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Will Further Market Integration and Intensified Competition Lead to Higher Growth in Austria?

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1. Abstract

This paper comprises five main sections.

After this introduction into the structure of the paper *section 2* presents the main theoretical foundations of a growth-oriented competition policy by providing a review of the relevant literature from the early 1940s up to 2005.

Section 3 will present empirical evidence concerning regulation and competition in Austrian product markets. Both international as well as cross-sectoral comparisons are provided for Austria to gain a representative overview of the relevant indicators.

Section 4 is concentrated on the energy sector where competitive distortions in the relevant markets are most obvious in Austria. On the basis of a thorough analysis of the pending competitive constraints in electricity markets the respective challenges for Austrian regulatory and competition policy are carved out.

Section 5 concludes with some fundamental recommendations based on our analysis of competition and regulation in Austrian energy markets.

2. Theoretical Foundations of a Growth-Oriented Competition Policy

Market competition takes place as a "process of creative destruction" (*Schumpeter,* 1942) and can be interpreted as a "search and discovery process" (*Hayek,* 1968). Competition as a perpetual search and discovery process for new products, processes and markets ensures that producers are forced to continuously adapt their products and/or processes to changing consumer preferences in order to keep their existing customers or even find new ones. Existing products and processes are challenged by innovations and will be driven out of the market if innovative products and processes fit customer needs better. New markets might develop.

Based on the insights gained from the theoretical model of perfect competition, it has been widely recognised that competition is an important force in achieving allocative efficiency, providing incentives for the efficient organisation of production, and pushing forward innovation activities.

According to this line of thought, we can identify three forms of incentives for improved efficiency provided by competition (*Armstrong, Cowan and Vickers,* 1995).

First, competition tends to "select" more efficient firms at the expense of less efficient ones, thus resulting in overall improvements in productivity. In an adaptation of the core principles of Darwin's natural selection theory, it is argued that competition drives enterprises to better adapt to their environment because of threats to their survival. Firms with market power are shielded from this kind of selective competition and can therefore survive without constant efforts to enhance their efficiency. The precise mechanism by which competition fosters the "survival of the fittest" depends upon the nature of the competitive process (*Vickers,* 1995), yet the conclusion is quite robust.

Second, competition provides managerial incentives for the reduction of organisational slack and X-inefficiency (*Leibenstein,* 1966), thereby improving productivity and corporate performance. Darwinian tradition emphasises that competition drives inefficient firms out of the market: the higher the degree of competition, the stronger the pressure to reduce organisational and managerial slack.

Third, one can expect that sharpened incentives (see above) may well lead to productivity improvements, which may be (partly) induced by increased efforts being put into R&D and innovation. The theoretical support for the proposition that competition fosters innovation exists, but this is yet far from conclusive.

During the intense discussion whether competition fosters or hinders growth – a controversy that originally dates back to the early 1940s – two "competing" theories, which are facing each other as thesis and antithesis, have been developed and ambiguous evidence was found on the efficacy of competition (Cf. *Seong,* 2002). After sixty years of research, economics is now at least able to specify the conditions under which competition will produce better economic performance or, alternatively, cause deterrence of innovation. Deregulation efforts as well as interventions by competition policy aimed at increasing the competition intensity on a market are always moving within the field of tension between positive impulses for economic performance on the one hand and negative incentives for innovative entrepreneurs in the form of reduced monopoly rents on the other hand.

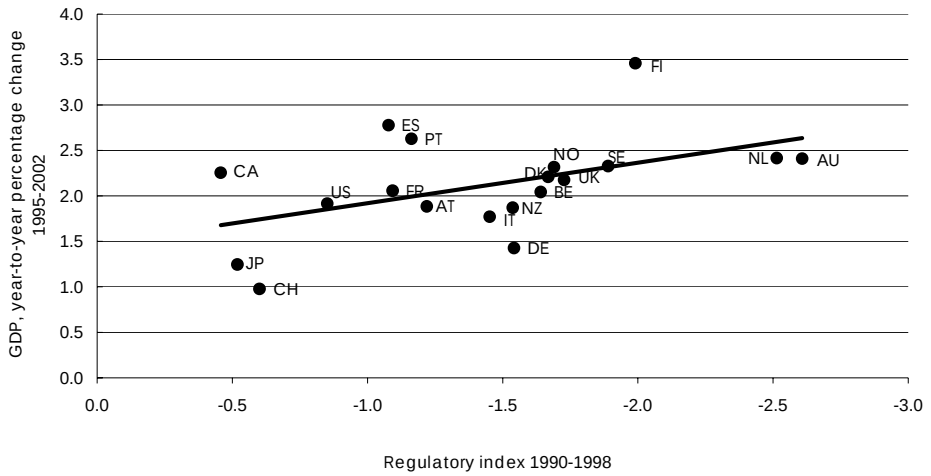
2.1 Thesis: Competition Necessitates Innovation and Boosts Economic Growth

A series of studies in the tradition of principal-agent theory shows that competition induces a firm to be more efficient by reducing its agency problems (*Mookherjee,* 1984, *Willig,* 1987, *Hermalin,* 1992).

Aghion et al. (2001) demonstrate in a model with step-by-step innovation that competition has a positive effect on growth by pointing out that a technological leader in a more competitive industry earns higher profits relative to other firms in the industry due to the "selection effect" of market competition. In this institutional setting, a strong motive for innovation and/or investment in R&D comes from the possibility of escaping from competition with "neck-and-neck" rivals ("escape-competition effect").

Empirical evidence for the Darwinian assumption that competition forces firms to innovate and to be more efficient, thereby raising productivity and enhancing growth, is quite broad (e.g., *Nickell,* 1996, *Blundell, Griffith and Reenen* 1995, *Geroski,* 1990, 1995).

Chart 1: Higher Growth through Deregulation



Source: Nicoletti, Scarpetta and Boylaud (2000), author's calculations.

Porter (2000) found empirical evidence for both the intensity of local competition and the effectiveness of national antitrust policy having a positive relationship with the level as well as the growth rate of GDP per capita. The argument that more

competition has a positive impact on growth is also confirmed by the fact that the OECD countries having started to deregulate network industries most ambitiously in the early 1990s enjoyed the highest GDP growth per capita in the late 1990s (see chart 1).

Despite the strong empirical support for a positive relation the efficiency between competition and growth remains a controversial issue. According to *Schumpeter* (1942), an atomistic firm operating in a perfectly competitive market may be a perfect vehicle for static resource allocation, but a large firm with substantial market power is the most powerful engine of progress and long-run expansion of total output.

2.2 Antithesis: Competition Impedes Innovation and Curbs Economic Growth

Schumpeter (1942) identified two effects of market power on innovation. First, he argued that expected ex-post market power, even though it would be transient, induces firms to have an incentive to innovate. If firms expected excessive rivalry after the innovation, they would have little incentive for innovation. Second, Schumpeter also argued that an ex-ante oligopolistic market structure and the possession of ex-ante market power are favourable to innovation. This is because it is easier for firms to predict rivals' behaviour under an oligopolistic market structure and therefore there is less uncertainty of excessive rivalry. Schumpeter thought that profit from ex-ante market power could serve as a source of internal financial resources for innovation activity by implicitly assuming an imperfect capital market (*Cohen and Levin,* 1989).

By further exploring Schumpeter's basic propositions in the context of endogenous growth theory (e.g., *Aghion and Howitt,* 1992, *Grossman and Helpman,* 1991, *Romer,* 1990), no compelling evidence for the negative trade-off between competition and growth was found. Schumpeter's results rather proved to be very sensitive to the underlying assumptions (*Aghion and Howitt,* 1997).

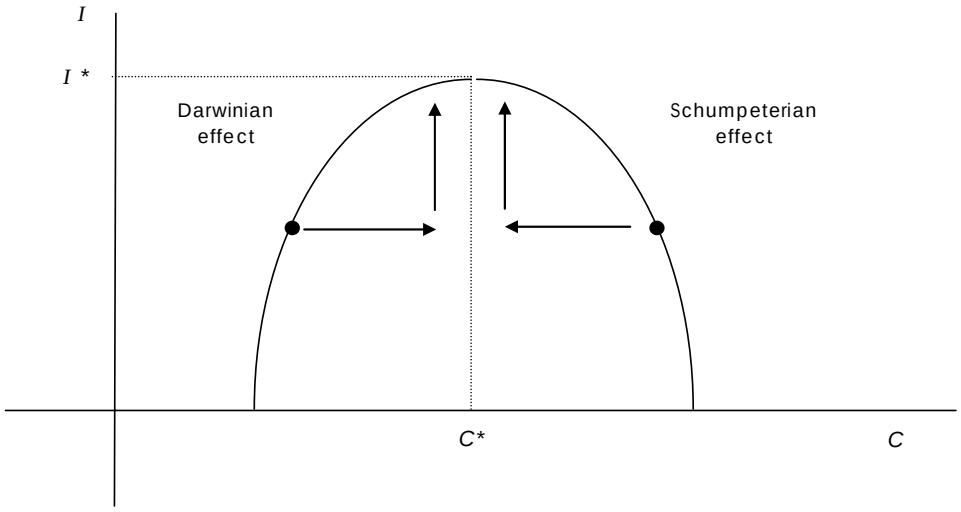
2.3 Synthesis: Non-Monotonic Relationship between Competition and Innovation, and Growth, Respectively

In an attempt to "reconcile" both lines of argumentation, recent research in the Schumpeterian tradition provides evidence that, with the monopoly at one extreme, competition enhances efficiency (only) until a certain level of market concentration is reached, while competition hampers efficiency if it is too intense.

This non-monotonic relationship between competition and efficiency (or productivity and growth) is known in the literature as the "inverted U-shape" hypothesis. According to *Aghion et al.* (2005), the relationship between product market competition and innovation is "inverted U-shaped" because at low levels of

competition, the *escape-competition effect* (Darwinian effect) tends to dominate while the *appropriability effect* (Schumpeterian effect) tends to dominate at higher levels of competition.

Chart 2: The "Inverted U"



Note: C . . . competition intensity, C . . . "optimum" competition intensity, I . . . innovations indicator, I* . . . "optimum" innovation level.*

Source: Author's illustration.

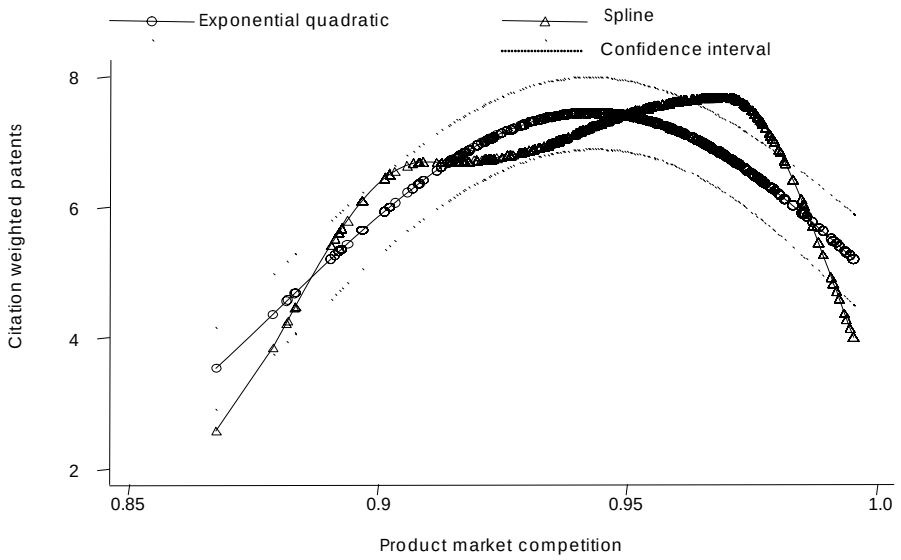
The logic of the "inverted U" implies that the effects of a relative change in competition intensity on growth depend on the current level of competition ("Laffer curve" problem; see chart 2). The combination of Darwinian and Schumpeterian effects leads to an "inverted U-relationship" between competition and growth.

By using data for UK manufacturing industries, *Aghion et al.* (2005) found that negative "Schumpeterian" effects of competition on innovation (and growth) only materialise at very high competition intensity levels (see chart 3). According to this research, the escape-competition effect is strongest in industries with a small technology gap ("neck-and-neck" industries) and the appropriability effect is strongest in industries with a large technology gap because of expected larger (temporary) monopoly rents.

However, in case of really strong competition, not too many industries will remain neck-and-neck. On the other hand, weak competition leads to many industries remaining neck-and-neck, where the escape-competition effect

dominates, while strong competition unlevels them, making the appropriability effect dominate ("composition effect").

Chart 3: Empirical Evidence on the "Inverted U"



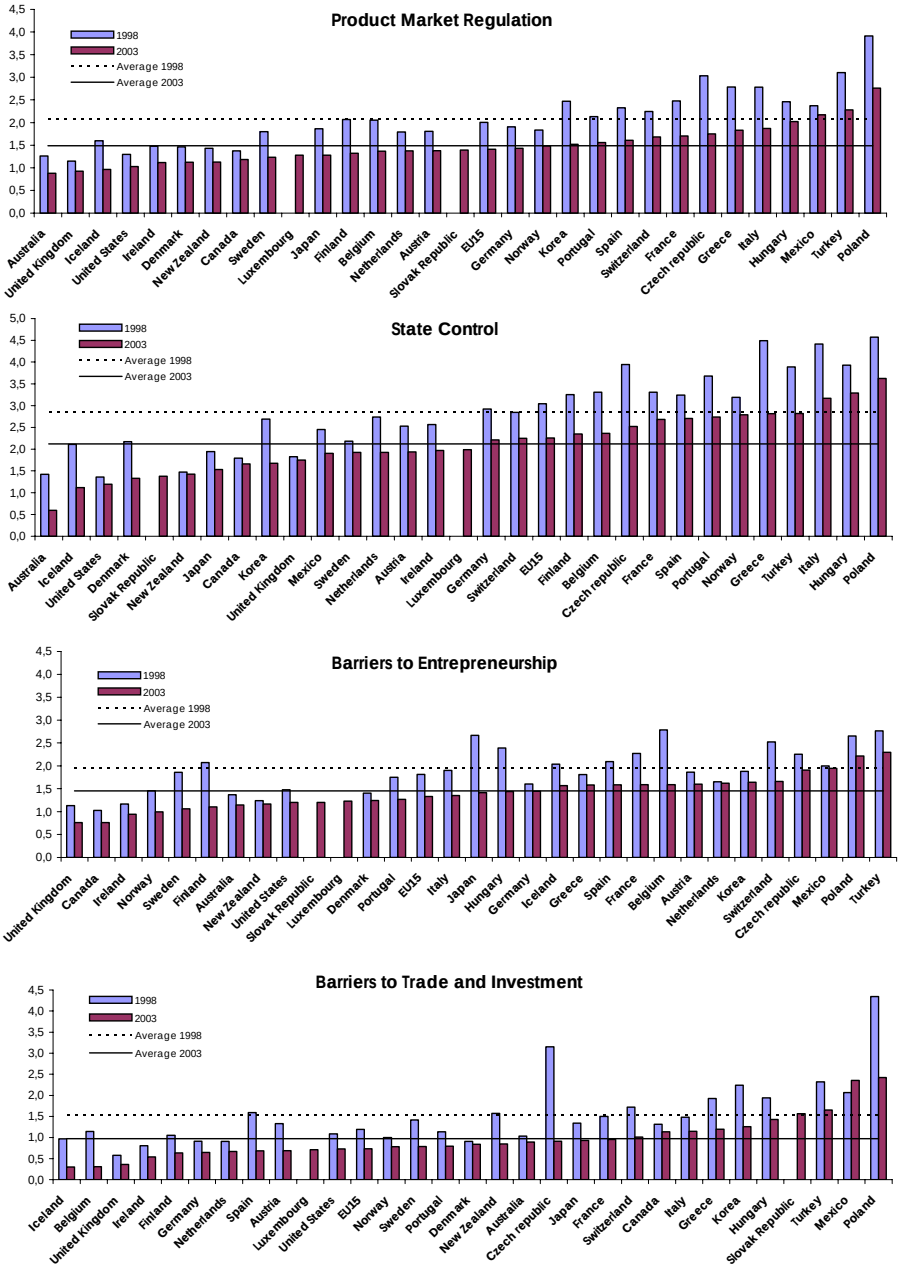
Source: Aghion et al. (2005).

Empirical evidence for the "inverted U" is quite broad and strong (e.g., *Scherer,* 1967, *Scott,* 1984, *Levin, Cohen and Mowery* 1985, *Caves and Barton* 1990, *Green and Mayes,* 1991, *Caves et al.,* 1992, *Aghion et al.,* 2005).

3. Product Market Regulation and Competition: Empirical Evidence for Austria

In recent years, a number of OECD and EU countries have implemented a wide range of structural and regulatory reforms which were based on the theoretical assumption that regulatory and structural reforms of product markets will increase multi factor productivity (MFP) growth. Meanwhile this hypothesis on the efficacy of (de)regulation on (productivity) growth has been substantiated by convincing empirical evidence (*Scarpetta et al.,* 2002, *Nicoletti et al.,* 2001; for a concise review see also *Ahn and Hemmings,* 2000).

Chart 4: Product Market Regulation and Its Components in the OECD



Source: Conway, Janod and Nicoletti (2005).

Structural and regulatory reforms include inter alia deregulation and liberalisation of product markets (particularly telecommunications, utilities and financial services) as well as privatisation of public enterprises (*Nicoletti et al., 2001*).

Despite several years of intense regulatory reforms, the "friendliness" of the regulatory environment towards product market competition still varies substantially across the OECD countries. The UK, Ireland, Australia and the U.S.A. appear to have the least restrictive overall regulatory environment, while the environment in Italy, Greece and Norway is still characterised by comparatively rigid regulations (*Nicoletti, Scarpetta and Boylaud,* 2000). In international country rankings of overall Product Market Regulation, Austria takes a place in the midfield with more or less average indicator scores (*Nicoletti and Scarpetta,* 2003). A decomposition of the overall OECD Product Market Regulation-Indicator (see chart 4) shows that in Austria substantial progress has been made between 1998 and 2003 in reducing the extent of state control as well as in lowering barriers to trade and investment. In the field of barriers to entrepreneurship, however, no substantial progress could be recorded. In particular administrative burdens for start-ups still remain a challenge for further deregulatory efforts in Austria (Cf. *Conway, Janod and Nicoletti,* 2005).

Furthermore, the general picture drawn by international comparisons shows that like in other small countries, concentration indices are generally above average in Austria (*OECD,* 2003).

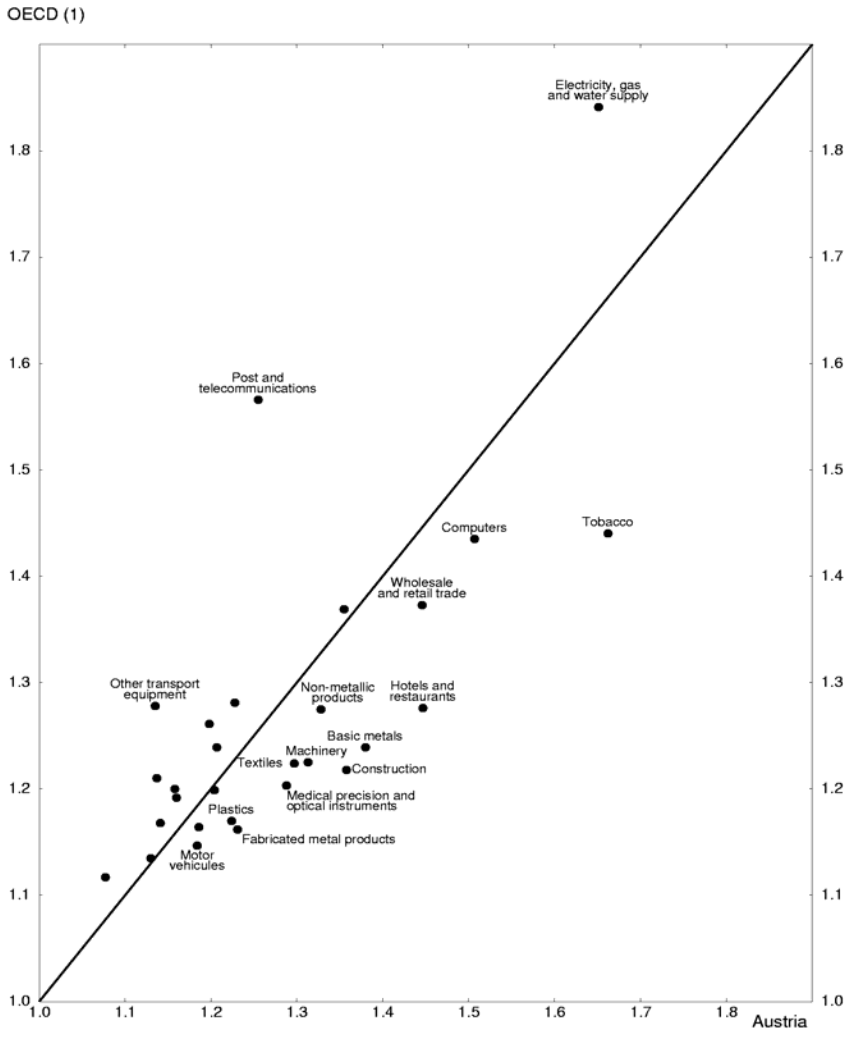
Price-cost margins are estimated to be higher in Austria than the average of a sample of OECD countries in some industries, but lower in others (see chart 5). Pronounced mark-up reductions attributed to Austria's participation in the Single Market since its EU accession in 1995 were only found in the three economic sectors mining and quarrying, wholesale and retail trade as well as financial and real estate services (*Badinger and Breuss,* 2005). Since competition increasing effects are also very limited in other EU Member States, this disappointing result points to a serious malfunction of the European Single Market (Cf. *Sapir et al.*, 2004).

Above-average mark-ups can be found mainly in non-manufacturing industries such as retail distribution, hotels and restaurants. In manufacturing, the steel and the tobacco industry are sectors with particularly high mark-ups. In the case of the steel industry above-average mark-ups are less an indicator for a low competition intensity on the home market than an indicator for the successful positioning of the former state-owned enterprises (VOEST Alpine, Boehler-Uddeholm) as quality suppliers on the world markets. On the contrary, the now privatised Austria Tabak is still protected by granted national monopoly rights in the retail distribution of tobacco products. The Austrian tobacco monopoly act prevents any competition on the retail level by fixing retail prices through wholesale prices which require approval by the Federal Ministry of Finance as well as legally granted margins for the retailers. This regime of simple fixed mark-up retail pricing does not provide

enough incentives for competitive pricing on the wholesale level which might at least partly explain the far above-average mark-ups of this sector in Austria.

Chart 5: Industry-Level Mark-ups – Austria versus OECD

From 1981 to the latest available year



Note: (1) Average of Austria, Belgium, Canada, Finland, France, Germany, Italy, Japan, the Netherlands, UK and U.S.A.

Source: OECD (2003), STAN database. OECD estimates based on the Roeger method.

For the lower than average mark-ups in some network industries (telecommunication, electricity, gas and water supply) there is no unambiguous interpretation.

On the one hand, below-average mark-ups in some network industries could be interpreted as empirical evidence of successful deregulation and liberalisation processes (*OECD,* 2003). Selected Eurostat structural indicators also confirm this story of successful deregulation in network industries. This is especially valid for Austrian energy and telecommunication markets where prices have initially decreased substantially, although one has to take into consideration that the starting price levels were amongst the highest in Europe (Cf. section 4).

On the other hand, low mark-ups are no compelling evidence for effective market competition. Instead they can also indicate low pressure for rationalisation and profit maximisation from the company owners a scenario which leaves plenty of room for managers to pursuing their own interests and maximising their rents at owners' costs. A scenario of public ownership which is "uninterested" in profit maximisation and instead gives "security" and "provision" of customers and employees top priority by willingly accepting excessively high costs, is an apt description of the actual situation in Austria where public utilities were too long protected by monopoly rights granting them unlimited market power. In the absence of profit orientation, high mark-ups were not necessary from the viewpoint of the monopolists, because consumer rents could easily be siphoned off by passing on excessive costs to consumers.

4. Challenges for Austrian Competition Policy in the Energy Sector

Following the analysis of the *OECD* (2003) three areas, namely public energy utilities, services and liberal professions, can be identified where plenty of room for the development of national competition and regulatory initiatives might exist in Austria. We will concentrate here on competition and regulation in Austrian energy markets (especially electricity), which will remain in our opinion the most important challenge for competition policy in Austria for some years to come.[1]

4.1 Economic Effects of Energy Market Liberalisation

Together with the UK, Italy, Spain, the Netherlands and Germany, Austria has been one of the very first EU Member States where both electricity (in Austria since 1 October 2001) and gas (in Austria since 1 October 2002) markets have been

[1] Business services provided by the liberal professions will be discussed by *Iain Paterson* in a separate essay in this volume.

fully liberalised long before the final deadline (1 July 2007) set by the European Commission (E-Control, 2003).

Industrial users as well as households were able to profit substantially from the liberalisation of Austrian energy markets, the former group, however, significantly more than the latter. By applying a partial analytic model for the evaluation of the economic effects of deregulation *Kratena* (2004) found for Austria that gross prices of electricity and natural gas are about 42% and 14%, respectively, lower for industrial users compared to a baseline scenario without liberalisation of energy markets. The corresponding price effects for households amount to less than 18% for electricity and just 4% for natural gas. This divergence in price effects might be taken as an indicator for different competition intensities in relevant markets for the respective consumer groups (table 1).

Table 1: Partial Analytical Study of Price Effects Produced by Energy Market Liberalisation in Austria

	Differences to the baseline scenario without liberalisation, in %
Electricity	
Gross price (including taxes and surcharges)	
Industry	–42.2
Private households	–17.5
Price index	–29.4
Natural gas	
Gross price (including taxes and surcharges)	
Industry	–14.5
Private households	– 4.0
Price index	– 9.3

Source: Kratena (2004).

Even though up to 2001 market concentration greatly increased in the Austrian electricity sector (see section 4.3), chiefly due to the merger of five regional suppliers into a market dominating enterprise (EnergieAllianz), prices of electricity have developed more favourably for both private and industrial end users than has been the case in many other EU countries. Against widely-held expectations, increasing market concentration, at least until 2003, did not result in rising electricity prices for households and industrial users.

However, since 2004, prices have been on a distinctive rise. Prices for natural gas in Austria emulated the pattern and are now roughly in line with the EU average. For both electricity and natural gas, and for private households as well as industries, the price time-series for Austria and those for the EU average show considerable correlation, i.e., energy prices in Austria move more or less in step

with those in the other EU countries (Cf. *Böheim,* 2006).[2] This development of prices is fully consistent with broad empirical evidence namely that deregulation and liberalisation of network industries lead to higher corporate efficiency, but only market competition can bring and sustainably secure lower prices (Cf. *Fraquelli and Vannoni*, 2000).

The recent energy sector inquiry by the European Commission made clear that the EU energy markets still remain mostly national in scope with high levels of concentration in generation, transmission and distribution which gives scope for exercising market power. According to the Commission analysis an integrated European energy market is still far from concrete realization.

The energy sector inquiry confirmed five main areas of electricity and gas market malfunctioning throughout the EU which can be deemed also as pending problems in Austria (Cf. *European Commission,* 2006):

- Wholesale markets generally maintain the high level of concentration of the pre-liberalisation period, creating scope for incumbent operators to raise prices.
- Consumers are denied choice due to the difficulties for new suppliers to enter the markets. Insufficient separation of infrastructure and supply functions prevents new entrants from reaching the final consumer.
- There is no significant cross-border competition. New entrants in gas are unable to secure transit capacity on key routes and integration in electricity is hampered by insufficient inter-connector capacity and long-term capacity reservations.
- New entrants cannot get the information they need to compete effectively. This lack of transparency benefits incumbents and undermines new entrants.
- Prices are often not determined on the basis of effective competition and many electricity users distrust the way prices are set.

Given these European framework conditions we will discuss below some the most pressing structural constraints of Austrian electricity markets which share the common characteristic that they could be challenged by national Austrian competition and regulatory policy.

4.2 Competitive Constraints 1: Structural Problems

The favourable development of electricity prices due to market liberalisation (compared to the alternative scenario without liberalisation; see table 1) should, however, not obscure the fact that competition in Austrian electricity markets is

[2] Whether the price increases over the last two years were finally due to "fundamental factors" (an increase in variable costs, e.g., the higher prices for crude oil) and/or the exercise of market power has not been fully clarified for Austria yet. A definite answer would require extended micro-econometric analyses which are not yet available for Austria thereby offering scope for further in-depth research.

still not working satisfactorily. Due to unresolved homemade structural problems, liberalisation has left incumbent electricity suppliers largely unchallenged in their positions as quasi-monopolists which enable them to still earn substantial monopoly rents in some markets, thereby thwarting liberalisation. This unsatisfactory situation has been further complicated by a substantial increase in market concentration caused by horizontal and vertical mergers of public utilities. Despite sector inquiries by the Austrian Federal Competition Authority these problems remain unchallenged.

Some specific structural features that have traditionally contributed to the high electricity price in Austria have proved especially detrimental to the establishment of functional competition and they constitute substantial barriers to entry for new competitors. They include the organisation of electricity transmission, conflicts of interest arising from public ownership and the price structure for electricity:

First, the organisation of electricity transmission is far too costly in Austria and leaves plenty of room for efficiency improvements. In spite of the country's small size the power grid in Austria is organised in three regulative zones, where a multitude of energy producers and network operators appears on the market. Any market participant which intends to supply electricity throughout Austria has to set up an individual balance group for each regulative zone which involves substantial investment and sunk costs. Furthermore the proliferation of players in the market makes co-ordination very costly, since no standard for co-operation between network operators and non-local energy suppliers has been implemented yet.

Second, the double role of the Bund and the Länder as both owners of public utility companies as well as legislative bodies responsible for the framework conditions for market liberalisation represents a substantial conflict of interest. While as public authorities they are obliged by Community law to foster market liberalisation which is directed towards margin decreasing competition, their interest as owners is to keep rents of the (former) monopolist suppliers high which demands protecting them from competition. This irreconcilable conflict of interests is the main cause for the delayed start of "unbundling", i.e., the separation of network operation and electricity supply (for more details see section 4.4). One way to solve this problem would be to privatise the energy supply part of public utility companies, while keeping public ownership of network infrastructure. The latter option would demand, however, legislative intervention at the level of the Austrian constitution, since the ownership structure (public authorities as majority shareholders) is protected by constitutional law.

Third, the prevailing price structure for electricity has to be regarded as a substantial barrier to entry for alternative non-local suppliers because the "pure" energy component which is subject to competition in liberalised markets constitutes only a small part of the total price paid by customers. Despite regulatory interventions the major part of the price for electricity still consists of network fees and taxes which are not subject to competition. An international comparison of

nine European states shows that Austria combines the lowest prices for the "pure" energy component with one of the highest charges for network fees (chart 2). This price structure enables integrated incumbent electricity suppliers to cross-subsidise energy supply through network operations, thereby deterring market entry of non-local suppliers. For the Austrian regulatory authority, the challenge is to define non-discriminatory network fees at a markedly lower level which will prove to be incentives for competition as well as for investments in the requisite infrastructure. It can be expected that this multi-dimensional challenge will be better mastered by the recently implemented incentive based regulatory regime which provides for ex-ante defined yearly reductions of network fees based on the electricity suppliers' individual corporate efficiency.

4.3 Competitive Constraints 2: Market Concentration

Market concentration is another pending problem in Austrian energy markets in general and the electricity market in particular. Growing market concentration and an increase of market power might put the economic benefits to be reaped from liberalising the energy markets seriously at risk. Some public utilities were successful not only in preserving their position as quasi-monopolists but also in extending it in their network area beyond market liberalisation through vertical and horizontal integration of their value chain – a development that regulatory as well as competition authorities in Austria have so far failed to interfere with.

Due to two major mergers in the electricity sector – the EnergieAllianz merger in 2001 and the Verbund/EnergieAllianz merger in 2003 both of which can be viewed as the result of a political effort to create "national champions" – market concentration in the relevant antitrust markets has increased substantially.

EnergieAllianz is designed as a joint venture integrating the electricity trading and distribution businesses of five regional energy suppliers from Vienna, Lower Austria, Upper Austria and Burgenland. In these regional markets the number of potential competitors and hence competition has been reduced substantially since electricity distribution is now organised centrally by EnergieAllianz rather than the five formerly independent suppliers. Market concentration as measured by the Herfindahl-Hirshman Index (HHI) virtually 'exploded' in the electricity market for households from around 1,300 to 3,300, while it more than doubled for industrial customers from about 1,150 to 2,700. Both HHI levels and delta values (i.e. changes in the HHI level) after the merger are lying far beyond the threshold values for mergers which give no concern for the creation of market power. Despite HHI and delta values significantly above critical threshold values the EnergieAllianz merger was cleared without remedies "in the Austrian way", i.e. by withdrawing from the application of a detailed phase-II investigation before the Austrian Cartel Court.

Table 2: Market Concentration in the Austrian Electricity Sector

	EnergieAllianz		Verbund/EnergieAllianz
	Before the merger (before 1 October 2001)	After the merger (after 1 October 2001)	After the merger (hypothetical)
Private households			
CR5[1]	62.29	74.67	74.67
HHI	1,330	3,287	3,289
Industry			
CR5[1]	67.6	86.7	92.3
HHI	1,153	2,680	3,918

[1]*Combined market share of the five largest companies.*

Source: Federal Competition Authority (2004).

The Verbund/EnergieAllianz merger (publicly known by its nickname as "Austrian Electricity Solution" was intended to further deepen co-operation between Austrian energy producers and distributors by vertically integrating the electricity trading business (including power generation) of Verbund with the energy supply to industrial users by EnergieAllianz.

As a direct consequence of this merger, Verbund was expected to withdraw from all markets for final customers (private households and – specifically – industry), which would have significantly increased market concentration in the electricity market for industrial users. In terms of the HHI, it would boost an already high value of around 2,700 to around 3,900 after the merger (cf. table 2). Considering that Verbund had engaged in only limited activities in the electricity markets for private households before the merger, the direct increase in market concentration due to the merger for this relevant product market would be comparably negligible. Nevertheless, the market-dominating position of the enterprises involved in the project would be further strengthened through their better access to power generation and trading markets which would in turn further reduce the already insufficient competition intensity in Austrian electricity markets.

Because of its severe impact on Austrian electricity markets, the European Commission cleared the Verbund/EnergieAllianz merger only under the assumption that the internal electricity market was about to transform itself from a mere vision to concrete reality. Against the background of actual developments in European electricity markets, it is, however, expected that insufficient integration between national markets will be the main obstacle to the successful implementation of a competitive market for several years to come. The energy sector inquiry confirms the expected substantial competitive restraints and

distortions in European electricity and gas markets which manifest themselves more or less in all EU Member States (see section 4.1).

Even though the "Austrian Electricity Solution" had already been approved by competition authorities, Verbund has increasingly shown signs of abandoning the original merger project. In the meantime several alternative merger projects have been presented and the original merger project, whose chances for realisation have diminished substantially, has been put "on hold". Since the European Commission is, however, made more sensitive to national market concentration in energy markets, it is likely that the notification of a new merger project would face stronger headwind from competition authorities.

Apart from these two mergers on national level, regional public utilities have also formed alliances. These joint ventures have also reduced the number of suppliers and contributed to a further concentration of markets. The potential anti-competitive effects of these joint ventures call for critical examination (Cf. *Federal Competition Authority,* 2004, 2005).

Special anti-trust problems also arise from the interplay of the "Austrian Electricity Solution" and the "Austrian Gas Solution" (Econgas) considering that EnergieAllianz is a player in both quasi-monopolists, which makes not just for vertical concentration in the value chain (production – sale), but also for a horizontal concentration of the two primary energy sources (electricity – natural gas).[3]

4.4 Competitive Constraints 3: Unbundling

Non-discriminatory access to the electricity network infrastructure (power grid) has to be deemed the essential prerequisite for implementing competitive liberalised electricity markets. Since the power grid features all the characteristics of a natural monopoly and constitutes an essential facility, access regulation is necessary.

The conflict of interest faced by public utility companies which act on the market both as network operators and energy suppliers could be avoided if network operations were separated from energy distribution ("unbundling"). International experience has found that only independent network operators which are not bound by the interests of electricity producers and/or suppliers seem to be able to sustainably guarantee efficient and equal network access for all market participants.

In line with the Electricity Directive 2003/54/EC legal unbundling[4], i.e., the complete legal separation of network operations from other business fields of

[3] The latter is especially problematic since natural gas is also used for electricity generation.

[4] Depending on the gravity of intervention, four levels of "unbundling" can be distinguished: unbundling of accounts, organisational unbundling, legal unbundling and ownership unbundling.

integrated public utility companies, was finally implemented in Austria with a delay of one and a half years on 1 January 2006. This long delay was due to the sustainable reluctance of the Länder to enacting the necessary laws which can be interpreted as "obstructive action" on the part of the Länder that can be clearly attributed to conflicts of interest due to their double role as owners of public utility companies and legislative bodies as described above (see section 4.2).

The original idea behind legal unbundling could, however, be easily thwarted since the Electricity Directive 2003/54/EC does not provide binding rules for implementation in practice. This legal loophole is readily exploited by some Austrian public utilities. It can be observed that some integrated utilities have chosen to comply only to the required minimum standards, i.e. setting up a separate network company with only a small permanent staff leaving the majority of the staff on the payroll of the mother company. The additionally needed human resources are then engaged by personnel leasing contracts from the mother company. From a competition policy viewpoint these legal constructions deserve further scrutiny since the involved personnel leasing contracts could be easily used as vehicles to shift costs between network and energy supply thereby undermining the "spirit of unbundling".

5. Conclusions

The answer to the initially posed question "Will further market integration and intensified competition lead to higher growth in Austria?" is principally affirmative. By concentrating efforts on existing windows of opportunity a growth-oriented competition policy in Austria seems to be feasible.

From our analysis the following five conclusions for Austrian competition and regulatory policy could be carved out.

1. Deregulation and liberalisation of energy markets have to be complemented by *pro-active competition policy* in order to sustainably secure prices that are the result of market competition. In highly concentrated markets like the Austrian energy markets – where quasi-monopolistic market structures are the result of mergers in the past – this practically means an unexpected "renaissance of abuse control" (*Böge,* 2006).
2. *Conflicts of interests* due to the triple role of the Länder as owners of public utilities, legislative entities responsible for the framework conditions as well as supervisory institutions for unbundling need urgently to be solved. This would imply on the one hand a privatisation of public ownership in energy utilities and on the other hand a strengthening of the energy regulatory authority (E-Control) concerning the supervision of unbundling.
3. Only *uncompromising legal unbundling* will deliver the expected competition intensifying effects. This implies that the unbundling rules have to be implemented according to their inherent spirit and not just according to their

wording. If energy utilities, however, are not willing to voluntarily renounce from taking advantage of existing loopholes in the rules of legal unbundling, policy makers have to reconsider the option of the so far refused implementation of ownership unbundling.

4. The recently adopted *incentive based regulatory regime* is expected to work better for both consumers and network providers. It can be expected that this multi-dimensional challenge of fixing non-discriminatory network fees at a markedly lower level which will prove to be incentives for competition as well as for investments in the requisite infrastructure will be better mastered by the new regulatory framework which provides for ex-ante defined yearly reductions of network fees based on the electricity suppliers' individual corporate efficiency. The new regulatory framework defines clear investment planning horizons for the sector with substantial efficiency-linked price reductions for consumers. A thorough analysis of the effects of incentive regulatory regime after the end of initial period (2006–2009) will bring to light if these premature praises were deserved.
5. Any merger of Verbund and EnergieAllianz that does not involve a full integration of all involved companies into a single corporation with a uniform strategy will certainly fall short of being a '*national champion*'. The already approved "Austrian electricity solution" (and the discussed variants thereof) will only result in a cartel-like entity that is too big for the small national homemarket in Austria, but still far too small for the proposed single European energy market. According to empirical evidence the negative competition distorted effects caused by alleged 'national champions' by far outweigh the potential synergetic effects of these kind of mergers. The common political euphoria about 'national champions' which is based mainly on rather weak industrial policy arguments has therefore to be viewed with considerable scepticism. (Cf. *Monopolkommission,* 2004).

References

Aghion, P., Bloom, N., Blundell, R., Griffith, R., Howitt, P., "Competition and Innovation: An Inverted U-Relationship", Quarterly Journal of Economics, vol. 120, no. 2, May 2005, pp. 701–28.

Aghion, P., Harris, C., Howitt, P., Vickers, J., "Competition, Imitation and Growth with Step-by-Step Innovation", Review of Economic Studies, 2001, 68, pp. 467–492.

Aghion, P., Howitt, P., "A Model of Growth through Creative Destruction", Econometrica, 1992, 60, pp. 323–351.

Aghion, P., Howitt, P., "A Schumpeterian Perspective on Growth and Competition", in Kreps, D. (Ed.), Advances in Economics and Econometrics, Cambridge University Press, 1997, pp. 279–317.

Ahn, S., Hemmings, P., "Policy Influences on Economic Growth in OECD Countries: An Evaluation of the Evidence", OECD Economics Department, Working Paper, 2000, (246).

Armstrong, M., Cowan, S., Vickers, J., "Regulatory Reform Economic Analysis and British Experience", M.I.T. Press, Cambridge, MA, 1995.

Badinger, H., Breuss, F., "Has Austria's Accession to the EU Triggered an Increase in Competition? A Sectoral Markup Study", Empirica, vol. 32, no. 2, 2005, pp. 145–80.

Blundell, R., Griffith, R., Reenen, J.V., "Dynamic Count Data Model of Technological Innovations", Economic Journal, 1995, 105, pp. 333–344.

Böge, U., "Renaissance der Missbrauchsaufsicht", Statement anlässlich der 13.Handelsblatt Jahrestagung Energiewirtschaft, Berlin, 17.1.2006.

Böheim, M., "Competition and Competition Policy in Austrian Electricity Markets: A Critical Review Four Years after Market Liberalisation", INFER Advances in Economic Research, 2006 (forthcoming).

Caves, R.E., Barton, D.R., "Efficiency in U.S. Manufacturing Industries", M.I.T. Press, Cambridge, MA, 1990.

Caves, R.E., et al., "Industrial Efficiency in Six Nations", M.I.T. Press, Cambridge, MA, 1992.

Cohen, W.M., Levin, R., "Empirical Studies of Innovation and Market Structure", in Schmalensee, R., Willig, R.D. (Eds.), Handbook of Industrial Organization II, Amsterdam, 1989, pp. 1059–1107.

Conway, P., Janod, V., Nicoletti, G., "Product Market Regulation in OECD Countries: 1998 to 2003", OECD Economics Department, Working Paper, 2005, (419).

European Commission, "Energy Sector Inquiry", Draft Preliminary Report, Brussels, 2006.

Federal Competition Authority, "General Investigation of the Austrian Electricity Industry", 1st Interim Report, Vienna, 2004.

Federal Competition Authority, "General Investigation of the Austrian Electricity Industry", 2nd Interim Report, Vienna, 2005.

Fraquelli, G., Vannoni, D., "Multidimensional Performance in Telecommunications, Regulation and Competition: Analysing the European Major Players", Information Economics and Policy, vol. 12, no. 1, March 2000, pp. 27–46.

Geroski, P.A., "Innovation, Technological Opportunity, and Market Structure", Oxford Economic Papers, 1990, 42, pp. 586–602.

Geroski, P.A., "Market Structure, Corporate Performance and Innovative Activity", Oxford University Press, Oxford, 1995.

Green, A., Mayes, D.G., "Technological Inefficiency in Manufacturing Industries", Economic Journal, 1991, 101, pp. 523–538.

Grossman, G.M., Helpman, E., "Innovation and Growth in the Global Economy", M.I.T. Press, Cambridge, MA, 1991.

Hayek, F.A., „Der Wettbewerb als Entdeckungsverfahren", Tübingen, 1968.

Hermalin, B.E., "The Effects of Competition on Executive Behavior", Rand Journal of Economics, 1992, 23, pp. 350–365.

Kratena, K., "Makroökonomische Evaluierung der Liberalisierung im österreichischen Energiemarkt", WIFO, Vienna, 2004.

Leibenstein, H., "Allocative Efficiency Versus X-Inefficiency", American Economic Review, 1966, 56, pp. 392–415.

Levin, R.C., Cohen, W.M., Mowery, D.C., "R&D Appropriability, Opportunity, and Market Structure: New Evidence on Some Schumpeterian Hypotheses", American Economic Review, Papers and Proceedings, 1985, 75, pp. 20–24.

Monopolkommission, 'Wettbewerbspolitik im Schatten "nationaler Champions"', 15. Hauptgutachten, Bonn, 2004.

Mookherjee, D., "Optimal Incentive Schemes with Many Agents", Review of Economic Studies, 1984, 51, pp. 433–446.

Nickell, S.J., "Competition and Corporate Performance", Journal of Political Economy, 1996, 104, pp. 724–766.

Nicoletti, G., Scarpetta, S., "Regulation, Productivity and Growth: OECD Evidence", OECD Economics Department, Working Paper, 2003, (347).

Nicoletti, G, Scarpetta, S., Boylaud, O., "Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation", OECD Economics Department, Working Paper, 1999, (226).

Nicoletti, G., Bassanini, A., Ernst, E., Jean, S., Santiago, P., Swaim, P., "Product and Labour Markets Interactions in OECD Countries", OECD Economics Department", Working Paper, 2001, (312).

Nicoletti, G., Scarpetta, S., Boylaud, O., "Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation", OECD Economics Department, Working Paper, 2000, (226).

OECD, Economic Survey Austria 2003, Paris, 2003.

Porter, M.E., "The Current Competitiveness Index: Measuring the Economic Foundations of Prosperity", in World Economic Forum, The Global Competitiveness Report 2000, Genoa, 2000.

Romer, P.M., "Endogenous Technological Change", Journal of Political Economy, 1990, 98, pp. 71–102.

Sapir, A., "An Agenda for a Growing Europe: The Sapir Report, Oxford – New York", 2004.

Scarpetta, S., Hemmings, P., Tressel, T., Woo, J., The Role of Policy and Institutions for Productivity and Firm Dynamics: Evidence from Micro and Industry Data", OECD Economics Department, Working Paper, 2002, (329).

Scherer, F.M., "Market Structure and the Employment of Scientists and Engineers", American Economic Review, 1967, 57, pp. 524–531.

Schumpeter, J.A., "Theorie der wirtschaftlichen Entwicklung", 4. Auflage., Duncker & Humblot, Berlin, 1911/1934.

Schumpeter, J.A., "Capitalism, Socialism and Democracy", Harper & Row, New York, 1942.

Scott, J.T., "Firm versus Industry Variability in R&D Intensity", in Griliches, Z. (Ed.), R&D, Patents, and Productivity, University of Chicago Press for National Bureau of Economic Research, Chicago, 1984.

Seong, S., "Competition, Competition Policy and Economic Growth", Korea Development Institute, Working Paper, 2002, (2002 05).

Vickers, J., "Concepts of Competition", Oxford Economic Papers, 1995, (47), pp. 1–23.

Willig, R.D., "Corporate Governance and Market Structure", in Razin, A., Sadka, E. (Eds.), Economic Policy in Theory and Practice, Macmillan, London, 1987, pp. 481–494.