Chapter 2

High frequency trading and dark pools

2.1 The committee's ASIC oversight process provides—among other things—an opportunity to discuss publicly the regulator's views on matters of rapidly evolving domestic and global concern. At the December 2012 public hearing, those issues related to high frequency trading (HFT) and dark pools.

2.2 HFT uses sophisticated technological tools and computer algorithms to trade securities on a rapid basis. The buyer places a large block of orders, many of which are immediately withdrawn. The intent is to make a profit on small movements in the share price. HFT is generally conducted on the open stock exchange. The key for those operating an HFT strategy is to use faster technology than their competitors to get the best places in line when quoting to trade and to avoid trading when they choose.[1]

2.3 A dark market, or a 'dark pool', is where clients' orders are matched on a computer away from the public market. The trades tend to be smaller and more frequent. This form of trading has the advantage for buyers of very low brokerage fees and the ability to trade way from the scrutiny of the public market. Trading away from the public market means that high frequency traders cannot use the trading information to their advantage.

2.4 This chapter presents and considers the evidence provided at the public hearing by the Australian Securities Exchange (ASX) and the Australian Securities and Investments Commission (ASIC) on the need to regulate HFT and dark pools. Dark pools and HFT are a key area of international concern: they are a top priority for the International Organization of Securities Commissions (IOSCO).[2]

2.5 The questions of whether and how to regulate HFT and dark pools have been the focus of considerable public debate in recent times:

- ASIC and the ASX have publicly stated their concerns and positions on the need to regulate these types of trading;
    - both reiterated their views to the committee at the public hearing in December 2012;

---

1 See Larry Harris, 'Stop the high frequency arms race', *FT Trading Room*, 27 December 2012, http://www.ft.com/intl/cms/s/0/618c60de-4b80-11e2-88b5-00144feab49a.html#axzz2HcGOlNxU (accessed 10 January 2013).

2 Mr Greg Medcraft, Chairman, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 13.

- in November 2012, the government announced new rules on HFT and dark pools which are being introduced over the next 18 months;

- in December 2012, the Financial Services Council released a commissioned report by Baseline Capital focusing on issues related to technological change, and HFT and dark pools in particular; and
- Treasury is currently examining the licensing of dark pools and whether the current regime is adequate. It released an options paper in November 2012 and submissions closed on 1 February 2013.[3]

The size of high frequency and dark pool trading

2.6 In a 'lit' market, the orders are displayed on order books and are therefore pre trade transparent. In a dark pool, orders are not pre trade transparent.[4] The ASX estimated that high frequency trading accounts for around 25 per cent of the value of activity on Australian markets (lit and unlit). The value of activity on unlit or dark markets has been 'as high as about 40 per cent but probably averages in the range of 25 to 30 per cent'. The ASX noted that this level is well below that in the United States, which can be above 50 per cent.[5]

Current rules on dark pool trading

2.7 The ASX noted that there are currently some rules relating to dark pool trading. Mr Peter Hiom, Deputy Chief Executive Officer of the Exchange, explained that the rules:

> …relate to the size of the transaction. Over $1 million, there are very few rules that bind you. It can be between two consenting adults and it can be at any price. Once you get below $1 million then you have to do that transaction between the bid-offer spread in the lit market. The new rules around meaningful price improvement will require that to be meaningfully inside. So you cannot transact off-market at the same price as on-market below $1 million. Those rules are there today and they are going to be tightened up by that price improvement requirement.[6]

---

3 Treasury, *Australia's financial market regime: Addressing market evolution*, http://www.treasury.gov.au/ConsultationsandReviews/Submissions/2012/Australias-financial-market-regime-Addressing-market-evolution (accessed 10 January 2013).

4 See 'Glossary of useful terms linked to markets in financial instruments', http://ec.europa.eu/internal_market/securities/docs/glossary_en.pdf (accessed 12 January 2013).

5 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 7.

6 Mr Peter Hiom, Deputy Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 8.

2.8 He added that while there may be an argument that there is a social benefit in all investors having access to a public price, there is a 'judgment call' in terms of market efficiency for transactions over a certain size. He explained that this is:

> …because the act of those larger transactions being put into the market could actually be destabilising if that transaction is too large. You allow those transactions to be executed away. Those rules have been in place for many years. It is just the introduction of technology that has allowed these other execution mechanisms to thrive.[7]

New market integrity rules

2.9 On 20 November 2012, the government announced new market integrity rules to address risks emerging from developments in market structure, including growth in automated trading and the changing nature of dark liquidity. In a media release announcing the package, the Minister for Superannuation and Financial Services, the Hon. Bill Shorten MP, explained that the new rules provide for:

- direct control over trading algorithms, including 'kill switches' to immediately stop an algorithm if required;
- new extreme trading rules in cases of large price movements whereby there will be an immediate obligation on the market operators (Chi-X and the ASX) to enforce an extreme trading range for trade in securities;
- a requirement that dark pools offer meaningful price improvement over the lit market, with exemptions for block trades; and
- additional data reporting requirements to assist ASIC in performing market surveillance.[8]

2.10 The government announced that these obligations will come into force over a six to 18 month period: the extreme trading range rules applied for the ASX and Chi-X from November 2012; the meaningful price improvement rule will come into effect in June 2013; new market operator data reporting requirements will be introduced in November 2013; and kill switches in June 2014.[9]

2.11 ASIC Deputy Chairperson Ms Belinda Gibson gave the committee some context as to ASIC's involvement with these rules:

> …the first time we consulted on them was in late 2010. We had another consultation last year and we had always indicated that these were a

---

7 Mr Peter Hiom, Deputy Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 10.

8 The Hon. Bill Shorten, Minister for Superannuation and Financial Services, 'Investors to benefit from new rules on high frequency trading and dark pools', *Media Release*, 26 November 2012.

9 The Hon. Bill Shorten, Minister for Superannuation and Financial Services, 'Investors to benefit from new rules on high frequency trading and dark pools', *Media Release*, 26 November 2012.

> minimum. Since then we have become more concerned about these things, and IOSCO has become more concerned, so we said, 'Let's look again at how these things are working in our market and whether there is a need to do more.' It is not a given that there is a need to do more.[10]

ASIC's taskforces and options

2.12 Currently, ASIC has taskforces focussing on dark liquidity and high frequency trading. These taskforces are due to report to the government in March 2013. The Minister's media release announcing the new market integrity rules in November 2012 listed some options on HFT and dark liquidity that ASIC may suggest as part of its taskforces. In terms of dark liquidity, the media release stated the following options:

- whether the minimum order threshold for dark trading should be increased from $0;
- enhanced conflict management controls;
- rules for trade monitoring; and
- enhanced disclosure to clients.[11]

In terms of HFT, the media release flagged the possibility of:

- order to trade ratios;
- a minimum order size; and
- a review of tick sizes.[12]

2.13 ASIC Chairman Mr Greg Medcraft explained to the committee the Commission's general approach to considering HFT and dark pools:

> My view is that today we have been fairly pragmatic in our approach to both. We have said, 'Here are the big problems,' and we had those initial sets of rules. We are continuing to look at it here but also at what other regulators are doing elsewhere. We are taking a careful, pragmatic approach. We are all learning. We are still trying to work out the impacts on price formation in the market of both high frequency and dark pools. That is

---

10 Ms Belinda Gibson, Deputy Chairperson, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 36.

11 The Hon. Bill Shorten, Minister for Superannuation and Financial Services, 'ASIC dark liquidity and high frequency trading taskforces', *Media Release*, 26 November 2012, http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2012/078.htm&pageID=003&min=brs&Year=&DocType=. (accessed 31 January 2013).

12 A tick size refers to the minimum price movement of a trading instrument.

> why I do not think there is a simple solution. A solution will evolve with experience and research both here and globally.[13]

2.14 Ms Gibson told the committee:

> …the dark pool task force, or dark liquidity task force, has obtained a lot of information from the providers of the various venues. I think we continue to see about 25 per cent of the market is in dark liquidity venues, but that includes the ASX. There are now some 20 crossings markets and that also includes one or two other—ITG, Liquidnet—which are dark pools ordinarily. We are on track to issue our report in March…

2.15 The ASX was asked its view of these rules. Mr Funke Kupper responded:

> We think they are a very good start. They are some of the things we have been advocating, particularly the measure of meaningful price improvement, which we think is an important measure in relation to both high-frequency trading and dark pools. In addition, we welcome the fact that the task force that ASIC will put together will look at a number of other measures. We think some of those measures could work very well to put greater controls around markets, while we think others might be a little bit more dangerous. We will, of course, give all that input to ASIC and the minister over the next couple of months.
>
> I should say that these processes take an extraordinary amount of time in the way our markets work; therefore, we would like to think that, when the taskforce has done its job—March 2013 is the target date, if I am correct—ASIC and the minister can very quickly thereafter make decisions. Then we can implement the measures we think are necessary so as not to go through many more rounds of consultation, which tends to be the case in our market. We welcome the announcement and we welcome the task force.[14]

ASIC and the ASX's concerns with HFT

2.16 The committee took the opportunity to discuss with both ASIC and the ASX the concerns they have with HFT. ASIC told the committee that the order to trade ratios in Australia were not as high as in the United States. Ms Gibson explained that in Australia, the average of orders to trade is about nine to one compared to the 100 orders to one trade that can be made in the US. She added:

> The people we know to be high-frequency traders are slightly more than that, but only slightly. I do not think many of them are up as high as 20 to one. Whether that is a product of the fact that we have a cost recovery regime and we recover our supervision costs, or whether we recover the

---

13 Mr Greg Medcraft, Chairman, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 36.

14 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 7.

> cost of our IT by reference to the number of messages—that is an impost, and quite a possibility of why it is low.[15]

2.17 ASIC also explained to the committee that the attributes of buy-side institutional algorithms and high frequency trading algorithms are similar. Ms Gibson noted that this was not surprising given that the buy side have needed to develop algorithms that deal with HFT algorithms. She emphasised that the key is to examine the problematic conduct, such as pinging and quote stuffing.[16] Ms Gibson told the committee that ASIC's taskforce is already having an influence: 'some trading activities that in the course of our reviews we indicated we did not like seem to have stopped already'.[17]

2.18 In terms of monitoring high frequency trading, Mr Funke Kupper noted that there is an obvious common interest shared by the ASX and ASIC. He told the committee:

> Of course, sometimes you come across new developments that touch on both, and I think high-frequency trading is one of those examples where the behaviour, if considered detrimental to the markets, can affect the fair, orderly and transparent nature of the market as well as market integrity. These are the kinds of things that we need to work on very closely together.[18]

2.19 The ASX recognised ASIC's lead role in the debate on high-frequency trading. However, it also noted that the ASX is a 'very active contributor' in this debate and has had 'quite a few discussions with ASIC'. It emphasised that the Exchange takes market integrity issues 'very seriously' and it will work cooperatively with ASIC to ensure that the best controls are in place.[19]

ASIC and the ASX's concerns with and approach to dark liquidity

2.20 ASIC has previously outlined its concerns with dark pool trading to the committee. In an answer to a question on notice given to the committee in July last year, ASIC stated that it is concerned that:

---

15 Ms Belinda Gibson, Deputy Chair, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 36.

16 Quote stuffing is where a bidder quickly enters and withdraws large orders to attempt to flood the market with quotes and cause competitors to lose their competitive edge in high frequency trading.

17 Ms Belinda Gibson, Deputy Chairperson, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 36.

18 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 3.

19 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 3.

> …if investor order flow in our market continues to migrate into the dark, it can create material negative externalities for the wider market by diverting liquidity away from pre-trade transparent venues, impairing efficient price formation, increasing transaction costs and allowing dark orders to jump the time-priority queue.[20]

2.21 In evidence to the committee, ASIC commented on some of its observations of the nature and the effect of dark pools in Australia. Ms Gibson noted that ASIC had seen some of the disclosures to clients of the broking firms about what is in their dark pool. She described the nature of these activities in the dark pool as 'less than optimal in terms of the presence of high-frequency trading, as an example, in terms of the existence of their proprietary desks in that pool'.[21] Ms Gibson also told the committee that ASIC is continuing to do research on whether the level of trading in the dark pool is having an effect on the lit market. She noted that ASIC is looking for evidence of this in the top 200 publicly listed companies.[22]

2.22 The committee asked the ASX to explain the danger to the investor if more trade moves off the ASX and into dark pools. Mr Funke Kupper identified implications for both the transparency of information and the efficiency of the lit market. As he told the committee:

> if your transactions do not get executed on a lit market, do you know under what…terms those get executed—both the commercial terms and the rules with which they get executed? What is the mechanism by which transactions get prioritised or matched, if you will, away from the exchange?
>
> …the most efficient marketplace is the one marketplace where everybody gets together to trade. It is generally true for markets, and it is true for financial markets as well. The moment you start to remove liquidity from that one market, that market becomes less efficient, and over time the spreads will go up. He estimated that, if 20 per cent of liquidity gets removed from the lit market, spreads will go up by up to one basis point. That does not sound like a lot, but it is about three times what we charge to trade. So one basis point is a lot in financial markets, because it gets multiplied by so many transactions. So it is both a transparency argument and an efficiency argument. It is one of the reasons we think the $25,000 threshold is significant, because it keeps the flow together, effectively.[23]

---

20 ASIC, answer to question on notice, 20 June 2012 (received 26 July 2012).

21 Ms Belinda Gibson, Deputy Chairperson, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 37.

22 Ms Belinda Gibson, Commissioner, Australian Securities and Investments Commission, *Committee Hansard*, 3 December 2012, p. 37.

23 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 7.

2.23 The committee also asked the ASX why a dark pool trade would not be an attractive proposition for a small investor if the investor could benefit from the broker's lower fee. Mr Funke Kupper gave the following response:

> The answer is that the saving relative to the total broker fee is small so, when you are talking about a materially lower fee, we can look at the most recent example, where I think nabtrade is charging $14.95 against ComSec $19.95. That is a $5 reduction, if I read the press correctly. We are half of 73c in all of that so, while theoretically this could passed on, I do not think it will make a difference.[24]

2.24 The ASX was then asked for its view as to why HFT is harmful. Mr Hiom explained that the concern is about the speed of trading that the new technology is providing. He told the committee:

> [it] is a question of degree. The debate in the market would be how fast is fast enough. I think that is where we are now in the process of working with ASIC in trying to understand where controls make sense. What used to be a fast trading market five years ago is a snail's pace, and what is now fast technology in two years' time will make it look slow.[25]

2.25 In this context, Mr Funke Kupper told the committee:

> What we are trying to work through with ASIC is how do we differentiate helpful high-frequency strategies, such as market makers whose liquidity we genuinely want in the marketplace, and how do we differentiate that from high-frequency trading behaviours that are more detrimental…That is not an easy thing to do, because they use very similar technology and algorithms.[26]

2.26 Mr Funke Kupper added that in terms of distinguishing between beneficial and predatory HFT strategies, one requirement could be a minimum order size. He explained:

> We know that higher frequency traders sometimes trade very small parcels, because what they try to do is be in front of the queue with very small parcels. So perhaps a minimum trade size where you have to trade a minimum of X-hundred dollars, for example, is a helpful way of differentiating more predatory behaviour from genuine investment behaviour.[27]

---

24 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 8.

25 Mr Peter Hiom, Deputy Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 10.

26 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 10.

27 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 11.

Limits on a dark pool trade

2.27 The ASX noted that ASIC had initially proposed a cap on dark pool trades of $50 000, while it had proposed a limit of $25 000. Mr Funke Kupper told the committee that some limit on a dark pool trade is needed to ensure the efficiency of the market:

> When you have an efficient financial market it is really important that the market that all investors have equal and unlimited access to is the most efficient central point where people trade. What we have seen overseas as a result of the absence of adequate measures is that a lot of trading has moved away from the one marketplace that everybody has access to on the same terms.[28]
>
> …
>
> The reason we advocated for the $25,000 threshold is to make sure we say in control of that as a regulator…but we feel strongly about it because it is important that the lit market remains relevant.[29]

'Meaningful price improvement'

2.28 As noted above, the government has announced that a 'meaningful price improvement' rule will be introduced in June 2013. The rule will be that the price improvement must be at least one tick or at the mid-price.

2.29 ASIC has stated publicly that it sees a meaningful price improvement rule as important. In an answer to a question on notice from the committee taken in June last year, ASIC stated:

> The core element of our proposal is that trades in the dark (other than large block trades) should offer meaningful price improvement referencing the national best bid-offer. That is, dark trading of this type can only occur if the price of the trade is a meaningful improvement on the price that would have otherwise been obtained if the trade had been executed in the lit market. We think that this provides the right incentives to ensure that limited amounts of this dark trading takes place.[30]

2.30 The ASX told the committee:

> Meaningful price improvement tends to be a popular measure. We support meaningful price improvement provided the word 'meaningful' is truly meaningful. The way it has been defined by the minister as one tick or at

---

28 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 3.

29 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 6.

30 ASIC, answer to question on notice, 20 June 2012 (received 26 July 2012).

> the mid is we think meaningful. We would not want to see that watered down.[31]

Committee view

2.31 The committee is particularly interested in developments in the nature, impact and regulation of HFT and dark pools. Notwithstanding the indications that these trends are neither as pronounced nor as harmful as in the United States, the committee strongly supports ASIC's work through its two taskforces. It awaits the findings of these taskforces with interest.

31 Mr Elmer Funke Kupper, Chief Executive Officer, Australian Securities Exchange, *Committee Hansard*, 3 December 2012, p. 4.