from the risk that some computers might fail to distinguish between the year 2000 and the year 1900 when the date changed from 31 December 1999 to 1 January 2000. The problem had its origins in the early days of computer technology, when, to save computer memory, programmers used two digits instead of four to represent the year (for example, '72' instead of '1972'). If left unfixed, the problem had the potential to cause extensive disruption to computer systems.

Following months of detailed preparation and testing to address the Year 2000 issue, Hong Kong's financial markets entered the new millennium without major disruption. Hong Kong was one of the first major financial centres to commence business in the new millennium: the banks and other financial institutions opened for business as usual on 3 January.

No amount of preparation could completely allay the quite natural apprehensions about the exact extent of the impact of the Year 2000 issue. Nevertheless, the general public in Hong Kong approached the problem in a calm and balanced manner. More people than usual updated their passbooks in the days leading up



to the New Year, but this did not cause any capacity problems for the banking system or major disruption to banking services. Media coverage of the rollover event was extensive, factual, and responsible: it played an important part in maintaining the public's confidence in the ability of the banks and the HKMA to tackle the problem.

Achievements

Compliance within the HKMA

To ensure the Year 2000 compliance of all internal administration systems in the HKMA, all the office equipment and systems were checked, rectified and tested to the Year 2000 compliance standard. Contingency plans for all office equipment and systems were formulated and drills were conducted to ensure that the staff concerned were familiar with the implementation details. Logistic and administrative support was also provided to all divisions of the HKMA in preparation for the Year 2000 transition during various rehearsal exercises and during the actual rollover on critical Year 2000 dates.

Compliance in the banking system

Banks rely heavily on computers for their day-to-day operations and any disruptions to computer operations could risk undermining the stability of the banking system. The HKMA therefore took seriously the challenges of the Year 2000 issue and placed it at the top of its supervisory agenda. Preparation for addressing the problem began as early as 1997.

To monitor the banking sector's efforts to address the issue, our specialist examination teams conducted more than 180 on-site examinations of authorised

institutions in 1998 and 1999. All institutions' chief executives were required to submit monthly Formal Statements of Year 2000 Progress to the HKMA. To assist authorised institutions in preparing for the millennium date change, the HKMA issued eleven circulars and guidance notes in 1999, covering topics such as customer awareness, contingency planning, counterparty assessment, customer data backup and the establishment of event management centres.



Deputy Chief Executive Mr David Carse briefs reporters on the progress of Year 2000 preparedness of the banking sector in Hong Kong on 3 June 1999.

By June, all authorised institutions had reported to the HKMA that they were Year 2000 compliant – meaning that they had renovated and tested their computer systems so that the systems could perform, function and manage data involving dates without being abnormally affected by dates spanning the period prior to, during and after the year 2000. The HKMA also monitored the progress of other major infrastructure providers within the banking system, including the interbank payment systems operated by Hong Kong Interbank Clearing Limited, SWIFT, MasterCard, Visa, EPSCO, JETCO and money brokers. Testing between these infrastructure providers and their members was substantially completed by September 1999.





Executive Director Mr Raymond Li (left) appears on TVB's "Pleasure and Leisure" programme to explain the work done by the HKMA to tackle the Year 2000 Issue.

In view of the strenuous efforts made by the banking sector, Hong Kong's banks were consistently assessed by major international organisations, such as the Global Year 2000 Co-ordinating Group, an organisation made up of over 300 major international firms, and other independent reputable rating agencies to be among the best prepared in the world for the Year 2000.

Risk mitigation and contingency planning

Once institutions' compliance work had been largely completed, more attention was given to contingency planning in the latter half of the year. The objective was to ensure that authorised institutions could provide alternative means to conduct business in case there were problems (including any disruptions arising from outside the banking sector and outside Hong Kong that might have an impact on their operations). A further objective was to convey the message to the general public that every effort was being undertaken to prevent problems from arising and that, even in the event of disruption, measures were being taken to safeguard account records. All authorised institutions were required by the HKMA to develop and rehearse a contingency plan for the millennium rollover. In addition, over 40 institutions that were of strategic

importance to the banking sector were required to submit their contingency plans to the HKMA for review.

The HKMA formulated its own contingency plans to cope with any problems that might occur in the banking and monetary systems during the date change. These plans were developed and rehearsed in co-operation with banking industry associations, relevant Government departments and other regulators. The HKMA's contingency plans formed part of the wider efforts of the Government to co-ordinate the preparation of systemic contingency plans covering Hong Kong's financial sector as a whole.

To accommodate possible increases in cash withdrawals in the weeks leading up to the New Year, additional orders were placed for the printing of banknotes so that the ratio of banknotes in reserve to banknotes in circulation increased from 100% to 160% by the end of the year. Banknotes in circulation rose by around 27% to \$118 billion towards the end of December. This was similar to peak levels experienced during the Chinese New Year periods and was easily accommodated by the banking system without strain. Banknotes in circulation began to decline immediately after the New Year.

In July, upon the recommendation of the banking industry, the Government designated 31 December as a general holiday in Hong Kong. The holiday provided an extra day for banks to complete their computer operations and to back up records prior to midnight on 31 December. Banks were asked to take full advantage of the holiday to implement additional measures to safeguard the integrity of customer records.





Deputy Chief Executive Mr Tony Latter briefs reporters on the special Year 2000 liquidity arrangements.

As part of the contingency plan to mitigate any impact on the banking sector's liquidity arising from Year 2000 concerns, the HKMA introduced an Enlarged Discount Window and a Term Repo Facility for banks in Hong Kong in the last quarter of the year. The Enlarged Discount Window was aimed at increasing the amount of Hong Kong dollar liquidity that could be obtained by licensed banks through the Discount Window by temporarily removing existing restrictions and by the HKMA accepting a wider range of debt securities as eligible collateral. The Term Repo facility allowed licensed banks to obtain in advance Hong Kong dollar liquidity from the HKMA for the year end at a known price, therefore removing uncertainties about liquidity availability. These measures were in line with those introduced by the central banks in the UK and US. The intention was to alleviate any potential problem of excessive tightness in the money market over the Year 2000 transition. Neither facility was utilised.

Event Management Centre

As part of the HKMA's contingency planning, an Event Management Centre was established to monitor the performance of the monetary and banking sectors in Hong Kong and overseas, to communicate with local and overseas market authorities and the media, and to

co-ordinate responses to any problems that might arise during critical Year 2000 periods. The Centre was in operation throughout the Year 2000 critical periods and opened round the clock between 8 and 10 September 1999, 31 December 1999 and 4 January 2000, and 28 February and 1 March 2000. During these periods all authorised institutions, payment systems and major infrastructure providers of the banking sector reported periodically to the centre on their performance and on the results of wellness checks.

International and domestic co-operation

The HKMA co-operated fully with overseas market authorities on the basis of the principles endorsed by the Basel Committee on Year 2000 supervision of cross-border banking institutions. Representatives from the HKMA were invited to speak on the topic of contingency planning by market authorities at the second Year 2000 Round Table organised by the Joint Year 2000 Council in July and on event management arrangements at a workshop organised by the Global 2000 Co-ordinating Group in October. The HKMA was also invited to participate in the Year 2000 Task Force of the Bank for International Settlements. Domestically, the HKMA was a member of the Steering Committee on Year 2000 Compliance in the Financial Services Sector convened by the Financial Services Bureau.

The HKMA participated in the Market Authorities Communication Services project (MACS) organised by the Joint Year 2000 Council. The objective of MACS was to establish a communication infrastructure to share information among 27 major economies in relation to the status of each financial market's functioning and key financial market components





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during the millennium date change. Over the critical periods, the HKMA's Event Management Centre maintained regular contact and exchanged reports with overseas market authorities through the MACS network and with the local market authorities through the Financial Sector Emergency Co-ordination Centre.

Public communications

The HKMA recognised at an early stage that the Year 2000 issue was as much a question of public confidence as it was a technological issue. An effective public communication policy was therefore vital in ensuring that members of the public approached the issue in an informed and rational manner. From 1998, authorised institutions had been required to disclose information about their Year 2000 progress in their financial statements. In April, the HKMA wrote to require all authorised institutions to conduct a customer awareness programme to address possible concerns about the Year 2000 problem: the recommended measures included issuing information pamphlets, establishing dedicated hotlines, and deploying more frontline staff to answer customer

enquiries. The HKMA also encouraged banks to use their websites to broadcast up-to-date information about their compliance progress.

In addition, the HKMA gave emphasis to developing a public communication strategy to proactively address the question of public confidence. The overall objective was to address any public anxieties about the readiness of Hong Kong's banking and monetary system in a realistic and informative way and to discourage members of the public from taking any rash actions that might put their own money or the stability of the banking system at risk. To this end, the HKMA and the Hong Kong Association of Banks jointly published a Year 2000 leaflet in July, explaining in plain terms the extent of the preparedness of Hong Kong's banking sector and providing answers to frequently asked questions. In early December, the HKMA launched an Announcement of Public Interest (API) on television aimed at reassuring the general public about the high level of readiness of Hong Kong's banks for the Year 2000.

Facilities were established to satisfy the media's need for information, including regular briefings and a telephone hotline. The HKMA also set up a section on its website and published Year 2000 Bulletins to disseminate information and promote the sharing of sound practices to address the issue.

Public opinion surveys

As part of its public communication strategy, the HKMA commissioned the Social Sciences Research Centre of the University of Hong Kong to conduct a



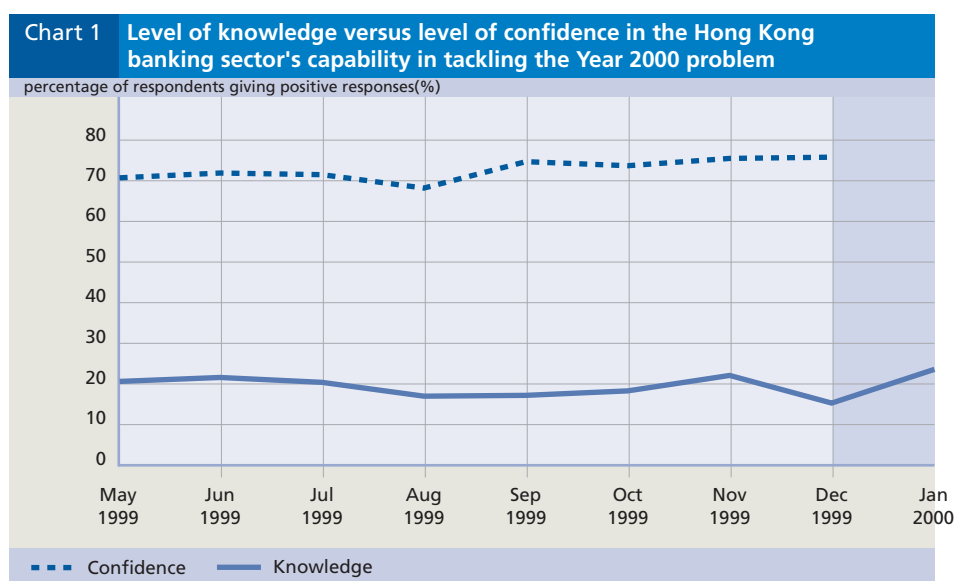
series of public opinion surveys, between May 1999 and January 2000, on the Year 2000 issue. Over 1000 respondents, drawn randomly from among the adult population of Hong Kong, were interviewed each time. This enabled the HKMA to measure and track the public mood on the Year 2000 issue and to plan its Year 2000 communication strategy more effectively.

In accordance with its policy of transparency, the HKMA commissioned these surveys with the intention that the results should, at some appropriate stage, be made public. In order, however, to avoid arousing unnecessary anxieties or speculation, the HKMA decided to keep the surveys confidential until after the transition into the Year 2000. The results of the surveys are summarised below.*

Although the vast majority of respondents had heard of the Year 2000 problem, the proportion of respondents who claimed to be knowledgeable about the problem remained very low throughout the

survey, with around 20% saying they were “very” or “somewhat” knowledgeable about the problem. The remainder claimed that they knew “not much” or “nothing at all” about the Year 2000 problem. The level of confidence in the local banking sector’s capability in tackling the Year 2000 problem, on the other hand, was high throughout the survey. It gradually grew from 71% in May to a peak of over 75% in November and December. Although respondents consistently said that the banking system was the area of life that most worried them in connection with the Year 2000 problem, it was particularly encouraging to note that the percentage of respondents who expressed “very high confidence” in the local banking sector rose from 27% in May to around 40% by the end of the year, with a further 36% expressing a ‘quite high’ level of confidence. Chart 1 illustrates these trends.

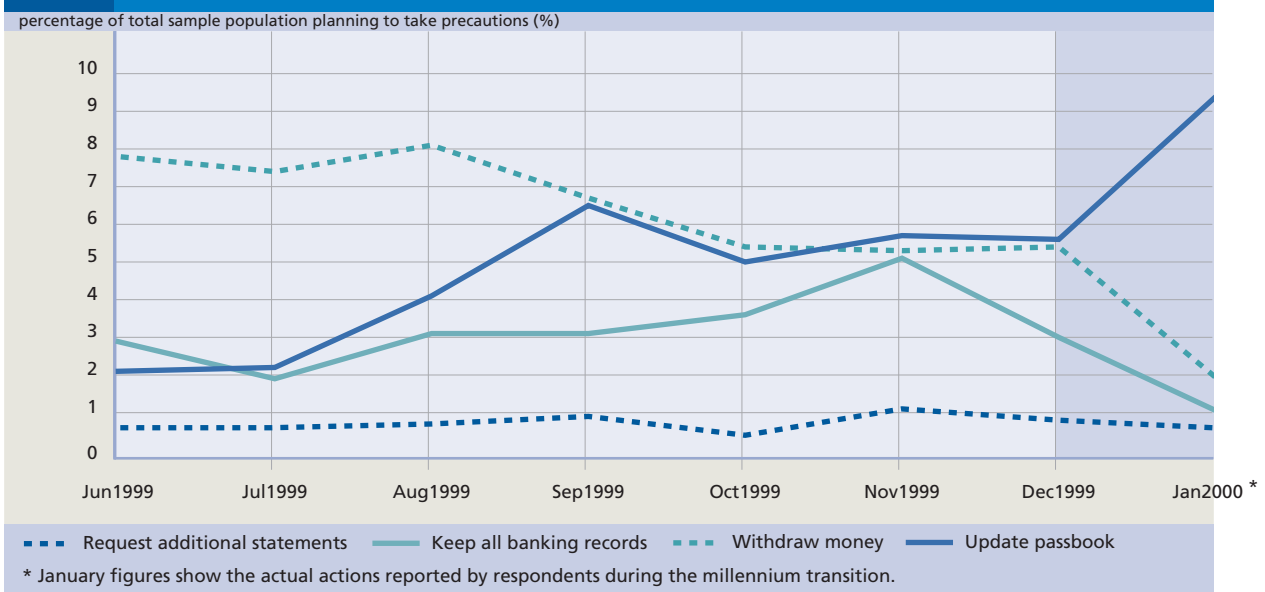
Throughout the survey, a consistent proportion of around 15% of respondents said that they would take precautionary measures with their bank accounts in view of



* The full reports are available at the main library of the University of Hong Kong



Chart 2 Precautionary actions to be taken with bank accounts (Jun 1999 to Jan 2000)



the Year 2000 problem. As confidence increased towards the end of the year, fewer people planned to withdraw money out of their banks while an increasing number said that they would update their passbooks instead. Chart 2 illustrates these trends.

In the last three weeks of December 1999, three weekly countdown surveys were conducted to gauge the public mood in the days leading up to the date change. Specific questions on whether they would plan to update passbooks, withdraw money from banks or test the services of automated teller machines (ATM) before and during the rollover were asked. Confidence levels showed moderate improvements on all fronts: fewer respondents intended to update their passbooks or test the ATM services (see Chart 3). The average amount of money that respondents planned to withdraw prior to the New Year continued to be stable, at roughly equal to 1.1 times of that before the last Chinese New Year holiday.

The final part of the survey was conducted in January 2000 to assess, among other things, levels of satisfaction with the work done by the HKMA and the banking sector in handling the Year 2000 issue. About 73% of respondents expressed satisfaction with the overall performance of the HKMA. There was also a general feeling that the measures taken by the HKMA and banks were about right (66% and 68% respectively). Following the smooth transition in January, it was found that 88% were not worried about the critical date of 29 February and that 85% did not intend to take any precautionary measures.

Lessons learned

The Year 2000 issue was unique in the sense that there was certainty about its timing but uncertainty about how exactly it would play out. Extensive contingency plans, in addition to the rectification and testing work, were therefore essential to prepare for unexpected



outcomes. The smooth transition to the Year 2000 in Hong Kong and elsewhere would not have been possible without the strenuous efforts and positive co-operation of all parties concerned in preparing for the event. The many reports of problems faced by various organisations in other jurisdictions serve as a reminder of how far things could have gone wrong.

An important by-product of the Year 2000 issue was the opportunity it afforded to businesses to completely review their information technology (IT) inventories, to replace or renovate obsolete equipment, and to increase their efficiency as a result.

Senior management and non-IT managers of firms have become more aware of business implications arising from IT issues (such as credit risk, liquidity risk and operational risk, which were apparent in the Year 2000 issue) and of the importance of contingency

planning. The HKMA went through a detailed thinking process to address potential failures in all areas of its work that could carry significant cross-sector and cross-country implications. Although there was, in the event, no need to resort to the contingency plans at either the organisational or the sector-wide level, some of the contingency measures that were devised for the Year 2000 have become part of the ordinary business continuity plans of strategically important institutions, such as the clearing houses. In short, the exercise has improved the emergency response capability of financial institutions and the financial sector as a whole.

Finally, the Year 2000 issue has reminded us of the great risks that come with rapid technological development and of the need to understand, manage and control these risks properly in an age of technological revolution. The experience will be useful for a long time to come.

Chart 3 Precautionary measures to be taken during the rollover (countdown surveys)

