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The EU Public Procurement Regime – Does It Work?

Has the Single Market for public procurement had the expected effects after six years in progress? The following article attempts to answer this question by first presenting alternative theoretical approaches to analysing the EU liberalisation of the public procurement market and then confronting these with the results of an empirical analysis.

The idea of the Single Market was to create a well-functioning market amongst the EU Member States by guaranteeing the free movement of goods, services, labour and capital. Having had its official start on the 1st of January 1993, the effects on trade and welfare should now – eight years later – have started to materialise as pointed out in the large-scale analysis of the Commission, the Atkins Report, which formed part of the so-called “Cost of non-Europe” project.¹ In this analysis, the public procurement market was emphasised as an area where national protectionism played a significant role and where a large potential for welfare gains from opening up the national markets existed. This should be seen in the light of the public procurement market’s representing approx. 11% of the GDP of the EU Member States, whilst the share of imports for public procurement is only approx. 1.4% of GDP as compared to 22% for the whole economy.²

The formal conditions were defined by a set of public procurement directives in the 1990s yet the question is to what extent real changes have taken place such that the expected economic effects have now materialised. For instance, a 1997 Commission assessment has the wording “ (...) public procurement liberalisation is acting as an effective catalyst for increased competition in public procurement markets”.³ The question may be whether this is, in fact, accurate.

The purpose of this article is to assess whether the EU public procurement directives have materialised into more cross-border trade and lower prices and thus whether the 1988 expectations of the Commission have been met. Through the use of alternative theories and empirical studies with the support

of an up-to-date analysis on the basis of EU trade figures, this question will be scrutinised.

At EU level the general public procurement rules originate from the EC Treaty, where article 12 prohibits discrimination on grounds of nationality. Articles 28 through 30 prohibit quantitative restrictions and measures having an equivalent effect while articles 43 through 55 ensure the right of free establishment and free exchange of services.⁴ These general rules have been completed by a set of directives, which in particular concern the procedural aspects.

The public procurement directives are the works directive, the services directive, the supplies directive, the utilities directive and two remedies directives.⁵ Even though the EU already had directives for works and supplies in 1971 and 1977 respectively, the

¹ Commission of the European Communities: The Cost of Non-Europe, in: Public Sector Procurement. Research on the Cost of Non-Europe, Basic Findings, Vol.5, Luxembourg 1988.

² Commission of the European Communities: Public Procurement: Commission Communication Outlines Policy Priorities. Direction General XV, Brussels 1999, [Http://europa.eu.int/comm/internal_market/en/publproc/comm/pubcomm.htm](http://europa.eu.int/comm/internal_market/en/publproc/comm/pubcomm.htm)

³ Commission of the European Communities: Special Sectoral Report No. 1: Public Procurement. Directorate General XV, Brussels 1997, [Http://europa.eu.int/comm/internal_market/en/publproc/sector/pubrep.htm](http://europa.eu.int/comm/internal_market/en/publproc/sector/pubrep.htm)

⁴ References in this paper are made to articles of the Treaty as it stood on 1 May 1999.

⁵ Council Directive 93/36/EEC of 14 June 1993 coordinating procedures for the award of public supply contracts; Council Directive 93/38/EEC of 14 June 1993 coordinating the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors; Council Directive 93/37/EEC of 14 June 1993 concerning the coordination of procedures for the award of public works contracts; Council Directive 92/50/EEC of 18 June 1992 relating to the coordination of procedures for the award of service contracts; Council Directive 89/665/EEC of 21 December 1989 on the coordination of the laws, regulations and administrative provisions relating to the application of review procedures to the award of public supply and public works contracts; Council Directive 92/13/EEC of 25 February 1992 coordinating the laws, regulations and administrative provisions relating to the application of Community rules on the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors.

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widespread notion is that no real basis for a well-functioning Single Market for public procurement across the EU Member States existed before the 1985 Commission White Paper on the Single Market.⁶ As a result of the preparations for the Single Market, the set of public procurement rules was extended considerably, partly with the entirely new utilities directive, partly with an amended version of the supplies directive, and partly with the two remedies directives from 1989 and 1992. Apart from the measures affecting purchase of goods, a services directive was introduced and the works directive was amended. Following the changes in the GATT/WTO rules resulting from the Uruguay Round, the EU made some minor amendments to the public procurement directives in 1997, but the EU has today had largely unchanged public procurement rules over a seven-year period.

The public authorities (government, regional and local public bodies) can use five different kinds of procurement procedures:

- open procedure*, where all interested suppliers may submit tenders;
- restricted procedure*, where only invited suppliers may submit tenders;
- accelerated procedure*, which resembles restricted procedure, but with much shorter deadlines (three to four weeks instead of 11) and which can only be used in case of special needs for speedy acquisition;
- negotiated procedure*, where conditions of the agreements are negotiated with one or several potential suppliers and where the procedure can be used both with and without prior publication; this procedure can only be used under special circumstances, as it gravely limits competition;
- qualification procedure*, which is used under the utilities directive and where suppliers can become pre-qualified if they fulfil certain objective criteria.

The public authority's choice of supplier must rest on one of two published award criteria:

- lowest price*, or
- the most economically advantageous tender*, where the tender material specifies what attributes apart from price (for instance quality and service) will be given priority.

Public tenders must be published through the Official Journal if their projected value exceeds certain threshold values, which depend on the kind of public authority in question (government, county, municipality) and for utilities which type in question (water,

gas, telecom, etc.) The aims of the EU directives are, firstly, to avoid discrimination on grounds of nationality, and secondly, to ensure transparency by requiring publication in the Official Journal and the dissemination of information through Tenders Electronic Daily (TED). By applying these means, a more intense competition ensuring a more effective allocation of resources is expected.

We shall now present a set of different theoretical approaches capable of analysing the expected effects of the liberalisation of the public procurement market. First, an analysis based on international trade and integration theory is presented. Second, an application of that theory with focus on the influence of the public market share on a specific product. The third perspective focuses on the relation between international trade and direct investment, while a final fourth proposal concentrates more specifically on buying behaviour and incomplete contracts.

Trade and Integration Theory

The analyses of the Single Market, as set forth by Emerson et al., are based primarily on theories of international trade, including economic integration theory.⁷ Furthermore, discriminatory national procurement policy is conceived of as a barrier between the EU Member States. This, in turn, distorts the price structure, reduces imports, and has dampening effects on competition, thus leading to national market concentration and poor exploitation of economies of scale. In addition, the supply of differentiated product variants is reduced. All in all, the result will be a sub-optimal allocation of resources. Improved market transparency through tighter public procurement rules will therefore contribute to breaking down barriers, both according to traditional trade theory and newer trade theory with emphasis on economies of scale and product differentiation, which, subsequently, will lead to lower prices, improved exploitation of economies of scale, and an increasing supply of differentiated product variants. All these conditions indicate an improved exploitation of resources and thus improved welfare.

There is a possibility that the EU rules both *de jure* and *de facto* can have discriminatory effects vis-à-vis

⁶ P. F. Clark, E. M. F. Temple: Public Procurement Policy, London 1994, Longman; Commission of the European Communities: Special Sectoral Report No. 1: Public Procurement, Directorate General XV, Brussels 1997.

⁷ M. Emerson et al.: The Economics of 1992: The EC Commission's Assessment of the Economic Effects of Completing the Internal Market, Oxford 1988, Oxford University Press.

third countries.⁸ This implies that the welfare effects are less clear-cut according to economic integration theory. If the cost-effective producers are in third countries, and are discriminated against, the result will be both trade creation and trade diversion with an uncertain effect on total welfare. This result, of course, assumes that a certain volume was purchased in third countries in the initial situation. The conclusion can follow from both perfect competition models and models of imperfect competition.

Theoretically, it cannot be ruled out that single EU Member States can gain from a closed public procurement market. This follows from the theory of strategic trade and industrial policy when assuming the market to feature considerable economies of scale and oligopoly. If, however, 15 EU Member States all follow a closed-door policy, that same body of theory tells us that positive welfare effects at the national level are unlikely to occur. The EU public procurement regime can be interpreted as an attempt to avoid governments competing by possessing the most closed set of national public procurement rules. On the other hand, the discriminatory elements of the EU procurement rules vis-à-vis third countries can be interpreted as an attempt by the EU to conduct strategic trade and industrial policy directed towards these sectors within public procurement where the EU wishes to secure a strategic stronghold for competing against the USA and Japan, for instance within telecommunications, medical equipment etc.

The Public Market Share

The point that discriminatory public procurement between the EU Member States has negative consequences for welfare is, however, dependent on the public share of total domestic consumption within the single EU Member State.

Baldwin and Richardson have thus, within the framework of the perfect competition model, shown that favouring national industry with respect to public procurement (reduced imports) only causes an equal, offsetting shift in private demand such that the market equilibrium is unchanged, i.e. unchanged total imports at an unchanged market price, production and welfare.⁹ This neutrality result can also be valid in situations with less than perfect substitution between domestic and foreign products and under various assumptions regarding returns to scale.¹⁰ The neutrality result is, however, only valid as long as the public share of the total domestic market remains limited. In sectors where the public sector is the dominant buyer, the neutrality result therefore does

not hold. However, this is not to say that large costs will follow from discriminatory public procurement when the public share is large. In the Baldwin and Richardson model, a dominating public market share will indeed raise the public procurement price and the domestic production volume. On the other hand, the import price will fall resulting from less import demand, thus causing import prices in the private sector to fall and private imports to rise. The total impact of discriminatory public procurement is therefore likely to be modest, even though the public budget will suffer slightly. This result is, however, based on the assumption that suppliers to the public sector deliver a mass-produced good, which can be bought at standard prices by both the public and private sectors. This assumption does not hold for a great deal of public sector procurement, which can, rather, be characterised as order production. From these results, it is only reasonable to expect appreciable effects from the Single Market for public procurement within sectors dominated by public buyers and/or where order production is the prevailing characteristic.

Trade versus Direct Investment

Other factors that determine the effects of discriminatory procurement policy include the reactions of multinational firms to such a policy and whether the discrimination takes place on grounds of nationality or the geographical location of the production unit. There is reason to expect that, in the longer term, the local production and employment conditions will be considered and not where the profit ends up. If this is the case, a possible reaction from the EU and third country firms to discrimination in a *given* EU market will be to establish a production unit there – the well-known “tariff-jump argument” for foreign direct investment – which will contribute to keeping a higher level of competition and possibly limiting the symbiotic relationships between the public buyers and suppliers.

Therefore, one effect from the liberalisation of the

⁸ According to the utilities directive third country bids can be rejected insofar as more than 50% originate from third countries. Also when the price offered by an EU supplier is up to 3% higher than the price offered by a third country supplier, the EU offer can be given preference.

⁹ R. Baldwin, J. D. Richardson: Government Purchasing Policies, Other NTB's, and the International Monetary Crisis, in: H. E. English, K. A. J. Hay (eds.): Obstacles to Trade in the Pacific Area: Proceedings of the Fourth Pacific Trade and Development Conference, Ottawa 1972.

¹⁰ K. Miyagiwa: Oligopoly and Discriminatory Government Procurement Policy, in: American Economic Review, Vol. 81, No. 5, pp.1320-1327.

public procurement market can be concentration of foreign direct investment in fewer Member States and thus more trade. Where the concentration occurs is among other things a question of returns to scale, market concentration, differences in factor prices, and remaining barriers to trade, including transport costs.¹¹ For producers in third countries the liberalisation will also possibly affect the considerations of export versus direct investment. If the liberalisation in the European public procurement market is significantly discriminatory vis-à-vis third countries, producers in these countries will, to a greater extent, see advantages to a direct investment strategy as compared to an export strategy. While the consideration earlier was a matter of choosing between export and direct investment in several EU countries, having a presence in fewer countries in the EU now results in a clear economic benefit from lower fixed costs. Therefore, direct investment will become a relatively more advantageous solution which might lead to limited volumes of exports from third countries. If the liberalisation is not, or only modestly, discriminating vis-à-vis third countries, increasing exports are likely to result if the abolition of barriers is considerable.

Buying Behaviour and Incomplete Contracts

Trade theory states that trade in goods consists of a transaction in which a product with underlying characteristics is transferred from a seller to a buyer, where the buyer has full trust in the quality of the product, and where the use of the product does not require any learning or after-sales service. The buyer-seller transaction can, in other words, be expressed in a *complete contract* and thus there is full certainty with no need for building up longer-lasting buyer-seller relationships. Given that this is true, the price becomes the key criterion for the buyer's choice of supplier, which can consequently change from one transaction to the next. According to such a perception, the preference of local public authorities for local suppliers will be evidence of protectionism.

Insofar as the buyer is a public authority, it is unreasonable to think that elements other than just the price and the physical characteristics will be a part of its preference function. Whilst a private buyer in a firm operating in a competitive market is assumed to be under a certain pressure to secure the lowest prices possible, a public buyer might have other concerns, even though minimising costs in order to get the lowest tax percentages or the highest possible quality at the lowest possible price undoubtedly plays a role. In a public jurisdiction with *unemployed* resources, it

can be economically rational to create local employment and income through a Keynesian multiplier effect. Considering particular local interests at the expense of taxpayers will normally, however, be economically irrational in the long term, but does indeed take place and is usually accepted due to considerable asymmetries. The effects on income and employment are often concentrated – this is where the lobby activity promoting procurement preferences stems from – whereas the diffusion of costs over taxpayers passes literally unnoticed. Politicians caring for this kind of social interest often have a strong position when running for re-election.

However, the perception of trade theory that buy/sale can be expressed in complete contracts will probably not hold for most private industrial as well as public buying transactions. Rather, *incomplete contracts* are at issue here.¹² For many public purchases of capital equipment and for public works, high transaction costs will make it difficult to thoroughly check on the quality of the delivery ex ante. Even though it is possible, up to a certain point, to state the conditions for delivery, services etc. in a contract ex ante, there will always be a degree of uncertainty and both the buyer and seller will therefore keep an opportunity open for re-negotiation in the future. To the public buyer, the building up of longer-lasting relations can reduce the assessed uncertainty attached to the delivery for the supplier. Therefore, higher-than-market-clearing prices for local suppliers are not necessarily an expression of favouritism or protectionism seen from the buyer's perspective, but might also be an expression of the value assessment of risk, flexibility etc. The crucial opportunity for the buyer to motivate a supplier to deliver the unverifiable part of the transaction is to build up a buyer-seller relationship with *repeat purchases*, where the public buyer pays an "overcharge" (*quasi-rent*), which the supplier will lose in foregone future sales if he does not fulfil the public buyer's expectations as regards the intangible parts of the contract.

As the public buyer must also take into account the prices that other suppliers can offer, the "overcharge" or quasi-rent necessary to ensure fulfilment of the non-contractual parts is a function of the number of potential suppliers. The more suppliers, the higher the probability of a change of supplier and, consequently,

¹¹ J. D. Hansen, J. U-M. Nielsen: *An Economic Analysis of the EU*, Sec. Ed., London 1997, McGrawHill.

¹² O. Hart, J. Moore: *Foundations of Incomplete Contracts*, in: *Review of Economic Studies*, Vol. 66(1), No. 226, pp.115-138.

the higher the quasi-rent.¹³ On the other hand, the number of potential suppliers will have effects on the oligopoly-rent in the market, which overall results in a trade-off between the quasi-rent and the oligopoly-rent. The oligopoly-rent initially falls more than the quasi-rent increases with an increase in the number of potential suppliers whereas, beyond a certain number of potential suppliers, the quasi-rent will dominate the oligopoly-rent. Longer-lasting buyer-seller relations might therefore exist on economically rational grounds. If public buyers give exclusive priority to the minimisation of costs, it is not given that they will prefer many potential suppliers, as this will cause an increase in the quasi-rent and possibly the total price. Thus, they might instead have economic motives for preferring the number of bidders to be limited to, say the national, regional or local area.

The fact that the EU directives allow for a public buyer to choose suppliers on the basis of criteria other than price, for instance delivery time, customer service, and technical assistance seems to suggest a certain recognition of the economic significance of longer-lasting relations and incomplete contracts.

How Has It Worked?

A set of theoretical analyses of the expected effects of the EU public procurement rules is presented above, but a number of analyses in recent years have shown that the rules have not worked as expected by the Commission in the Atkins Report of 1988. In the *institutional and judicial* area, the major problem has been the inadequate implementation of the directives into national law, which can be seen from the fact that only 56% of the directives were correctly implemented in all Member States in 1997.¹⁴

According to a Danish study made by the Danish Board of Competition the public procurement rules are being circumvented by public buyers through:

- dividing contracts into smaller amounts in order to avoid publication in the Official Journal,
- unnecessary use of the accelerated procedure,
- early notification of local/national suppliers, and
- delayed procurement procedures and faulty or unreasonable standardisation requirements.¹⁵

Hence, the suppliers to public institutions do not consider the public procurement rules to have made penetration of the markets of other EU Member States significantly easier. In addition, it is a problem that enforcement of the EU rules through trial under article 226 is time-consuming (30 months on average) and

rarely reaches the European Court of Justice.¹⁶ A study from 1997 shows that many contracts which, according to rule, should be submitted for EU tender are not, and that the public institutions generally prefer the restricted procedure and the negotiated procedure in order to lower the administration costs.¹⁷ At the same time, the fundamental terms of fairness are often compromised through discrepancy between the criteria listed in the material and the actual selection criteria.

Regarding the *economic* effects, the Commission study indeed shows that suppliers to the public sector have become increasingly aware of new opportunities in other EU Member States because of the publication of tenders through the Official Journal with some resulting increase in intra-EU imports. However, the study also stresses that savings of the order mentioned in the Emerson report have not been achieved, including the expected price convergence across EU Member State markets. Still, the liberalisation is seen to have been causing the restructuring of a number of industries delivering to the public sector, thus having achieved a more effective EU industry.

An interesting common characteristic of the Commission study and the study of the Danish Board of Competition is that the greatest effect of the liberalisation stems from the national markets, as public buyers generally seem to prefer dealing with known and local suppliers from the same culture. National markets in the EU have been opened up to themselves such that the national integration process has had a higher impact than the international process through increased professionalism and centralisation of procurement as driving factors behind increased competition.¹⁸ The various studies

¹³ A. Breton, P. Salmon: Are Discriminatory Procurement Policies Motivated by Protectionism?, in: *Kyklos*, Vol. 49, No. 1, pp. 47-68.

¹⁴ Commission of the European Communities: Public Procurement: Commission Communication Outlines Policy Priorities. Direction General XV. Bruxelles 1999, http://europa.eu.int/comm/internal_market/en/publproc/comm/pubcomm.htm

¹⁵ Konkurrencestyrelsen: Danske virksomheders muligheder ved offentlige EU-udbud i udlandet, København 1997.

¹⁶ J.-M. Martin: The EC Public Procurement Rules: A Critical Analysis, Oxford 1996, Clarendon Press.

¹⁷ Commission of the European Communities: The Single Market Review. Dismantling of Barriers. Public Procurement. The Single Market Review, Subseries III, Volume 2, Office for Official Publications of the European Communities, Luxembourg 1997.

¹⁸ P. T. Madsen: Offentlige indkøb og Det indre Marked - konsekvenser af EU-udbud med særligt henblik på innovations- og integrationsprocesser, Institut for Samfundsudvikling og Planlægning, Aalborg Universitet, Aalborg 1996.

also indicate that a supplier will need local presence to have a real chance of winning public tenders. This particular aspect has worked against increased price convergence across the EU Member State markets, as the cost base and the prices have, consequently, adjusted to national market levels. Finally, it is worth noting that the above-mentioned studies generally demonstrate that the public buyers have experienced higher administration costs and that only few have experienced savings as a result of the EU rules.

An Empirical Analysis

Seen in the light of trade theory, the liberalisation of the Single Market for public procurement is only expected to have had any effects insofar as the preferences of public institutions were initially of a protectionist nature, i.e. biased towards local/national procurement. As described above, both trade creating and trade diverting effects will occur depending on the extent of continued discrimination towards non-EU country suppliers. The net effect will probably be positive because trade amongst the EU Member States is already significant and because discrimination towards important third countries such as the USA and Japan is expected to be modest. Increasing intra-EU trade, slightly decreasing trade with third countries and generally lower prices of the public procurement products is expected.

According to the theory of incomplete contracts the effects of the EU liberalisation are more doubtful. If the national public procurement markets have been characterised by protectionism and if the public market shares have been dominant, it is probable that the oligopoly-rent has been significant relative to the quasi-rent in price formation. Liberalisation through increased competition, increased cross-border trade, and increased exploitation of economies of scale will thus lead to lower prices and improved welfare. On the other hand, if no protectionism has taken place and if the national markets have been characterised by some import penetration, living strictly in accordance with the procurement rules might, in fact, split up existing long-term relations to suppliers and thus increase the quasi-rent without decreasing the oligopoly-rent, resulting in higher prices and reduced welfare.

The basis for our hypotheses is similar to the initial Commission assumption of 1988 that national protectionism took place earlier and that the public market shares of the tested products are dominant. The pivotal point of our study is thus whether the markets for some selected products have developed along

significantly different lines after 1993 when the Single Market became a formal reality and the latest significant changes in the public procurement directives took place. Even though the EU, as previously mentioned, had public procurement directives before 1993, it is a fundamental assumption in this analysis that the general trade liberalisation of the Single Market in combination with the procurement directives dramatically altered the framework for public procurement after 1993.

Furthermore, it will be assumed in accordance with the view of the EU Commission that the liberalisation effect in the public procurement market is larger than in the general EU market. Therefore, we set up the hypothesis that for important public procurement products, a fall in prices and an increase in quantities has occurred which is significantly different from the EU market as a whole. We attempt to register a supply-side effect (productivity/competition effect) specific to the relevant product market relative to all other markets. Our *main hypothesis* is thus that prices (unit values) decrease and quantities (tons) increase after 1993.¹⁹ However, a number of conditions hamper the formulation of exact hypotheses. From more recent trade theory, it is well known that even *potential* international competition can lead to lower prices without leading to any appreciable increase in cross-border trade. This corresponds to a situation where the opening of the public procurement market causes foreign suppliers to make more bids in other EU Member States thus driving down prices, but without winning any serious amount of contracts abroad. Even a situation where the theoretical possibility of foreign bids has a depressing effect on prices is not unthinkable. However, a situation with lower prices and no increase in intra-EU trade could probably not become a stable, long-run equilibrium. If domestic bidders continue to win domestic public tenders or if they realise that foreign potential suppliers never bid for domestic contracts, they will gradually start to act as if no foreign competition exists. The assumption that the national public procurement markets of EU Member States have been opened up for themselves due to increased professionalism etc. will also bring about lower prices with no growth in intra-EU trade. On the other hand, *market concentration* on the supply side could take place, leading to increased intra-EU trade without any appreciable change in prices, but with a better exploitation of economies of

¹⁹ Given that intra-EU prices and quantities move in opposite directions, the effect on intra-EU trade (measured by intra-EU market share) is uncertain.

Table 1
Product Groups

Product number (CN8)	Name of product group	Is a part of the regression analysis	Standardized ²
27149000, 25171010	Asphalt products	x	ST
30051000, 30059031, 30059051, 30059055, 30059099	Wadding, gauze, bandages and the like	x	ST
30021010, 30021091, 30021095, 30029010, 30029090, 30061010, 30061090, 30062000, 30063000	Products of blood and means for analysing blood products etc.	x	ST
48235190, 48235910, 48235990	Paper and paperboard for writing and printing	x	ST
84021200, 84021910, 84022000, 84061911, 84061913	Steam turbines and other vapour turbines	x ¹	
85042100, 85042210, 85042290	Electrical transformers	x	
85173000	Electrical apparatus for telephony and telegraphy	x	
85351000, 85353090	Electrical apparatus for switching or protecting electrical circuits	x	
86011000, 86012000, 86021000, 86029000, 86031000, 86039000, 86040000, 86050000, 86061000, 86062000, 86063000, 86069110, 86069190, 86069200, 86069900	Rail locomotives and passenger coaches, etc.	Too large variance in UV	
87021011, 87029011	Buses	x	
86080010, 86080030	Traffic control equipment	Too large variance in UV	
89040010	Tugs and pusher craft	Too large variance in UV	
90181100, 90181900, 90182000, 90189010, 90189020, 90189030, 90189041, 90189049, 90189050, 90189060	Electro-medical equipment	x	
94031051	Office desks	x	ST

¹ For 84061911 and 84061913 only information up to 1995 is available.

² ST means "standardised", that is, products where there is no adaptation to customers or after-sales service.

scale and thus with a positive integration effect on the welfare of the EU Member States.²⁰

Our empirical study rests solely on the EU trade statistics in spite of its errors and deficiencies, particularly after 1993. Consequently, we are excluded from studying public procurement of services and of goods unsuited for international trade due to small average order sizes or due to a prohibitively great need for proximity between the public buyer and the supplier. Thus, our results can be compared to those of the Commission where trade flows are analysed.²¹ However, our analysis deviates from the above-mentioned in a number of ways, among others the fact that our study spans the 11-year period from 1988 to 1998 as compared to the 1988 to 1992 period of the Commission study, and the different selection of products.

We first selected 61 "products" (cf. Table 1) based

²⁰ If the market concentration is followed by increasing direct investment between Member States in the form of production subsidiaries, it is not given that intra-EU trade with public procurement products increases, whereas an indirect increase in components for production of the public procurement products is expected.

in part on common knowledge of public buying behaviour, in part on interviews with public buyers, and in part with a view to the Commission's studies of 1988 and 1997 respectively. For most of the selected products, the public sector is held to be the dominant buyer. Out of the 61 selected product groups 18 were discarded due to a prohibitively high variance in the unit values, which is held to be evidence of a large heterogeneity in the composition of products within the groups.

Our method is based on calculated unit values, market shares, and quantities measured in metric tons stated in the EU trade statistics, COMEXT. A "product" is identified at the 8-digit level in the Combined Nomenclature (CN) of the EU. The unit values are calculated as intra-EU trade per ton, thus expressing the average price (ECU per ton) for a bundle of goods within a given product group. For a given composition of quality in the relevant bundle of goods – which can be realistic in the short term – a

²¹ Commission of the European Communities: The Single Market Review, Dismantling of Barriers, Public Procurement; The Single Market Review, Subseries III, Volume 2, Office for Official Publications of the European Communities, Luxembourg 1997.

decrease (after 1993) in the unit values could be interpreted as lower prices caused by more intense competition.

The regressions (1) – (3) below are used for each product to test whether or not there is a before/after-1993 effect on prices (unit values), quantities (tons) and the traded value (market shares):

$$(1) \ln(UV) = \beta_0 + \beta_1 D + \beta_2 TIME + \beta_3 D \cdot TIME$$

$$(2) \ln(MAR) = \beta_0 + \beta_1 D + \beta_2 TIME + \beta_3 D \cdot TIME$$

$$(3) \ln(TONS) = \beta_0 + \beta_1 D + \beta_2 TIME + \beta_3 D \cdot TIME + \beta_4 BUS$$

where UV is the calculated unit value deflated with the import price deflator in order to catch the price development relative to all imported goods; D is a dummy variable assuming the value of 0 for the years 1988 to 1992 and 1 for the years 1993 to 1998. As can be seen, we use both constant and slope dummies. TIME denotes the years 1988 to 1998, MAR the intra-EU trade for a given product group as a share of total intra-EU trade, TONS the intra-EU quantity trade in metric tons and finally BUS is a business cycle variable measuring the deviation of GDP growth in EU15 (in percentage points) from a trend growth of 2.4%. The reason for using the business cycle variable in equation (3) is that the quantity of a specific product given in tons cannot in any meaningful sense be measured relative to the total trade given in tons. The quantitative fluctuations unrelated to the Single Market can therefore be related to the business cycle development of the period.

By inspecting the signs of significant constant (COD) and slope dummies (SLOD) for unit values and tons values for each product, an assessment is made as to whether a Single Market effect can be ruled out or not. If, for instance, both the constant and the slope dummies of the unit value have negative signs, this is taken as an indication that decreasing prices resulting from intensified competition after 1993 cannot be ruled out. The same is the case when only the constant dummy of the unit value is negative. If, however, the constant dummy is positive and the slope dummy is negative, taking a closer look at the graphs will determine whether prices seem to have decreased. Along the same lines, the dummies for the ton values are examined such that, for instance, a positive constant and slope dummy are taken as indicating increased intra-EU traded quantities.

The ascertainment of a Single Market effect implies for the normal case (NORMAL) both decreasing unit values and increasing quantities. As opposite shifts in prices and quantities do not give any clear expecta-

tion of the value (and the market share), the signs of the dummies of the market share are not crucial, but they are included as additional information. However, it is not a necessary condition for a Single Market effect to have significant dummies for both unit values and quantities with the expected signs. For instance, if the dummy for UV is insignificant, but significant for TONS, this could be a result of increasing supply-side concentration (CONCEN) in the wake of the liberalisation. On the other hand, if UV has a significant dummy and TONS has not, there could be a positive integration effect stemming from increasing *potential* (POTEN) competition.

Table 2 shows 17 of 43 suitable products where a Single Market effect *cannot be ruled out*, including whether it is the normal case, the concentration case or the potential competition case.²²

As can be seen from the table, our main hypothesis that prices decrease and quantities increase only applies to four out of a total of 43 products in the analysis (9%). If the theory of a Single Market effect is expanded to apply to all cases of significant price decreases (NORMAL+POTEN), eight products qualify (19%) and if the concentration hypothesis is included, 17 products (40%) fulfil the criteria. It is also worth noting that even though eight products are characterised by price decreases, six products are at the same time characterised by significant price increases, an observation that can be explained theoretically by increased market concentration or by breaking up existing long-lasting buyer-seller relations causing an increase in the quasi-rent without a corresponding decrease in the oligopoly-rent.

Looking at the results in Table 2 from an industry point of view, the health care sector is clearly over-represented relative to the rest. Out of the total 43 products analysed, 20 can be characterised as “standardised” in the sense that no particular tailoring or after-service seems to be necessary, and where the order size is modest at the same time. For these “standardised” products “complete contracts” seem to be the case. For 10 out of the 20 standardised products a Single Market effect cannot be ruled out if all of the above three hypotheses are accepted. Out of 23 “non-standardised” products, seven have a Single Market effect. Even though the difference is not large, the rate of success is larger for the standardised products, which is in line with our theoretical expectations.

²² The regressions equations can be obtained from the authors on request.

Table 2
Product Where a Single Market Effect Cannot be Ruled Out

Product group	Product number (CN8)	Product name	Hypothesis
Wadding gauze, bandages and the like	30059051	Bandages and similar articles of non-woven material etc.	CONCEN
	30059055	Bandages and similar articles of textile materials etc.	POTEN
	30059099	Bandages and similar articles impregnated with... etc.	CONCEN
Products of blood and means for analysing blood products etc.	30021091	Haemoglobin, blood globulins, and serum globulins	CONCEN
	30021095	Blood fractions of human blood (excl. antisera etc.)	CONCEN
	30029010	Human blood	CONCEN
	30061090	Sterile suture materials and tissue adhesives etc.	CONCEN
	30062000	Reagents for determining blood groups or blood factors	CONCEN
Paper and paperboard for writing and printing	48235190	Paper and paperboard for writing, printing or other graphic purposes, in strips or rolls with a width of < 15 cm.	NORMAL
Steam turbines and other vapour turbines	84061911	Steam turbines for electricity generation, of a power < 10.000 kW	NORMAL
Electrical apparatus for switching, etc.	85353090	Isolating switches and make-and-break switches, for a voltage > 72.5 kV	POTEN
Electro-medical equipment	90181100	Electro-cardiographs	POTEN
	90189010	Instruments and apparatus for measuring blood-pressure	CONCEN
	90189030	Artificial kidneys	NORMAL
	90189041	Ultrasonic diathermic apparatus	NORMAL
	90189050	Transfusion apparatus used in med., surg. or vet. sciences	POTEN
Office desks	94031051	Office desks, with metal frames	CONCEN

Note: CONCEN denotes the concentration hypothesis and, correspondingly, POTEN and NORMAL denote the potential competition hypothesis and the normal hypothesis respectively.

In spite of the uncertainty attached to the EU trade statistics, the applied method and its volume of products give some indications of a Single Market effect. This is true in particular if the concentration hypothesis is accepted as a significant element in the liberalisation of the public procurement market. This can only be confirmed through detailed industry studies, which is outside the scope of this paper, but nevertheless a research area where additional efforts are called for.

Conclusion

The purpose of this paper has been to assess whether the Single Market for public procurement has had the expected effects after six years in progress. For the empirical study, trade figures for 43 eight-digit product groups have been used and we have indeed succeeded in detecting significant effects on the measured variables for 17 of these product groups. However, the effects are not uniform as the pure competition effect applies to just four product groups (the normal hypothesis) which is strictly in line with our main hypothesis: that the EU directives should lead to larger traded quantities and lower prices. The 13 remaining product groups seem to have shown *either* a concentration effect (quantity increase) *or* a potential competition effect (price decrease). In other words, there are indications of considerable restructuring having taken place, but with few industries actually having shown a pure competition effect from the Single Market.

Whether or not the Single Market can be held to have fulfilled expectations depends on the significance attributed to the concentration hypothesis. If importance is attached to observing a pure competition effect, the applied (very restrictive) method has only shown very limited, dispersed and heterogeneous effects resulting from the Single Market. Thus, the pure competition effect does not appear to follow a certain pattern, that is, within certain industries, product groups etc. On the other hand, the Atkins Report stressed that considerable effects from the Single Market would stem from restructuring within industries characterised by economies of scale, that is, a concentration effect. From this point of view, our study does indeed indicate that at least *some* of the expected effects have shown in the industries subject to the analysis.

Our study points to two – partially contradicting – challenges for the EU regulation of the public procurement market. Firstly, preference for buying nationally must be limited through further efforts to secure market transparency, including enforcement of the existing rules. Secondly, as shown by the theory of incomplete contracts, the prevention of rationally grounded buyer-seller relations within technically complex procurement from being split up. Therefore, the Commission plan of introducing a “competitive dialogue” in order to support the technical dialogue between public buyers and suppliers appears to be a step in the right direction.