The CMA and the Saudi Stock Market Crash of 2006

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*"هذا المستند وما يحتويه من معلومات ووجهات نظر يعبر عن وجهة نظر معده ولا يعبر عن وجهة نظر هيئة السوق المالية، لذا تخلي الهيئة مسئوليتها عن ما ورد فيه من معلومات و بيانات، ولا يمكن تحميل الهيئة أو منسوبيها المسئولية عن أية خسائر أو أضرار تنشأ عن استخدام هذا المستند، مع الأخذ بالاعتبار أن المعلومات والبيانات ووجهات النظر قابلة للتغيير دون إشعار مسبق".

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In January 2017, members of the Capital Markets Authority (CMA) of Saudi Arabia, the Kingdom's stock market regulator, could look back at 11 years since the country's first domestic stock market collapse. On February 25, 2006, the market had closed at its historic high of 20,634.86. The collapse began on the following day. By the end of 2006, the stock market's main index, the TASI, had lost approximately 65% of its value, and market capitalization had fallen by half, to $326.9 billion.[1]

Although the intervening 11 years had not been entirely smooth—the global financial crisis of 2008 had caused the stock market to plummet even more than it had in 2006—the CMA sought to learn two lessons from its experience with the market's first crash. First, what could it have done to prevent the crash at the time? Second, what could it do now to prevent future catastrophes?

Background of the Rally

The Saudi Stock Exchange, or Tadawul, was established in 1985 under the supervision of the Saudi Arabian Monetary Agency (SAMA, the central bank), supplanting the informal broker-based system that had been in place since the first half of the 20th Century. The government's decision to establish an exchange came in response to rapid growth in the number of Saudi Arabian joint stock companies, which had proliferated during the 1970s as the kingdom's economy matured.[2] The Tadawul All Share Index (TASI), which was assigned a base value of 1,000 in 1985, was constructed to track the performance of all companies listed on the exchange.[3]

During the early 2000s, the TASI began a steady ascent. By year-end 2003, the TASI closed at 4,437.6, up from 2,518.1 at the end of 2002. The index rose in value by 84% in 2004 and 103.7% in 2005, closing at the end of that year at 16,712.64. The Tadawul's market capitalization exhibited similar growth, soaring from $68 billion in 2000 to $646 billion by year-end 2005.[4] See Exhibit 1 for a chart of the TASI from July 2004 to January 2007.

This boom was not confined to Saudi Arabia. Market capitalizations in the stock markets in all of the Gulf Cooperation Council (GCC) countries—Bahrain, Oman, Kuwait, the United Arab Emirates (Abu Dhabi and Dubai), and Qatar, as well as Saudi— rose almost ten-fold between 2000 and 2005, from 117.0 to

[1] Bader Abdulaziz AlKhaldi, "The Saudi Capital Market: The Crash of 2006 and Lessons to Be Learned," *International Journal of Business, Economics and Law*, vol. 8, issue 4 (December 2015), p. 136.

[2] "Saudi Stock Market," GulfBase.com, http://www.gulfbase.com/gcc/index/1?t=3, accessed Jan. 5, 2017.

[3] http://www.tradingeconomics.com/saudi-arabia/stock-market, accessed Jan. 6, 2017.

[4] Information from Google Finance and Abdullah Al-Hassan, Mohammed Omran, Fernando-Luciano Delgado Fernández, *IPO Behavior in GCC Countries: Goody Two-Shoes or Bad to the Bone*, WP/07/149, (Washington DC: International Monetary Fund, July 2007), p.3.

1,135.5, and the value traded soared by 60 times, from $23 million to $1.373 billion. Saudi Arabia was the leader, however, making up roughly half of the market capitalization and 80% of the value traded in 2005.[5] See **Exhibit 2** for regional stock market movements during that period. Between 2001 and the first half of 2006, there were 59 IPOs on GCC markets, which raised a total of $15.5 billion. Of those, 11 (18.6%) were in Saudi, but Saudi companies dominated the money raised, with $7 billion, or 45% of the total.[6]

Several dynamics appeared to be at play. Liquidity throughout the region had risen. Part of this was due to concerns after the 9/11 attacks in the United States, as wealthy Arabs repatriated their investments from western markets and sought to invest domestically. In addition, oil prices had doubled between 2000 and 2005, accompanied by global demand, and, thus, revenues from oil exports. Consequently, Saudi Arabia's government increased its spending on infrastructure, retired debt, and invested in its energy production systems.[7]

By retiring its debt, Saudi Arabia's Ministry of Finance was increasing the banks' liquidity and the banks increased their lending. They found ready borrowers—Saudi citizens who wanted to invest in the stock market. IPOs on the Saudi market tended to sell the stock at par, with participation limited to Saudi investors. Generally, the offer price was significantly below the actual value of the shares, and allocations were fixed across the number of investors who signed up. First-day prices would then show a significant leap, with some traders taking their gains and others seeking to increase their positions. After an initial jump, share prices would settle down. One observer claimed that this under-pricing typically led to a 3x gain on the issue price.[8]

In the Saudi market at the time, there were few options for investment apart from the stock market. Starting small businesses, which might otherwise have absorbed available cash, was an expensive and time-consuming undertaking. In 2005, the year before the crash, Saudi Arabia was ranked 38th of 155 countries in the World Bank's Ease of Doing Business report. Its favorable ranking, though, particularly reflected the impact of low tax rates and an extremely flexible labor market. The minimum capital required to start a business was $129,000 or 1,237% of average income per capita of approximately $8,500. Meanwhile, assembling the proper licenses took 131 days, involved 18 procedures, and cost 82% of average income per capita.[9]

Moreover, the stock market had become increasingly attractive. The IPO of 30% of Saudi Telecommunications Company (STC) in late 2002 had introduced a significant swath of the population to investing in the market. Of the 90 million shares offered, 60 million were sold to private Saudi citizens and the balance to two public pension funds.[10] Prior to STC's listing, there were only 40,000 active portfolios in the Kingdom. After its IPO, the number doubled and only rose thereafter: by some accounts, half of the country's 17.4 million people participated in the 2005 IPO of Yansab, the Saudi Arabian petrochemical company.[11] STC's 39% initial return[12] was dwarfed by the performance of such companies as Sahara Petrochemical, which rose 200% after its June 2004 listing, and Etihad Etisalat, with a 500% gain after its

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[5] Arab Monetary Fund, Emerging Markets Database, International Financial Statistics, and World Development Indicators, in Al-Hassan et al., p. 5.
[6] Al-Hassan.
[7] Khalid R. Al-Rodhan, "The Saudi and Gulf Stock Markets: Irrational Exuberance or Market Efficiency?" *Center for Strategic and International Studies*, October 25, 2005, *051025_saudi_Gulf_mrkts.pdf*.
[8] Al-Rodhan.
[9] World Bank, "Ease of Doing Business: 2006," (Washington DC, 2006), http://www.doingbusiness.org/~/media/ WBG/Doing Business/ Documents/ Annual-Reports/ English/DB06-FullReport.pdf. In the 2017 report, the kingdom's score has dropped to 94 (of 190) and its Starting a Business ranking is 147.
[10] "Oversubscribed Saudi Telecom IPO a huge success," *Telegeography*, January 13, 2003.
[11] Jia Lynn Yang, "Saudi Arabia's Stock Collapse," *Fortune*, Jan. 17, 2007.
[12] Initial return is typically defined as the change between the IPO subscription price and the stock's value at the close of trading on the first day.

December 2004 floatation.[13] Moreover, the increasing oil price boosted the performance of petrochemical companies, further providing confidence to investors.

But all was not rosy. Increasingly, retail traders, who accounted for more than 95% of daily trading volume on the Tadawul, were buying on margin.[14] According to data compiled by SAMA, levels of personal debt rose significantly between 2002 and 2006. Loans for "Other Purposes," i.e., not related to the purchase of real estate or durable goods, increased almost five times, from $7.8 billion in 2002 to $36 billion by 2005. Members of the middle class with little or no investment experience were reportedly selling their cars and liquidating their life savings to participate in the bull market.[15]

The sudden influx of retail traders posed several challenges. They were generally unfamiliar with stock market investment—until the early 2000s, the primary investment assets in Saudi were real estate and gold. In addition, the market had few large institutional investors, and practically no international institutions to provide long-term perspectives and dampen volatility. The recent growth in access to the Internet, and the introduction of online trading, further complicated the situation. One academic commented on the situation in the region at large saying, "Rumors and 'hyping' of stocks on the internet are commonplace and it is a near impossibility for the young regulatory agencies to control it."[16]

Structurally, the market in Saudi was ripe for a boom and a crash. Short-selling was not allowed. Corporate reporting guidelines were not widely followed nor enforced. There was very little equity research,[17] and even had there been, retail investors had little training in interpreting financial information, and the internet offered a ready source of uncertain information.

A contributing cause of this mania was the market's efficiency. Commented one observer, "We are a victim of our own success." CMA had adopted not T+3 or +2 settlement for trades, as was customary in many developed markets, but immediate settlement, or T+0. Commented one academic, "The immediate settlement rule, irrespective of its effect on the quality of price discovery, is very likely to lead to an increased volume of noise trading on the market."[18]

One former mutual fund employee recalled, "Before the rally, the junior staff of a Saudi equity mutual fund would come in after the weekend and find SAR 20 million to invest—and that was on the high end of weekly fund subscriptions. A few months later, during the rally, we'd come in and find subscriptions of SAR 1 to 1.5 billion to invest. The market prices were insane, but that's what we had to do!"

Any efforts to slow trading or increase retail investor understanding of the risks they were assuming was viewed askance. Barring investment in high-risk companies, requiring certification for investment, or even requiring potential investors to fill out questionnaires regarding their understanding of the risks of investing in the market were seen as annoying barriers to making money, which every trade was sure to do.

Furthermore, some classes of stock were easily manipulated. "Paper companies," or companies that had been formed and taken public in the 1980s and since languished with scant floats and indifferent management, were ready targets for unscrupulous investors to control and then "pump and dump" the stock. Wealthy investors might buy and sell shares of a small company among themselves to create the

[13] Abdullah Al-Hassan, et al. , p. 33.
[14] M. A. Rahman, et al. "Herding where retail investors dominate trading: The case of Saudi Arabia," *The Quarterly Review of Economics and Finance* (2015), http://dx.doi.org/10.1016/j.qref.2015.01.002
[15] Jia Lynn Yang, "Saudi Arabia's Stock Collapse," *Fortune*, Jan. 17, 2007.
[16] Al-Hassan et al., p. 4.
[17] Mahmoud Ahmad, "Amarai IPO 70% Subscribed in Two Days," *Arab News*, July 7, 2005.
[18] Rahman.

illusion of demand, only to sell once the prices rose.[19] At the same time, the government authorized a new sector, insurance, but decreed that all insurance companies that received a license must go public prior to doing business. Thus, a large number of companies appeared on the market with risky prospects and thin floats that again could be easily manipulated. As long as the stock market continued to rise, however, these concerns were largely ignored.

At the end of 2005, the Saudi stock market closed above 16,000. Share prices had been rising continuously since 2002. Rational citizens would have been irrational to remain out of the market. Moreover, government agencies were working at cross purposes. While some were aware of the inflating bubble and trying to restrain it, one observer noted, "Some government officials and analysts continued to issue statements until the end of 2005 encouraging citizens to invest in the market."[20] Some observers blamed the press for its excitement during the rally. Commented another observer, "The CMA couldn't have stopped the rally. Any efforts to restrain trading during the boom were seen by the public as 'You don't want me to make money.'" The general consensus, though, was that the boom had been driven by momentum and speculation, enhanced by technology.

Tap the Brakes and Then the Crash

In the words of academic observers, "The spreading gap between the increase in stock prices and economic fundamentals, and the growing perception of overvaluation resulted in a price correction in the region's major markets."[21] One of the warning signs of a speculative bubble was the increase in the number of IPOs. Research has shown that companies issue equity when they perceive it to be overpriced, and prefer to use debt or internal financing otherwise.[22] The increase in the number of IPOs in Saudi, from one in 2003 to five two years later, along with the dramatic increase in the market capitalization, proved to be a warning sign. See **Exhibit 3** for IPOs for GCC countries between 2001 and the first half of 2006.

At the end of 2005, the International Monetary Fund (IMF) concluded its assessment of Saudi Arabia's market with the words, "Authorities need to be cautious in light of the continuing strong increase in stock prices."[23] Exactly how to do it, though, was another question. Another account noted, "It is all too easy to recommend active policy to burst the bubble before it becomes unmanageable. It is much more difficult, however, to craft sensible economic policies to cool the economy off without impeding real economic progress."[24]

Efforts to control the rally were described as "too little, too late." It is important to note that the CMA, the Tadawul's regulatory agency, had only been established in July 2004 and no one in the Kingdom had experience with such a rally or its crash.[25] As the bubble became evident, the CMA was still negotiating its relationship with SAMA, the previous regulator of the stock market. Many market observers noted, "The situation was crazy. Here was this new agency and it was thrown in the middle of the jungle."

[19] AlKhaldi, pg. 136
[20] AlKhaldi p. 137.
[21] Al-Hassan, p. 6.
[22] Randall Morck, Andrei Shleifer, Robert W. Vishny, Matthew Shapiro and James M. Poterba, "The Stock Market and Investment: Is the Market a Sideshow?" *Brookings Papers on Economic Activity*, Vol. 1990, No. 2 (1990), pp. 157-215.
[23] IMF, *"IMF Executive Board Concludes 2005 Article IV Consultation with Saudi Arabia,"* Public Information Notice No. 05/161, in AlKhaldi p. 138.
[24] Al-Hassan et al., p.6.
[25] Bader Mohammad G. Almeajel Alanazi, "Investor protection and the civil liability for defective disclosures in the Saudi securities market," *Doctor of Philosophy thesis, Faculty of Law, University of Wollongong*, 2012, http://ro.uow.edu.au/theses/3773.

In early January 2006, the CMA and other government agencies tried to rein in the rally. As had occurred throughout 2005, the CMA penalized three traders found guilty of manipulating share prices for eight listed companies on the Tadawul, fining them and barring them from working in joint stock companies for three years. Later that month, the CMA revised two rules to impose greater transparency and disclosure about transactions made by large investors in companies and corporate insiders (members of the board of directors or senior executives). On the following day, the CMA prohibited listed companies from transacting in shares of other joint stock companies unless their articles of incorporation allowed them to do so. Companies for which this was not the case had three months to unwind these transactions, although the CMA lacked the power to sanction companies that did not comply.

These directives set the stage for increased selling pressure on the market. The penalized traders and companies were prohibited from *buying* shares—but they could still sell.

Throughout February, the CMA continued to try to restrain stock prices. It increased the tick size from SAR 0.25 to SAR 1.0, due to increased stock prices.[26] It investigated and barred additional traders who had been pumping up stock prices. On February 23, the CMA reduced the daily stock price fluctuation limit[27] from 10% to 5%, a change that was scheduled to take effect on February 25, the day that the TASI reached 20,634.86, its peak. And then the market crashed (see **Exhibit 4** for the TASI's behavior over the week starting February 22, 2006).

The CMA's market fluctuation limit (circuit breaker) cut was not alone in starting the crash. Some blamed the cancellation of a popular after-work trading advisory show; others the lack of institutional investors and the absence of short-sellers, both of which might have restrained the crash.[28] But once prices started to fall, the circuit breaker would act as a floor, pausing trading at prices below the cut-off for a period after the market fell by the stipulated amount. In the interim, spooked traders would line up their sell orders in hopes of getting through once the market re-opened and before the limit was breached and trading was suspended again. Without short-sellers or sophisticated institutional investors, there was little to stabilize the market. By March, the TASI had dropped to 15,000, and to a low of 7,500 at the end of December.[29]

SAMA played a crucial role at this point. Mutual funds were besieged by redemption requests from their investors, and faced selling into a sinking market. To relieve the pressure on the market and the funds, SAMA invested in the funds so they could meet the redemption orders without further downward pressure on the markets.

Responding to the Crash: The Role of the CMA and Other Causes

On May 12, 2006, Dr. Abdulrahman Al-Tuwaijri was appointed chairman of the CMA, replacing Jammaz Al-Suhaimi, who had held the position since the agency's establishment. In addition, the CMA was given a strengthened mandate to reform the market.[30] Under Mr. Al-Suhaimi, the agency had

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[26] Saudi Stock Exchange "Tadawul", (2006). *Announcement Regarding Changing the Tick Size,* http://www.tadawul.com.sa/wps/portal/!ut/p/c0/04_SB8K8xLLM9MSSzPy8xBz9CP0os3g_AewIE8TIwN_D38LA09vV7NQP8cQQ3dnA_3gxCL9gmxHRQCtDLXm/?x=1&PRESS_REL_NO=601, cited in AlKhaldi, p. 139.

[27] Stock price fluctuation limits, sometimes referred to as "circuit limits" or "circuit breakers," most commonly operate by acting as a floor and halting trading in a security at a price below a pre-set limit (e.g., 10% below the previous session's closing price) for a set period of time. Trades at prices above that limit, if there are any, can occur. Stock price fluctuation limits are designed to reduce volatility and deter speculators, and can be set for both price drops and gains. Improperly implemented, however, they can exacerbate those problems.

[28] Yang.

[29] Mohamed A. Ramady, "Saudi Stock Market 2006: A Turbulent Year," *Arab News*, January 1, 2007.

[30] Robin Wigglesworth and Camilla Hall "Saudis hope bourse reform will lure investors," *Financial Times*, January 16, 2012.

attempted to restrain first the boom and then the crash, but many observers believed the CMA had been too cautious, with at least one noting, "The CMA feared possible negative consequences from any tough action that might be taken."[31] With the benefit of more than ten years' hindsight, it was easy to identify the CMA's missteps. It would be inaccurate, however, to ascribe the 2006 crash solely to that regulatory agency's actions, as was confirmed by subsequent reports.

To review, after the IMF report at the end of December 2005, the CMA had introduced several efforts to restrain the rally, which included:

- Barring market manipulators from buying stock. This move prevented a few individuals from artificially inflating stock prices, but it did not prevent them from selling.
- Preventing listed companies from trading shares of other joint stock companies unless their bylaws permitted trading in stocks. This rule would prevent ongoing abuses, but the requirement that unlawful holdings must be unwound in three months could have had unintended consequences. If companies had sold their positions in an orderly manner starting in January 2006, the rally might have faltered, but if they had sold all at once at the end of the period, the action could have caused or intensified a crash.
- Increasing the tick size, which had minimal impact, given the market's heights.
- Reducing the fluctuation limit (circuit breaker) to 5%. While this may have appeared to cause the crash, the connection may be more circumstantial than causal.

CMA had also investigated other approaches to slow the rally, which had not come to fruition. In early 2005, the CMA had attempted to create a program to help soak up the liquidity in the market. It sought to create a program through which citizens could pledge some of their income to a fund that would buy stocks held in the Public Investment Fund (PIF), Saudi's sovereign wealth fund. These stocks would be offered at a discount and held in a three-year lock-up. Unfortunately, disagreements among SAMA, the CMA, and PIF regarding the amount of the discount and its allocation across Saudis of different wealth levels tripped up the plan.

While the crash was in progress, the CMA reversed its earlier decisions, taking the tick size back to SAR 0.25 and increasing the circuit breaker to 10%. Other branches of the government sought to instill confidence among the general public in the stock market. The Supreme Economic Council expressed its confidence in the strength of the Kingdom's economy. The Minister of Finance encouraged the private sector to "accelerate their investments for the good of the economy."[32]

Later in March, the CMA announced that non-Saudi residents would be allowed to invest in the stock market directly, not through investment funds. The TASI continued to fall, however, and, as one observer commented, "many investors questioned the level of market transparency."[33] Shortly thereafter the CMA announced that the par value of a stock would fall from SAR 50 to SAR 10, and the stocks of listed companies would split five to one. Additional traders were sanctioned for their market manipulation activities.

A commenter said, "On the whole, the government, the media, and the traders themselves share responsibility for the crash. Some decisions came late, or not at all. At the same time, the investing public was largely unaware of investing protocol and strategy… [and]… made decisions based on informal

[31] AlKhaldi, p. 137.
[32] AlKhaldi, p. 140.
[33] AlKhaldi, p. 140.

recommendations and media reports. This same media indirectly encouraged continued speculation…."[34] Although the most severe, Saudi was not alone, as most of the region experienced deep declines in stock market valuations at this time (see **Exhibit 5).**

The Chinese Experience

Saudi Arabia's experience with market crashes was not unique. Throughout history, other countries around the world had suffered price crashes in assets ranging from tulips (in Holland) to real estate, and railroads to stocks. (See **Exhibit 6** for notable stock market crashes over the past 60 years.) Starting in 2015, China experienced a series of stock market crashes similar to Saudi's 2006 crash. After record performance in the first half of 2015, China's main board index, the Shanghai composite, lost 30% of its value in less than a month between mid-June and mid-July of that year. Regulators tried to arrest the crash by preventing large shareholders from selling, outlawing short sales, and punishing people accused of market manipulation. None of these approaches worked, as the market lost additional value in August of 2015 and more in January and June of 2016.[35]

In an effort to reduce volatility, the Chinese regulator introduced a circuit breaker mechanism in early 2016. This worked as follows: if the market rose or fell by more than 5%, trading was halted for 15 minutes. If it dropped by a total of 7% after the market reopened, (including the initial 5% drop), trading halted for the rest of the day. The rule created panic selling and had to be withdrawn.

After consideration, the circuit breaker's limits were determined to be too narrow. As in the Kingdom's 2006 crash, traders locked in sell orders as soon as prices fell, hoping to exit the market either before trading was halted or as soon as it reopened. The S&P 500 in the U.S., by comparison, had circuit breakers at 7%, 13%, and 20% thresholds. The first two limits triggered 15 minute pauses; the last would stop trading for the day. Emerging market stock exchanges, with greater volatility due to fewer listed companies, smaller floats, and less sophisticated investors, would likely need higher limits to avoid creating panic selling.[36]

Since the Crash

The 2006 crash left a trail of destruction. According to news reports, bankrupted retail traders committed suicide, fell ill due to stress, lost their possessions, and in some cases, resorted to begging.[37] Those who were fortunate and/or informed enough to exit before the crash made significant gains. In the aftermath of the crash, a number of issues needed to be addressed. These included transparency and reporting requirements, the need for the CMA to have enforcement as well as regulatory power, the need for a larger base of institutional investors in the market, and the need to increase the number of companies and their floats in the market.

Even before the crash, an academic study had determined that the Saudi capital market was not efficient; that is, all information that would influence a company's value was not reflected in the price. In fact, accessing information about listed companies was difficult, as research was limited and noncompliance with disclosure rules lightly punished. Traders could influence stock prices, due to small stock floats for listed companies. Moreover, the small number of listed companies—77 in 2005; 86 in 2006—was

[34] Abdulrahman A. Al-Twaijry, "Saudi Stock Market Historical View and Crisis Effect," *Journal Human Sciences, 2007*, 34 (1).
[35] Andrew Stevens, "China's stock watchdog admits market problems," *CNN Money*, January 18, 2016, http://money.cnn.com/2016/01/18/investing/china-stock-market-watchdog-criticism/, "China crashes its stock market with circuit-breakers meant to save it," *The Economist*, Jan. 7, 2016; Sara Hsu, "China's Stock Market Crash One Year Later," *Forbes.com*, July 13, 2016.
[36] "China crashes its stock market with circuit-breakers meant to save it," *The Economist*, Jan. 7, 2016.
[37] Ramady.

inadequate.[38] Later studies agreed with this finding and emphasized the importance of transparency and the provision of adequate information. They called for increased institutional ownership, reduced government ownership of listed companies, encouragement of short sales, increased numbers of analysts and brokerage firms that published their studies, and the adoption of international standards.[39] In 2012, the CMA announced the adoption of International Financial Reporting Standards, a set of accounting and disclosure rules developed by the International Accounting Standards Board designed to be used as a global standard for publicly-traded companies. Listed companies were to have made the transition by January 1, 2017, and all other companies by the start of 2018.[40]

The crash also had an impact on unlisted companies. Many had seen their public customers reduce spending in light of the sudden uncertainty. Any that had plans to go public were forced to shelve them for several months. Finally, in the environment of widespread uncertainty that emerged in the wake of the crash, economic growth stalled and new investment all but evaporated.

What to do next?

The CMA team knew that it had made progress—and that it had much to do. The Authority had improved disclosure rules and, in 2007, started issuing fines to companies that did not provide their reports on time. But was the fine large enough to get the attention of corporate leaders? The CMA had also initiated an intensive investor education program on its website, in hopes of raising the awareness of retail investors. Foreign investment groups could now trade in the market, a change the CMA hoped would provide additional stability.

There were still several other issues that had not been fully resolved by 2017. The stocks that had brought down the market in 2006 were the small issues in which a few traders could buy a large position and manipulate the price. Despite the many reforms that the CMA had enacted, this structural problem remained. While the CMA had taken important steps to increase disclosure and transparency and enforce regulations, another effective means of stabilizing the public markets might involve supporting entrepreneurs and lowering the barriers to new business formation that the World Bank had identified in its Ease of Doing Business surveys. Encouraging large private companies to list would also increase the number of companies in the public markets and improve stability. A new entry to the Saudi market, global private equity firms, might provide an avenue for some of the big family businesses to list on the public markets.

The CMA's recent decision to open a new secondary board, the "Parallel Market," that was specifically designed to ease the regulatory burden of going public for small-and medium-sized entities (SMEs), represented an important step in the right direction.[41] The more relaxed regulations included just one year of audited financials. Sophisticated investors would need to research the companies on the Parallel Market

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[38] Saudi Chamber of Commerce in Riyadh, "Explore to what Extend the Efficiency of the Local Stock Market and its Role in supporting the National Economy," 2005, p. 24, cited in AlKhaldi, p. 142.

[39] Abdullah I. Ashikh, (2012). *Testing the Weak-Form of Efficient Market Hypothesis and the Day-Of-The-Week Effect in Saudi Stock Exchange: Linear Approach*, Int'l Rev. Bus. Res. Papers, 8, 27, 48; Batool Kasim Asiri and Hamad Alzeera, (2013). *Is the Saudi Stock Market Efficient? A Case of Weak-Form Efficiency*, Res. J. Fin. & Acct., 4, 35, 41. In this study, four tests are applied: Dicky-Fuller unit root, Pearson correlation coefficient, Durbin-Watson (autocorrelation), and Wald-Wolfowitz runs-tests. Jasim Al-Ajmi, and J. H. Kim (2012). *Are Gulf Stock Markets Efficient? Evidence from New Multiple Variance Ratio Tests*, Applied Economics, 44, 1737, 1746. Fouad Jamaani and Eduardo Roca, (2014). *Are the Regional Gulf Stock Markets Weak-Form Efficient as Single Stock Markets and as a Regional Stock Market?*, Res. Int'l Bus. & Fin., 33, 221, 244; cited in AlKhaldi, p. 143.

[40] Saudi Capital Markets Authority website, http://www.cma.org.sa/En/Pages/IFRS.aspx

[41] "OnPoint/ A legal update from Dechert," January 2017, https://info.dechert.com/10/7897/january-2017/saudi-arabia-sets-up-new-secondary-listing-market-(the-parallel-market)(1).asp?sid=352a27fa-b06e-45dd-a14e-709835169197#

and decide whether the risk and reward were in line. Additionally, if a certain sector on the second board became the target of speculation, trading could be restrained without affecting activity on the main board.

With the recently adopted IPO pricing approach of book building, the issues around under-pricing could be addressed. Companies could raise capital more closely aligned to their value and needs, reducing the frenzied day-of-issue trading that had occurred previously.

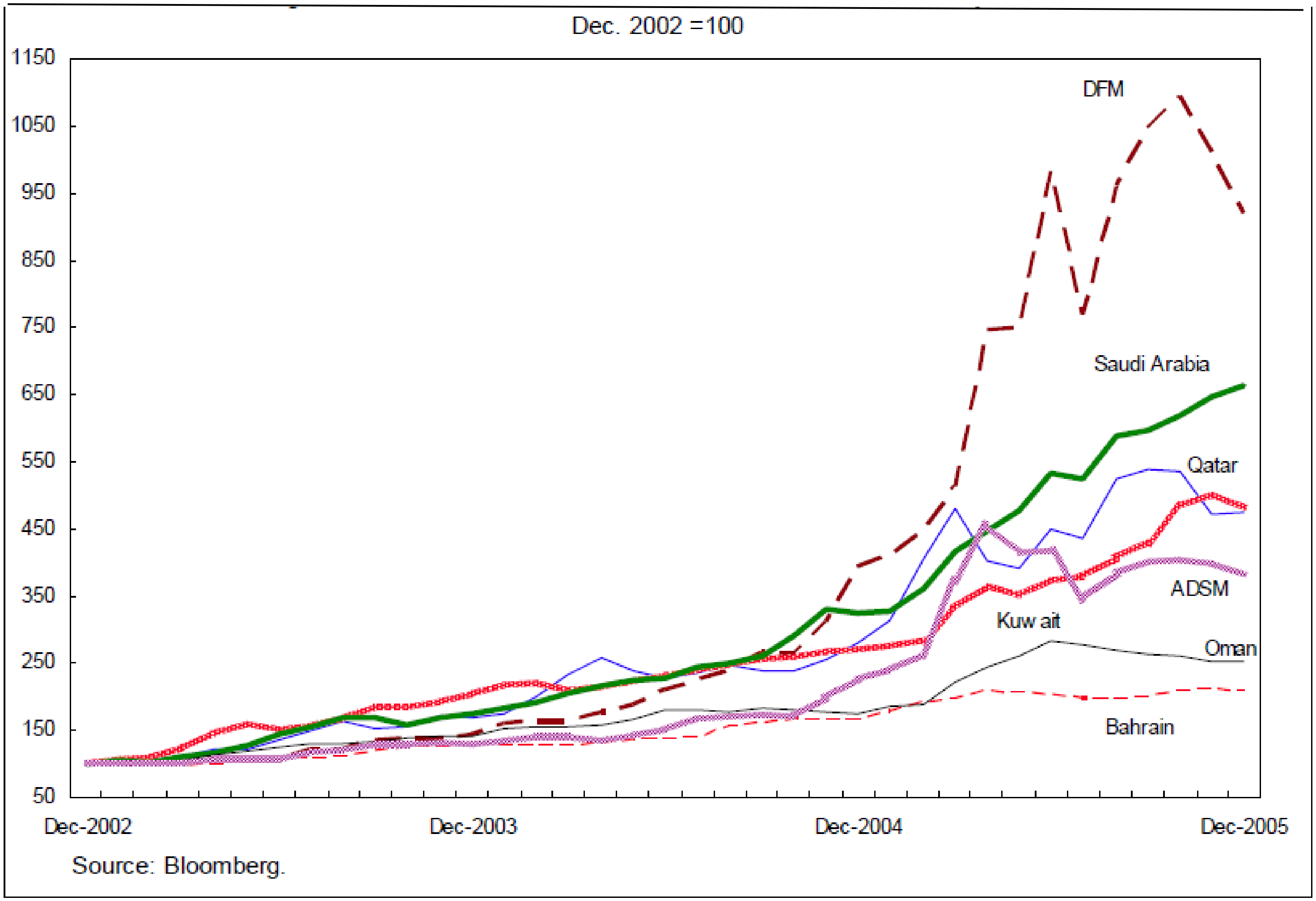
Other challenges included the need to increase the assets under management of the major investors to move the market away from its reliance on retail investors. Increasing transparency and disclosure was an ongoing project as well.

The Parallel Market for Saudi Arabian SMEs offered the potential to solve many of the problems that contributed to the crash of 2006. If the new board operated as hoped, it would create an important path for young companies to list and would help boost entrepreneurship in the kingdom, which was part of the Vision 2030 plan. But second boards had their own set of challenges, including striking the balance between informing investors of risks and scaring them off. How could the CMA both increase the number of listed companies and ensure that they were all of high quality? How else might the CMA assist in stabilizing the markets and helping the economy grow?

Exhibit 1: TASI from July 2004 to January 2007

Source: Tadawul data from www.tradingeconomics.com.

Exhibit 2: Performance of GCC Stock Price Indices, 2003 – February 2005.



Note: ADSM = Abu Dhabi Securities Market; DFM = Dubai Financial Market.
Source: Bloomberg, cited in Al-Hassan, p. 7.

Exhibit 3: Number of IPOs in GCC Markets, 2001-H1 2006

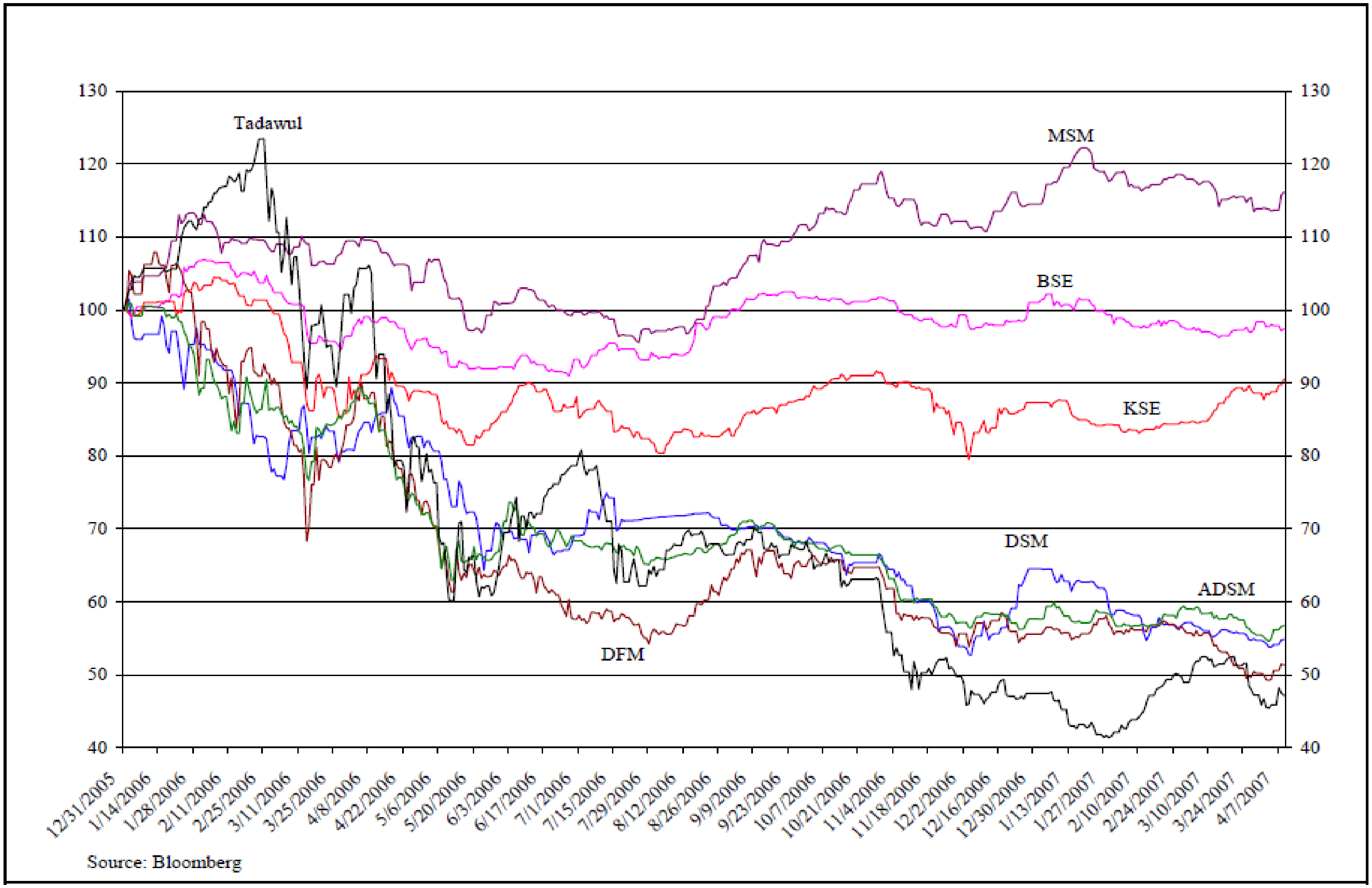
	2001	2002	2003	2004	2005	H1 2006
Bahrain					**3**	2
Kuwait			2	4	**2**	1
Qatar		2	3		**3**	1
Oman	4	2		2	**4**	
Saudi Arabia			1	2	**5**	3
U.A.E.		1		4	**7**	1
Total	**4**	**5**	**6**	**12**	**24**	**8**

Source: The relevant stock markets, assembled in Al-Hassan et al., p. 7.

Exhibit 4: Market Movement during the week of Feb. 23, 2006

Source: Tadawul data from www.tradingeconomics.com.

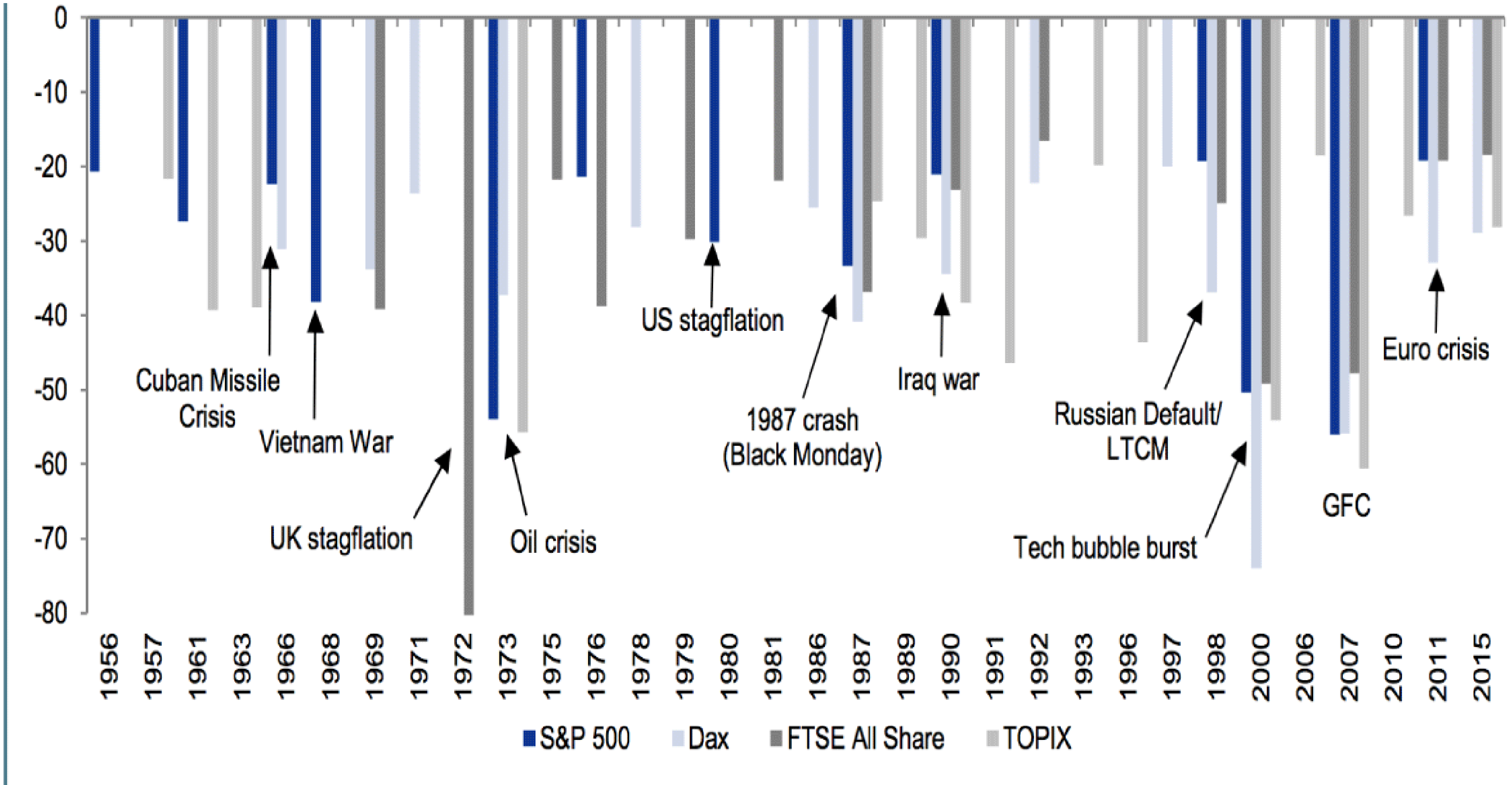
Exhibit 5: GCC Stock Markets January 2006 – April 15, 2007; Jan. 2006 = 100



Note: ADSM = Abu Dhabi Securities Market; DFM = Dubai Financial Market; KSE=Kuwait Stock Exchange; BSE=Bahrain Stock Exchange; DSM=Doha Securities Market (Qatar); MSM=Muscat Securities Market (Oman)

Source: Bloomberg, cited in Al-Hassan, p. 8.

Exhibit 6: Selected Crashes of the Past 60 Years



Source: Datastream, Bloomberg, Goldman Sachs Global Investment Research.

Source: Bob Bryan, "Here's Every Stock Market Crash in the Past 60 Years," *BusinessInsider*, June 6, 2016, www.businessinsider.com.

Note: Real total return drawdowns of more than 20% for different equity markets (S&P 500 since 1960, TOPIX and FTSE All Share since 1952, DAX since 1965).