Bundeskartellamt

Offene Märkte
Fairer Wettbewerb

Fuel prices - market power, pricing and consequences

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Background paper

Bundeskartellamt

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I. Introduction

Developments in the oil sector are a recurrent subject of broad public debate. The main focus of the debate are the level of fuel prices and their frequent fluctuations, as well as alleged anti-competitive agreements between petrol stations.

The Bundeskartellamt has long-standing experience in cases concerning the oil sector. In addition to numerous merger control proceedings, the Bundeskartellamt has regularly examined anti-competitive market conduct and possible abuses of dominant positions by market participants in the fuel sector. The Bundeskartellamt has also conducted a general sector inquiry into the German fuel markets, with a specific focus on petrol station markets. The final report on the inquiry was published in May 2011 [1]. Since then, the debate has by no means abated but has, in fact, intensified.

Germany is no isolated case in this respect. Fuel markets are in the focus of competition authorities all over the world.[2] Several economic studies in various countries (such as the U.S., Canada and Australia) on competition processes in the fuel sector prove that there is also a strong academic interest in this sector.[3] The conditions on the German fuel markets, however, have not yet been subjected to detailed scientific analysis in economic studies.

A key finding of the sector inquiry which is also of great importance for the Bundeskartellamt's decision practice is that of a collectively dominant oligopoly on the German petrol station markets. This finding is not only based on a detailed analysis of the relevant market structures and the behavioural incentives these generate, but is also supported by an investigation of actual price setting behaviour (see no. 2 below). The sector inquiry also outlines possible interventionary measures within the current competition law framework that have in part already been adopted in individual proceedings (see no. 3 below). In addition, the findings of the sector inquiry and their discussion in the public and political debate have fo-

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[1] Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf .

[2] Cf. inter alia OECD, Competition Policy for Vertical Relations in Gasoline Retailing, 2008, available at http://www.oecd.org/dataoecd/1/22/43040511.pdf .

[3] Cf. for further details Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 126 ff.

cused the attention on further possible measures - modelled to some degree on international experience - outside the competition law framework (see no. 4 below). The sector inquiry's findings, their assessment and implications for competition law practice and competition policy thus raise numerous issues that require a more detailed debate, not least from a scientific angle (see no. 5 below).

II. Collective dominance on the German petrol station markets

Based on the results of the sector inquiry, the Bundeskartellamt proceeds on the assumption that the five companies BP/Aral, Conoco-Philips/Jet, ExxonMobil/Esso, Shell and Total, which are vertically integrated along the value-added chain, together form a dominant oligopoly within the meaning of § 19 (2) and (3) No. 2 GWB[4] on the German petrol station markets. The finding of collective dominance is based on a product market definition that assumes separate markets for diesel and petrol.[5] The Higher Regional Court in Düsseldorf[6] confirmed this product market definition. It also supported the Bundeskartellamt's geographic market definition which is based on the so-called 'accessibility model'[7]. According to this model, those petrol stations are included in a geographic market that can be reached by motorists within a certain travel time.[8]

However, in the appeal proceedings ensuing from the prohibition of the "*Total/OMV*" merger [9], the Düsseldorf Higher Regional Court did not support the Bundeskartellamt's finding of collective market dominance by the five leading vertically integrated suppliers operat-

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4 *Gesetz gegen Wettbewerbsbeschränkungen* (Act against Restraints of Competition) in the version of 15 July 2005 (*BGBl.* (Federal Law Gazette) I p. 2114, 2009 I p. 3850), last amended by Article 3 of the Act of 22 December 2010 (*BGBl*. I p. 2262).

5 Cf. Bundeskartellamt, Fuel Sector Inquiry, Interim Report of June 2009, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/09-242_Zwischenbericht_Kraftstoffe-E.pdf, p. 25 ff and Bundeskartellamt, decision of 29 April 2009, file reference, B8-175/08 *„Total/OMV“.*

6 Cf. Düsseldorf Higher Regional Court, decision of 04 August 2010, file reference, VI-2-Kart 6/09 (V) *"Total/OMV"*.

7 For further details on the accessibility model see Federal Office for Building and Regional Planning (*Bundesamt für Bauwesen und Raumordnung*), available at: http://www.bbr.bund.de/nn_21360/BBSR/DE/Raumbeobachtung/Komponenten/Erreichbarkeitsmodell/erreichbarkeitsmodell__node.html .

8 Cf. Bundeskartellamt, Fuel Sector Inquiry, Interim Report of June 2009, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/09-242_Zwischenbericht_Kraftstoffe-E.pdf, p. 27 ff.

9 Cf. Bundeskartellamt, decision of 29 April 2009, file reference, B8-175/08 *"Total/OMV"*.

ing on a national level. [10] Despite various structural factors which are recognized to indicate a high risk of parallel conduct in the form of implicit collusion, the court was of the opinion that the actual competitive situation on the market provided sufficient evidence of both internal competition between the five leading suppliers and effective external competition. In the Bundeskartellamt's view, the fuel sector inquiry has now provided further valuable qualitative and quantitative findings which rather support the assumption of market dominance than the thesis of effective competition in the petrol station market.

2.1 Qualitative analysis: Structural factors and incentives

In accordance with well-established economic findings, there are several structural parameters that make markets prone to implicit collusion as a form of collective dominance. Fuel markets are a prime example of such markets.[11] This is not only due to the strong market concentration and high barriers to market entry, but also, and in particular, due to the key characteristics of the products (homogeneity, low price elasticity) and the general market conditions (stable supply and demand conditions, frequent and relatively small transactions with a fragmented demand side, high market transparency). Other indicators are the symmetry between the leading suppliers, which is a result of the vertical integration and nationwide presence of the companies, their structural links and the fact that they interact on various (regional) markets (so-called 'multi market contacts').

On account of the structural factors indicated above, the Bundeskartellamt is of the opinion that the behavioural incentives in the market are such that permanent and stable parallel conduct is very likely. This view is also in line with the so-called 'Airtours criteria'[12] on which the Federal Court of Justice (BGH) refers to in its assessments[13]. Market transparency, for

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[10] Cf. Düsseldorf Higher Regional Court, decision of 04 August 2010, file reference, VI-2-Kart 6/09 (V) *"Total/OMV"*.

[11] On the economic background cf. inter alia Schwalbe, Zimmer, *Kartellrecht und Ökonomie*, 2006, p.251 ff., in particular also p.310; on a detailed description of the qualitative aspects of the findings of the sector inquiry see: Bundeskartellamt, Fuel Sector Inquiry, Interim Report of June 2009, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/09-242_Zwischenbericht_Kraftstoffe-E.pdf, p.33 ff., as well as Bundeskartellamt, Fuel Sector Inquiry, Final Report of May 2011, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 48 ff.

[12] Cf. European Court of First Instance, decision of 06.06.2002, file ref. T-342/99, *"Airtours/Kommision"* = WuW/E EU-R 559 ff.

[13] Cf. in particular BGH, decision of 11.11.2008, WuW/E DE-R 2451, 2457 – E.ON/Stadtwerke Eschwege; cf. as well: BGH, decision of 14.6.2010, WuW DE-R, 2905, 2913 - Phonak/GN Store.

example, is very high in fuel markets, along the entire value-added chain. In particular with regard to the fuel price, which is the key competition parameter and therefore the most likely focus of tacit collusion, it would seem almost impossible for a deviation from the established price to go unnoticed (and thus be profitable) because of the elaborate system of mutual monitoring which exists between the market players.[14]

The structure of the fuel markets provides the members of the dominant oligopoly with a vast potential for punishing deviations from the implicit collusion by individual members. Such punishment is made easier by the numerous structural links between the oligopoly members and the possibility to start local 'price wars' as a disciplinary measure.[15]

Moreover, there is hardly any external competitive pressure on the dominant oligopoly. In addition to the high barriers to market entry, this is owed to the fact that the smaller or independent petrol station operators usually lack both the incentive and the ability to exert effective competitive pressure on the oligopoly members. Most notably, they do not have their own refinery capacities and are therefore dependent on the oligopolists for their fuel supplies. This vertical dependence enables the oligopolists to punish price-undercutting by "free" petrol stations, which could otherwise destabilise the implicit collusion within the oligopoly.[16] As a consequence, incentives for competitive moves are extremely low and implicit collusion seems to be the more profitable strategy, also in the long term.

2.2 Quantitative analysis of the actual price setting behaviour

A main objective of the sector inquiry was to examine the actual price setting behaviour in the market in order to verify the structural findings described above. The quantitative analysis of price setting behaviour in four model regions in the period from 1.1.2007 to 30.7.2010 supports, in the Bundeskartellamt's view, the finding that there is a lack of efficient competition in the German petrol station markets.

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14 Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 61 ff.

15 Cf. ibid.

16 Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 62 ff.

The fuel markets examined are all characterised by distinctive cyclical price movements which consist of strong price increases of 5 Euro cent or more, and significantly less pronounced, but more frequent price decreases. When analysing these price patterns it has to be noted that such cyclicity in itself is *not* evidence of effective competition. Such cyclical price movements are usually analysed using the so-called 'Edgeworth price cycles' model. Accordingly, cyclical price movements such as can be found in the fuel sector can be - in addition to an excessive and over time relatively stable price level - also possible results of explicit or implicit collusion.[17] The decisive factor is what the companies expect from initiating a price increase at the bottom of a price cycle. Under effective competition, companies are likely to refrain from (unilateral) price increases because of the lost sales and reduced profits they risk with such an action. If their competitors do not follow suit with a price increase, or only to a significantly lower extent, the increase will remain unprofitable and fail. Conversely, if the market players find a mechanism by which suppliers can expect their competitors to always join in price increases and usually at the same rate, the risk of lost sales and profits is correspondingly lower. As a consequence, price increases are more frequent and more substantial and the average price over the course of a cycle is higher than would usually be the case. The more successful the market participants are in resolving the 'coordination problem' at the bottom of a price cycle, both with regard to the timing and the extent of the price increase, the greater the average price level will differ over the course of the cycle from that under effective competition.

In its quantitative analysis, the Bundeskartellamt has therefore paid special attention to the rounds of price increases that had been identified in the inquiry. It was able to determine several features in the price-setting patterns that seem to confirm the causal relations described above. These features concern the (geographic) scope of price increases, as well as the question of who generally initiates them, when and with what minimal or maximal time lag the other market players follow suit.[18]

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[17] Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 115 ff. with a detailed reference on relevant theoretical and empirical publications.

[18] For a detailed description of the relevant findings of the quantitative analysis cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 74 ff. as well as the extensive data appendix.

- As a rule, price increases occur in the entire petrol station network of the market players, whereas price reductions occur as selective measures initiated by individual petrol station operators.

- It seems that only two of the suppliers become active as 'price leaders' and initiators of price increases. The price increases that occurred during the period covered by the analysis were initiated predominantly by either Aral or Shell. In 90% of the cases the “follower”, i.e. either Aral or Shell - increased its price exactly three hours after the first increase and by the same amount.

- As regards the other members of the oligopoly[19], it is also possible to identify fixed intervals during which they increased their prices to the same level as the respective leader of the price increase.[20]

- As regards the timing of price increases, it is also possible to identify certain 'reliable' patterns, up to precise time frames. The most prominent pattern is that the price level of diesel and petrol is lower at the beginning of the week and increases, at easily identifiable points in time, over the course of the week until the most expensive day of the week, which is Friday.

It was also established that the price increase patterns over the course of the week were reflected in a corresponding increase of the gross margin[21]. It has to be noted, however, that it was not analysed to what extent the margin might be inflated when compared to a figure under effective competition. Nonetheless, due to the increase of the gross margin, any justification of the price increases by a corresponding increase in procurement costs can be ruled out.

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[19] One exception is Conoco-Phillips/Jet. As a rule, its fuel prices level off at exactly 1 Euro cent/litre below the fuel prices of the other members of the oligopoly. For more details see Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 31, 68.

[20] Cf. ibid., p. 27 ff., 74 ff.

[21] The gross margin is the difference, adjusted for taxes, between the (average) sales price at the petrol station and the (average) procurement costs per litre of fuel, which is calculated on the basis of publicly available price quotations (oil market report, OMR).

III. Options for intervention within the competition law framework

Contrary to the frequently expressed assumption by the public that companies agree on fuel prices, the Bundeskartellamt has found no evidence of illegal agreements on fuel prices between the oil companies.[22] There are no indications of 'agreements' between the relevant suppliers that go beyond a parallel conduct in the form of implicit collusion. Their collectively dominant position in the fuel markets does therefore not constitute a competition law violation in itself. The findings of the sector inquiry will be used, however, as a basis for the application of tools currently available under competition law; at the same time they raise the question of whether this can be regarded as sufficiently effective.

3.1 Merger control

The main tool to prevent competition conditions from worsening further is merger control.

In merger control proceedings affecting the fuel markets, the Bundeskartellamt will therefore maintain its strict approach taken in 2009 in the merger cases *„Total/OMV“*[23] and *„Shell/LOMO“*[24]. Against this background the Bundeskartellamt is hoping for swift clarification by the Federal Court of Justice, as the highest court, of the question whether there is indeed a dominant oligopoly in the German fuel markets. The Bundeskartellamt has lodged an appeal on points of law at the Federal Court of Justice against the decision of the Düsseldorf Higher Regional Court in the 'Total/OMV' case.

The creation or strengthening of a dominant position had already been expected in the two major merger cases *„Shell/DEA“*[25] and *„BP/E.ON (ARAL)“*[26] in 2001, which was why both where only cleared subject to commitments.

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[22] A case currently being prosecuted by the Canadian competition authority on account of explicit cartel agreements between petrol station operators is of interest in this respect. The operators are accused of having agreed on the timing and extent of price increases over the phone. During the agreement period there were strong cyclical price movements in the markets affected; for information on this case cf.: http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/00235.html ; cf. also: Erutku, Hildebrand, Conspiracy at the Pump, Journal of Law and Economics, 53 (2010), p. 223-237.

[23] Cf. Bundeskartellamt, decision of 29 April 2009, file reference, B8-175/08 *"Total/OMV"*.

[24] Cf. Bundeskartellamt, decision of 08 May 2009, file reference, B8-32/09 *"Shell/LOMO"*.

[25] Cf. Bundeskartellamt, decision of 19 December 2001, file reference, B8-120/01 *"Shell/DEA"*.

[26] Cf. Bundeskartellamt, decision of 19 December 2001, file reference, B8-130/01 *"BP/E.ON (ARAL)"*.

3.2 Control of company conduct

The control of company conduct is another option to safeguard competition in the fuel markets. Here, the main focus lies on the examination of vertical contractual relations and price setting strategies applied by the leading suppliers versus small and medium-sized competitors in their supply relationships.

The findings of the sector inquiry indicate that the so-called brand partnership agreements between oil companies and petrol station operators could result in a foreclosure of the markets. The investigations have shown that the members of the oligopoly are able to influence more than 80 per cent of the fuel sales and almost two thirds of all petrol stations via such agreements. Whether this can lead to market foreclosure depends, inter alia, on the duration of the agreements. These correlations need to be further investigated.[27]

Independent petrol station operators consistently point out predatory pricing strategies applied by vertically integrated petrol stations. Sales below cost price and price squeezes are two possible strategies that can result in lower prices in the short term. In the medium to long term, however, these strategies will squeeze small and medium-sized companies out of the market and lead to higher end consumer prices. The Bundeskartellamt has now developed a model to prove price squeezes in the oil sector. To examine whether the requirements of § 20 (4) Sentence 2 No. 3 GWB are fulfilled, the Bundeskartellamt has compiled a check list. Provided the requirements on the check list concerning power relations, competitive relations and supply relations are met, it will examine the price relationship in detail.[28]

3.3 Effectiveness of competition law tools

The *existing* collective dominance on the fuel markets can hardly be remedied with competition law tools. At best, with the help of abuse control it is possible to prevent dominant oil companies from applying abusive practices. However, abuse control can only prevent the competitive potential of non-integrated small and medium-sized suppliers from being fur-

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[27] Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 159 ff.

[28] Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 142 ff.

ther weakened. It cannot change the structural causes mentioned above for the low incentives of these market participants to engage in intense price competition.

The publication of the fuel sector inquiry has resulted in a public and political debate on whether the existing competition law tools are sufficient and the dominant oligopoly needs to be 'endured' or whether there is a need for other options of intervention beyond the possibilities of competition law.

IV. Options of intervention outside the existing competition law framework

In discussions on which alternative tools outside the existing competition law framework could be appropriate to counter-balance the anti-competitive effects of collective dominance on the fuel markets, two methods are mentioned most frequently: price regulation and divestiture.

4.1 Regulation of price-setting behaviour

In Austria and the federal state of Western Australia fuel prices are subject to state regulation. In both models, the regulation does not concern the level of prices but the timing of price changes.

The Austrian model is based on the fuel price regulation[29]which came into force in January 2011. Under the regulation, petrol station operators may only raise their prices once a day at 12.00 a.m.; price cuts, in contrast, are allowed at any time. In addition, a legislative process has been initiated by which petrol station operators will be obliged to promptly report all price changes to a public authority. The reported fuel prices will be collected in a database and made transparent to motorists.[30]

Since 2001, Western Australia has operated a so-called 'FuelWatch Programme'[31]. Under the '24 hour rule' petrol station operators are obliged to report prices for the next day by 2 p.m.

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[29] 484th Regulation of 30.12.2010 on the code of practice for petrol station operators concerning the timing of fuel price displays at petrol stations (*484. Verordnung Standesregeln für Tankstellenbetreiber über den Zeitpunkt der Preisauszeichnung für Treibstoffe bei Tankstellen vom 30.12.2010*).

[30] Cf. Bundeskartellamt, Fuel Sector Inquiry, Final Report May 2011 - Summary, available at: http://www.bundeskartellamt.de/wEnglisch/download/pdf/11-085_Abschlussbericht_SU_Kraftstoffe_Zusammenfassung-E.pdf, p. 134 ff with further references.

[31] Cf. ibid. , S. 135.

to the Department of Commerce. The reported fuel price is valid from 6 a.m. of the next day and is fixed for 24 hours. The Department of Commerce makes the fuel prices it has compiled accessible to motorists via various communication channels. So far, however, it has not been scientifically proved that the 'FuelWatch Programme' has led to a decrease in price levels.[32]

In view of the different market conditions in the German fuel markets, however, it is doubtful whether the models used in Austria and Western Australia could be applied to the German markets. Any model of state regulation would bring about a systemic change on the German fuel markets. This would not necessarily be a positive development per se. Rather, there is a risk that the wrong kind of regulation would not solve the problem but aggravate it.

4.2 Divestiture

Other than state regulation, which focuses on the market result, divestiture constitutes a massive intervention into market structures. The level of intervention is significantly higher than in the case of regulatory measures. The use of divestiture as a tool would therefore require the creation of a corresponding legal provision that would allow for such profound intervention into market structures. Both, horizontal as well as vertical divestitures would be conceivable.

Horizontal divestitures are an option at the petrol station level. The oil companies would then have to give up parts of their petrol station network. Horizontal divestitures can have deconcentration effects and thus be conducive to competition if the competition problems on the market are caused by the high concentration levels in the market. At the same time, it should be taken into account that horizontal divestitures can result in efficiency losses resulting from a loss in economies of scale. So far there have not been any horizontal divestitures on the petrol station markets.

In principle, vertical divestitures are possible wherever companies are active at several levels of the value-added chain. In a vertical divestiture, a company is no longer allowed to be simultaneously active at specific market levels. With regard to the oil sector, this could take the form of a separation of refinery capacities or access to such capacities from the petrol station business. A less invasive form of vertical divestiture would be a prohibition for verti-

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[32] Cf. ibid. , S. 135 ff.

cally integrated oil companies to operate any additional petrol stations. When considering vertical divestiture measures, the negative effects of market power have to be balanced against the benefits of efficiency gains.

US American experience with various divestiture provisions (so-called 'divorcement laws') for integrated oil companies[33] shows that their positive effects are very limited. Although the issue of a possible divestiture of the oil sector is being raised in the current debate in Germany, it is highly unlikely that such measures will actually be implemented.

[33] Such divestiture provisions include provisions that prohibit oil companies from further increasing an existing vertical integration by building or purchasing petrol stations. They do not affect the companies' structure. Some provisions have, on the other hand, led to an actual divestiture of integrated oil companies, for example by obliging them to sell their petrol station network.

V. Questions for discussion

- Is the evidence of collective dominance on the German petrol station markets sufficient? In what respect could this be challenged?

- In principle, what should be the reaction to the finding of collective dominance on the German petrol station markets? Should we accept it or is further intervention required?

- Is it necessary or are there plans to regulate the German petrol station markets? What are the pros and cons of the Austrian and Western Australian regulation models?

- What are the potential effects of price regulations, what are the relevant factors to be considered in this respect and how could they be prevented, where necessary, at an early stage?

- What are the potential effects of divestitures? In what respect would horizontal and vertical divestitures differ?

- Are there any further possibilities of intervention worthy of discussion?