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Competitiveness of the Bulgarian Economy

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РЕЗЮМЕ. Преобладава мнението, че реалното поскъпване на лева спрямо еврото (а от 2002 г. и спрямо долара) не се отразява отрицателно на конкурентоспособността на икономиката. Международните сравнения на разходи за труд за единица продукция (РаТЕП) обаче отреждат на България място в дъното на класацията по ценова конкурентоспособност сред страните в процес на присъединяване към ЕС. Отдавайки дължимото на обширната и многопосочна литература и международни сравнителни класации и индекси на конкурентоспособност на икономиките, това изследване прави кратък преглед на основните методи за оценка и сравнение и на мястото, което те отреждат на България, като се опитва да ги обясни в контекста на тройното предизвикателство на преход, присъединяване и валутен борд. То обаче поставя производителността в основата на обяснението и измерването на измененията в конкурентоспособността на предприятията и отраслите на икономиката. В съответствие с водещата засега специализация и конкурентни предимства на българската икономиката материалът поставя акцента върху факторите, които определят конкурентните предимства, свързани със себестойността на продукцията и преди всичко ефективността на разходите за труд, анализирани тук с показателя РаТЕП. Така очертаните секторни конкурентни предимства са разгледани в контекста на действителните експортни тенденции в годините на валутен борд. На тази база проучването прави опит да очертае основните насоки на икономическата политика за повишаване на конкурентоспособността на икономиката в краткосрочен и дългосрочен план.

Мненията и изводите в дискусионния материал са лични и по никакъв начин не ангажират и не изразяват позиции на Световната банка или на БНБ. Авторът благодари на Анелия Дамянова (Център за икономическо развитие), Георги Ганев (Център за либерални стратегии), Георги Стоев (Институт за пазарна икономика) Петкан Илиев (Център за изследване на демокрацията), Андрей Брешков (Министерство на икономиката), Петьо Николов и Бернард Фънк (Световна банка) за ценните им идеи, помощ и коментари върху работните версии на материала. Отговорността за евентуални пропуски и неточности е изцяло на автора.

JEL classification: D24, F10, L11

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Executive Summary

(i) Despite the prevailing consensus in the literature that real appreciation has not, at least until recently, affected Bulgaria's competitiveness, international comparisons rank Bulgaria very low in terms of cost competitiveness among comparator accession countries. Even before the recent nominal appreciation of the lev against the US dollar, the higher inflation in Bulgaria resulted in appreciation in real terms against the anchor currency, the euro, thus eroding Bulgaria's cost competitiveness in the euro zone.

(ii) During the years of CBA wages registered impressive growth in real terms. Still Bulgaria's average wage remains the lowest among accession countries and roughly at the level of the pre-crisis 1995. Low wages certainly remain the country's most important comparative advantage, but sustaining this advantage is hardly consistent with its accession and convergence challenges. The cost advantage should come from productivity gains rather than from low labor costs.

(iii) Productivity developments over the years of CBA show average annual gains of 7.3 percent. Nevertheless, in 2002 Bulgaria's productivity remains only 30 percent of the EU average. This report studies competitiveness of the manufacturing sector, which by 2002 has become about 95 percent private. Annual productivity gains in manufacturing average 8.2 percent reflecting growth in gross value added against shrinking employment. Productivity performance overweighs wage growth by about six percentage points resulting in 25 percent cumulative competitive gain in terms of ULC between 1997 and 2002.

(iv) The industrial subsectors' competitive performance and contribution to this overall result diverge largely. The highest gains have been scored in the subsector of textiles and clothing. Between 1997 and 2002, it gained about 40 percent in ULC competitiveness. Accordingly, its weight in Bulgaria's overall exports grew from 12 to 24 percent (from 23 to 31 percent in EU trade). Its export-import ratio improved, and its share in EU imports from CEEC expanded from 6.4 percent in 1997 to 8.2 percent in 2001. This expansion has been driven by production of clothing with material supplied by the foreign investor and distributor of the final product. It has the strongest impact on the new pattern of trade specialization and competitive advantage of the manufacturing sector. But this impressive improvement in competitive capacity has been achieved through significant drop in wages rather than through an increase in productivity.

(v) A similar export success, but with far lower weight in overall exports is the footwear industry. The share of Bulgarian manufacturers in overall

EU imports grew to 7.3 percent. This, however, cannot be explained by ULC gains. The sector of leather manufactures registered loss in productivity against increase in real wages. The competitive advantages here obviously stem from superior quality and design, branding and marketing strategies that come with FDI.

(vi) The competitive performance of such traditional for Bulgaria sectors like metals is deteriorating. Bulgarian metallurgy succeeded at least until 2001 to preserve its share in EU imports from the CEEC. It still sustains competitive edge in terms of export-import ratio. But this advantage was seriously eroded during the reviewed period, especially in regard to ferrous metals. In contrast, nonferrous industry's export performance has improved. The overall decline in export-import ratio can certainly be attributed to losses in cost competitiveness of the sector. Productivity there declined by 10 percent, while wages grew in real terms by 3 percent between 1997 and 2002.

(vii) Bulgaria's manufactures of mineral products, wood and furniture, and ceramics and glass also expanded their share in the EU market. The expansion reflects largely the ULC gains registered by these industries between 1997 and 2002.

(viii) Bulgaria has not yet entered the competition in the world of differentiated products. Actually it scored high in terms of productivity gains and ULC in machinery and equipment and managed to double its exports to the EU in value terms, but its share in CEEC exports is still insignificant and continues to decline.

(ix) The emerging pattern of competitive advantage and export specialization puts cost competitiveness in the center of economic policy considerations in the short run. Currently Bulgaria is sustaining and developing competitive advantages in homogeneous labor intensive and material intensive products, for which cost competitiveness has primary importance. In this context the flexibility of labor market, the alleviation of payroll tax burden, the reduction of administrative and regulatory cost of doing business and the liberalization of factor, goods and service markets would constitute the main issues on the policy agenda of competitiveness.

(x) In the medium and long run the major competitiveness challenge of economic policy would be to facilitate the transition of the manufacturing sector from competition in homogeneous material and labor-intensive products into technology and knowledge-intensive products. Whether or not Bulgarian manufacturing would succeed in this challenge, would depend much on the government's success in attracting FDI and in encouraging technology diffusion and innovation.

Introduction

In the run-up to the EU accession target date of 2007 the issue of competitiveness of the Bulgarian economy becomes of primary importance. The 2002 EC Regular Report on the progress towards accession acknowledged that Bulgaria is a functioning market economy. But the second part of the Copenhagen economic criteria for accession refers to the capacity of the economy to withstand competitive pressures within the Union. Competitive pressures are expected to grow. The EU 2000 Lisbon program calls for making the EU the most competitive and dynamic knowledge-based economy in the world by 2010. Bulgaria's *National Economic Development Plan 2000–2006* identifies competitiveness of the economy as a number one policy priority. In 2002 the Government approved a *Program for the Revival of the Bulgarian Industry*. In 2003 it is drafted a comprehensive program *Raising the Competitiveness of the Bulgarian Economy*. Nevertheless, pressures from various manufacturer groups for temporary safeguard measures, tax breaks, and other forms of state support are a clear sign of problems with Bulgaria's competitive capacity.

There is no consensus in the literature on the concept of competitiveness, accordingly – on the ways to monitor and measure it, and even less so on the adequate policy instruments to improve it. In its broadest interpretation the concept covers various aspects of economic performance and efficiency: from product price, costs and quality, and the firms' capacity to adapt to consumer preferences and to introduce new technology, to the macroeconomic, institutional and policy environment, quality of financial intermediation, flexibility of factor markets, *etc*.

This study focuses on a narrower interpretation of competitiveness, which is more consistent with the short and mid-term competitive challenges faced by Bulgaria. It is based on the country's productivity performance, which reflects the productivity and competitiveness of its companies. Productivity and competitive gains are achieved at the level of producers/suppliers of goods and services. In this regard the conceptual framework follows what seems to be a broad consensus in the recent literature on competitiveness about the leading role of microeconomic fundamentals in raising a country's competitiveness. The role of suppliers of goods is discussed here at sector level. The analysis focuses on the manufacturing sector and its subsectors.

Even though competitive performance is set at the level of the firms, the state has an important role in setting the national competitiveness policy platform. Its role encompasses a wide variety of policies designed to improve the microeconomic and macroeconomic environment in which the companies op-

erate. The right timing and sequencing of the policy objectives and instruments is important because potential sources of competitive advantage vary according to the stage of economic development. Initially companies operate in the context of factor-driven competition, where cost and price competitiveness are the major sources of competitive advantage. Furthermore, economic development goes through an investment-driven stage up to an innovation-driven stage, where companies compete increasingly in satisfying changing customer preferences, offering better quality and features rather than on price advantages. In this context Bulgaria's short term challenges are very much related to cost and price competitiveness, which is the main focus of the report. In the mid- and long-run, economic policy needs to address as well the challenges of transition from factor-driven to investment- and technology-driven competitiveness. That would require the development of the relevant education and R&D infrastructure.

This report does not set itself the ambitious task of drawing a comprehensive policy program along these lines. It has mainly diagnostic objectives. It aims to plot Bulgaria's competitive performance into coherent conceptual framework, that may help the discussion and identification of the relevant policy platform. It also draws some short- and long-term policy implications, and tries to identify immediate steps that would improve companies' cost competitiveness.

In the short run Bulgaria's competitiveness priorities will be very much determined by the requirements of the second economic criterion of Copenhagen. It measures the preparedness of an accession country to join the Union through the capacity of its economy to withstand competitive pressures and market forces within the Union. Assessment of this capacity is based on the following subcriteria:

- the existence of a functioning market economy, with a sufficient degree of macroeconomic stability for economic agents to make decisions in a climate of stability and predictability;
- a sufficient amount at an appropriate cost of human and physical capital, including infrastructure (energy supply, telecommunication, transport, *etc*.), education and research, and future developments in these fields;
- the extent to which government policy and legislation influence competitiveness through trade policy, competition policy, state aid, support to SME, *etc*.;
- the pre-accession degree and pace of integration with the Union in terms of volume and structure of trade with member states;
- the proportion of small firms as an indicator of the flexibility of the economy to adjust, and the scale of the expected benefits from enlargement.

The Copenhagen framework is fairly consistent with the concept used here. This study, however, does not follow the above structure. It does not aim at what might be the highest accession priority of the day: i.e. the evaluation of the fulfillment of the second Copenhagen criterion. Bulgaria's competitive potential and prospects in terms of macroeconomic stability, human capital, infrastructure, regulatory and institutional environment, and other aspects of the business climate is evaluated and monitored through the various indexes, rankings, and surveys, reviewed in the first part of the study. Then it goes beyond the macro- and microdeterminants of competitiveness, and tries to analyze more direct measures of competitiveness, based on cost and productivity indicators.

The first section outlines the concept of competitiveness. It draws on the vast literature on competitive advantages and the various methodologies applied today to evaluate and rank a country's performance in international perspective. In the first and second subsections it discusses the role of the producers/suppliers of goods and services and the role of the state and economic policy. It looks at Bulgaria's current competitive position as identified by research analyses and international rankings. It plots these assessments in the specific context of the country's steep reform path of transition and accession. In the third subsection it defines the framework of cost and trade competitiveness, which forms the focus of this report.

Sections two to four look at the effect of the real appreciation of the lev, and of labor costs and productivity developments on an economy-wide level. Section five presents the performance of the manufacturing sector. Section six tries to plot the evidence from cost and productivity advantages against the evidence of trade performance. Section seven concludes.

1. The Concept of Competitiveness

1. There is a growing number of economists that reject the idea that nations compete with each other. It is enterprises, not nations, they assert, that compete internationally. While there is little doubt that competitive gains are realized at the level of the producer of goods and services, the government has increasing responsibility to make this happen. International experience reveals a wide range of policy measures: from creating an environment for companies' operations, which is most conducive to fair and transparent competition, to many direct incentives like tax breaks, subsidies, export promotion measures, *etc*. This section draws a distinction between the role of the manufacturer and the state in international competition. It presents evidence from international rankings and research on Bulgaria. Against this background the section defines the scope of cost and productivity analysis.

1.1. The Role of Manufacturers

2. Competitiveness became a major policy debate in the 1990s, triggered largely by Michael Porter's book *Competitive Advantage of Nations*. In contrast to the common belief that the clue to competitiveness lies in factor endowments and income, exchange rate and export-promotion policies, Porter emphasizes the microeconomic fundamentals of competitiveness. National competitiveness is defined in terms of productivity, which is achieved and delivered at the level of the firms. National competitiveness is interpreted in terms of prosperity and wealth creation rather than in terms of competition in price, cost and market shares. Porter, however, seems skeptical about the rationale of the concept on a national level:

> "We must abandon the whole notion of a 'competitive nation' as a term having much meaning for economic prosperity. The principal economic goal of a nation is to produce a high and rising standard of living for its citizens. The ability to do so depends not on the amorphous notion of 'competitiveness', but on the productivity with which nation's resources (labor and capital) are employed. Productivity is the value of output produced by a unit of labor or capital. It depends on both the quality and features of products (which determine the prices they can command) and the efficiency with which they are produced" [1].

3. Porter evaluates the microeconomic fundamentals of productivity in two interrelated areas: (a) the sophistication of companies' operations and strategy; and (b) the quality of the microeconomic business environment. The company's sophistication reflects the way a company chooses to compete: whether it relies on cheap inputs, or rather on sophisticated products for better customer satisfaction; whether it is driven by supply factors or demand considerations, whether it invests in marketing, training, R&D, own branding, and how much it relies on technology transfer and innovation.

The microenvironment for business is assessed in terms of four interrelated areas collectively referred to as Porter's diamond:[2]

- **factor conditions** include human and capital resources, physical infrastructure, institutional infrastructure, ICT infrastructure, science and technology, and natural resources.
- **demand conditions** relate to sophistication of domestic demand and the pressures from local consumers to upgrade supplied products and services.
- **the context for firm strategy and rivalry**, i.e. the intensity of rivalry and the types of strategies used by competitors.

[1] *Porter* (1990), p. 6.
[2] *Ibid.*, p. 71–73.

- **related and supporting industries**; i.e. the availability and quality of local suppliers and the degree of development of industrial clusters,

4. An important postulate of Porter's theory is that sources of competitive advantage vary according to the stage of development. Companies face different challenges driving productivity and competitiveness through the subsequent stages of development: from the factor-driven stage through the investment-driven stage and up to the innovation-driven economy.[3] Initially competitive advantages of nations are predominantly factor-driven and reflect low-cost labor and natural endowments. Companies produce and export commodities and simple manufactures, designed abroad, and compete mainly on price. Technology transfer is limited and takes place through imports, FDI and imitation. In the investment-driven stage productivity gains are driven mainly by investment, and efficiency is more important than cost of inputs. The economy shifts to more sophisticated traded products, but they still depend on technology diffusion through FDI, OEM partnerships, *etc*. In the innovation-driven stage the capacity of the company to create rather than to acquire new technology becomes the major source of competitive advantage.

5. Porter's analytical framework was further refined and tested in practice in the Microeconomic Competitiveness Index (MICI)[4] rankings by the Global Competitiveness Report (GCR) of the World Economic Forum. In line with the concept described above MICI is the weighted average of two subindexes The first one measures the degree of sophistication of companies' operations and strategy and has a weight of 0.37 in the aggregate MICI. The second component, with a weight of 0.63, measures the quality of the microenvironment. Each of the two components consists of various variables, which are derived mainly from survey data. The efficiency of the index construction is verified through regressing it to what is accepted by Porter as the best single summary 'hard-data' measure of microeconomic competitiveness available across all countries – the PPP adjusted GDP *per capita*.[5] The MICI variables explain 81 percent (R2 = 0.8153) of the variance of GDP *per capita* across the 80 comparator countries in the 2003 report. To identify more precisely the different sources of competitive advantage at the different stages of development, Porter divides the countries into three groups according to the level of their PPP-adjusted GDP *per capita* (GDP p/c): 31 low-income countries with GDP p/c below USD 6,800; 26 middle income countries with GDP p/c between USD 6,800 and USD 20,000 and 23 high-income countries with GDP p/c above USD 20,000.

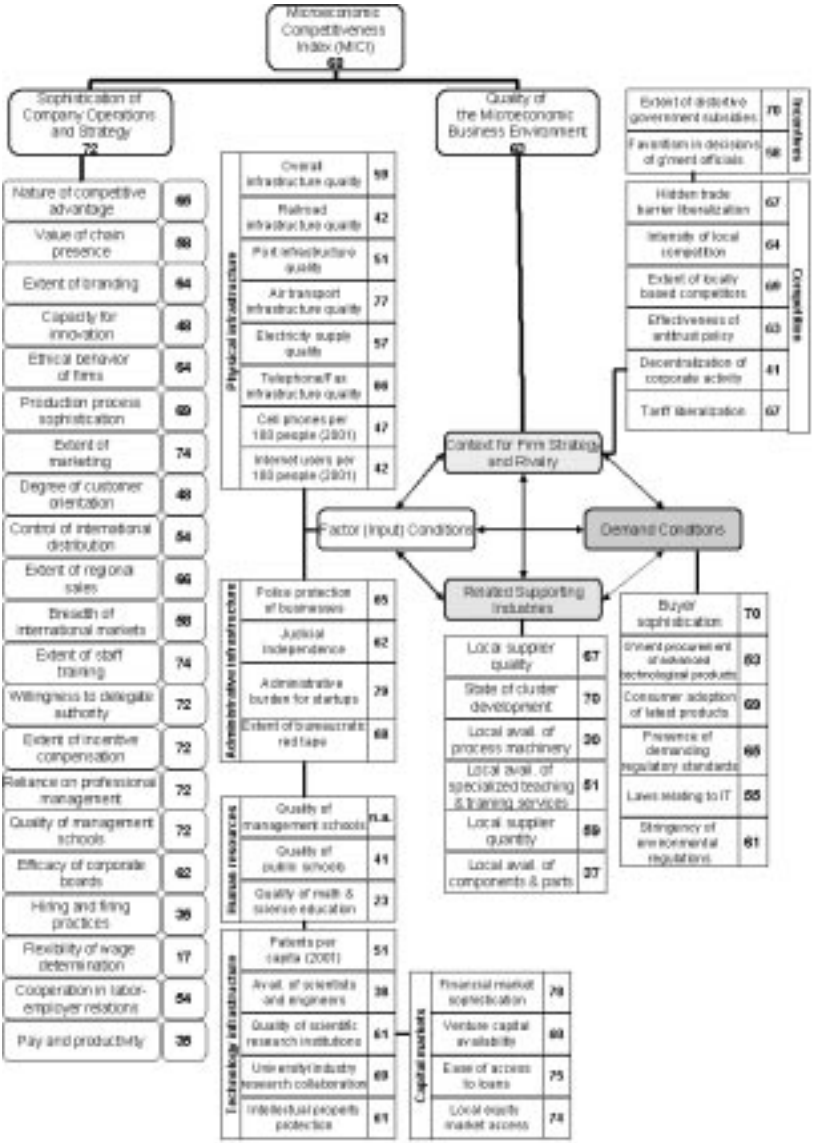
[3] *Ibid*., p. 545–556.

[4] Until the 2003 report MICI was known as Current Competitiveness Index. It was first introduced in the 1998 edition of the report.

[5] *Porter* (2003), p. 8.

Figure 1

BULGARIA'S 2003 GCR MICROECONOMIC COMPETITIVENESS RANKINGS BY COMPONENTS



6. Bulgaria stands out in the latest 2002 ranking as the only accession country in the low-income group. This implies that Bulgarian companies rely mainly on cost advantages achieved through low cost factor inputs rather than through product quality and feature improvements. Not surprisingly Bulgaria is ranked 68th out of 80 countries. Figure 1 shows the underlying rankings. Looking backward, no trend of improvement is observed. In its first micro-competitiveness assessment in 1999 Bulgaria was 54th out of 58 countries. Then the ratings went down for the next three years, and improved for the first time in the last report, resulting in only two positions improvement in 1999–2002 (i.e. in 2002 Bulgaria ranks 52nd in the 1999 group of comparators). Looking forward, the MICI framework does not provide much ground for optimism either. Plotting the level of the current GDP *per capita* (in which Bulgaria is ranked 56th) against the MICI ratings, the regression implies that in the short run the country might be more likely to slow down to a level consistent with the MICI, rather than to sustain competitive growth rates (unless they can be attributed to abundant natural endowments or FDI inflows, which is not the case with Bulgaria.)

7. Bulgaria's ranking in the subcomponents of the MICI are even more interesting. They show that the country is doing better in terms of microeconomic environment (63rd position) relative to the companies' operations and strategy (72nd position). This means that even though not high, the competitive potential of the business environment is not fully utilized by the companies. They are relatively less developed and sophisticated than the microenvironment in which they operate. The major weaknesses on the company side (i.e. in which Bulgaria ranks among the last ten countries) are related to HR management and practices (training, delegation of authority, system of incentives, management skills) as well as marketing and production technology. The relative advantages (where Bulgaria ranks among the top 40 countries) are related to flexibility of wage determination, hiring and firing practices and pay and productivity (Figure 1).

8. The environment in which companies operate (grouped in the four components of the diamond on Figure 1), is slightly better than the capacity of the companies, but still there is a long way to go towards sustainable competitive advantages. On the factor side, Bulgaria's strongest advantages (top 40 rankings) seem to be related to the legacy of the pre-transition education and R&D infrastructure: quality of math and science education and availability of scientists and engineers, and quality of public schools. The biggest competitive disadvantages seem to be related to administrative burden for start-ups, access to financing and infrastructure. As for the other three corners of the diamond, the biggest competitive disadvantages stem from distortive sub-

sidies and the low level of buyer sophistication and cluster development. Cluster development, however, is likely to benefit from relatively good local availability of machinery and components. As for the context of company competition, the MICI variables seem to ignore the damage inflicted by the shadow economy, corruption and noncompliance.

9. Even though not specially designed for economies in transition, Porter's analytical framework could help to understand better Bulgaria's competitive performance in the 1990s.[6] After the demise of the Council for Mutual Economic Assistance and the collapse of the ex-Soviet markets Bulgaria went through an abrupt shift of its export specialization from sophisticated to primary products, moving down to the factor-driven stage of development. In 1990 Bulgarian exports were 59 percent dominated by the group of machines and equipment, consisting mainly of computer products and fork-lift trucks (Table 1). By 1995 the export pattern had changed drastically. Primary exports (metals, fuels, mineral raw materials, chemicals and plastics) took the lead with 44 percent of exports and preserve this share until today. Food, beverage and tobacco exports initially expanded, but in the recent years were crowded out by consumer manufactures (textiles, clothing, footwear, wood and furniture). Machines and equipment shrank sharply to about 15 percent in 2002.

Table 1

SHIFT IN BULGARIA'S EXPORT PATTERN 1990–2002

(percent of total exports)

	Food, beverages, tobacco	Machines, equipment, appliances	Metals, fuels, mineral raw materials	Chemicals, fertilizers, plastics, rubber	Textiles, clothing, leather, medicine, cosmetics
1990	14.7	59.1	7.7	3.9	13.8
1995	21.6	12.3	28.3	15.8	21.9
2002	5.0	15.0	31.0	12.0	36.0

Source: BNB; *Gotchev* (ed), 1997, Table 3.1, p. 26.

10. ***Sophistication of companies' operations and strategy***. Porter's analytical focus on companies and the business environment provides a good starting point in understanding Bulgaria's positioning in the low end of the competition scale. It is very much related to the quality of the nascent private sector and the low level of companies' strategies and operations. The latter

[6] An extensive amount of surveys and studies have been done in Bulgaria by USAID (www.competitiveness.bg), the Center for Economic Development (www.ced.bg) and the Institute for Market Economics (www.ime-bg.org). Most of them are inspired by Porter's conceptual framework. See, for example, *Gotchev* (ed) (1997), *IME* (1999), *CED* (2000, 2001), and *USAID* (2002).

reflects the specifics of Bulgaria's transition, which was adversely affected by delayed privatization and structural reforms. In contrast to other CEEC, which had been exposed to limited attempts for market reforms in the pre-transition times, Bulgarian enterprises had virtually no experience whatsoever in demand and market oriented management practices.

11. The achievements of the first five years of transition were limited to trade and price liberalization, the latter being partly reversed by restoration of some price controls by 1996. It was not before 1996 that privatization and restructuring actually started. Large part of production in the pre-CBA period was run by the state following the logic of supply-side factor-driven management practices. Moreover, the combination of big-bang price, trade and exchange rate liberalization and frozen privatization provided good environment for rent-seeking and siphoning out of resources from the manufacturing SOEs into private supply and distribution companies. This redistribution of resources was very much fuelled by the prevailing soft budget constraints and the 'cooperation' between state administration, SOE mangers, newly emerged non-supervised commercial banks and their supply and distribution partners from the emerging private sector. Under these circumstances, firms' productivity and investment were the last priorities in the years of pending privatization and restructuring.

12. Consequently, by 1996–1997 the economy was brought to collapse with 34 percent drop in real output relative to 1990, hyperinflation price levels, and bankruptcy of one third of the banks. The financial and political crisis resulted in the introduction of Currency Board Arrangement on July 1 1997, which marked the end to the period of economic turmoil and failed stabilization attempts and allowed privatization to finally take off. The delay however had badly affected the quality of the assets sold. The way many of them were privatized, was not conducive to productivity and competitive gains either. Successive rounds of voucher privatization, manager-employee buy-outs, or direct (not quite transparent) negotiations with 'strategic' investors did not provide the shortest and smoothest transition from state ownership to efficient and competitive management. In this big-bang exercise few deals actually connected the former SOEs with owners and managers that had the financial and managerial capacity to raise productivity through investment. Therefore the level of sophistication of company strategy and operations remained low.

13. ***The microeconomic environment*** of transition does not provide much competitive advantages either. On the *factor side* Bulgaria's microeconomic competitiveness benefits from such natural endowments as abundant arable land, good geographic position, mineral resources, as well as relatively quali-

fied and low-cost human capital. On the negative side, there are the insufficient energy resources, the limited access to financing in the aftermath of the bank crisis of 1996–1997, the bad quality of the infrastructure, including the ICT infrastructure, the inefficiency of public institutions and the collapse of research and development capacities. On the *demand side*, due to low level of personal incomes, domestic market and customer choice are very much price- and cost-driven. Consequently, producers do not feel much pressure from consumers towards quality and feature upgrading, and do not attach much priority to consumer preferences and to meeting more sophisticated demand.

14. The *quality and intensity of competition* are very much a reflection of the unfinished restructuring and institutional reform agenda. First, there is a serious delay in the second phase of restructuring and privatization – the one focusing on state monopolies, including those in infrastructure, energy and utilities. It was scheduled to start in 2000,[7] but failed to do so by 2003. The tobacco holding Bulgartabak, the telecom BTC, the electricity distribution sector, the water companies, the national air carrier, the railways, the shipping companies have all gone through various unsuccessful privatization and restructuring attempts and are still to be privatized.

15. Furthermore, the context of companies' rivalry is strongly influenced by the underdevelopment of the institutional and regulatory environment of competition. Regulatory and antitrust institutions are relatively new and inefficient. Contract and law enforcement is also weak and presents a constraint to investment and competition. Third, the administrative and regulatory costs of doing business have remained high, constituting a major constraint to the competitive performance of the firms. Weak institutions and law enforcement on one hand, and high administrative and regulatory costs of doing business, on the other, constitute the perfect basis for corruption, noncompliance and steep growth of the shadow economy. A recent study estimates the share of the gray economy of Bulgaria at 36.9 percent, which is the highest among the accession countries.[8] The shadow economy explains the low quality of inter-firm rivalry and the overreliance on noncompliance. It distorts the market signals, and provides uneven playground for the different companies and different drivers to business activities.[9]

[7] See *World Bank* (2001), p. 20–21.

[8] *Schneider* (2002), p. 13. For an extensive discussion of the shadow economy in Bulgaria, see *Center for the Study of Democracy* (2003); and *Coalition 2000* (2003, 2002).

[9] Except for the damage that the unreported economy inflicts on the competition and investment climate, it affects directly the statistical data on which this study relies for its major observations. Thus, gains in competitiveness may be explained in some part by underreporting of wage costs, and/or outflow of workers from SOE to the gray economy, rather than by gains in productivity. And *vice versa*: the registration of employment contracts in 2003 and the introduc-

16. *The quality of related and supporting industries*. An assessment of Bulgaria's cluster competitiveness is provided in *Gotchev* (ed) (1997) on manufacturing exports and services; in *IME* (1999) for agriculture and food, canning, wine, and textiles; in *CED* (2001) on software industry and tourism. The most recent in this series, the USAID-sponsored Bulgaria Competitiveness Study[10] (2002) uses an 'extended' version of Porter's diamond to evaluate the performance of six industrial clusters: IT industry, tourism, canning, wine, maritime transport, and clothing. This version puts top priority on demand conditions and the firm's capacity to adjust to consumer preferences and provide the customer with more value through continual strategic innovation. The analysis in all these studies indicate that despite having good potential for development, Bulgaria's competitive clusters are at a fairly early stage of development and still do not contribute to the country's competitiveness.

1.2. The Role of the State

17. Based on above review, the policy implications of the microeconomic view of competitiveness in the context of Bulgaria would be largely related to the government's responsibilities in the following interrelated areas:

- **On the supply side** government responsibilities encompass the development and maintaining of sound financial intermediation system, developing the human capital, investing in infrastructure (including ICT infrastructure) and innovation-promoting policies.
- **On the demand side**: strengthening customer protection policies, liberalizing imports, introduction of EU technical requirements and conformity assessment, *etc*.
- **On the competition environment**: completing restructuring and deregulation, building the best regulatory and institutional environment for competition, reducing entry barriers, reducing the administrative and regulatory obstacles to business, strengthening law enforcement and compliance, strengthening contract enforcement and insolvency procedures, *etc*.
- **On clusters**, the government needs to have clear priorities and work in close cooperation with the respective business associations in the interests of all stakeholders and society as a whole. There has been a lot of policy debate on various recent initiatives such as industrial zones, free-trade zones, tax incentives and subsidies, equity funds with state participation directed to priority sectors. Most of these have shown limited effect in

tion of minimum insurance thresholds may show on the statistics as increased wage costs *per* unit of production and losses in productivity.

[10] *J. E. Austin Associates, Inc./MSI–Bulgaria* (2002).

many other countries and need careful cost-benefit analysis. The best policy that the government could adopt is to leave entrepreneurship to the commercial banks and private sector, who have much better capacity for risk assessment and undertaking, and concentrate on areas, where private sector is not likely to invest: e.g. development of the education and infrastructure prerequisites for the respective priority clusters.

18. ***Beyond the microeconomic fundamentals***. The role of the state, however, goes well beyond the microeconomic fundamentals. An alternative ranking of countries according to their competitive performance and potential is presented by the World Competitiveness Yearbook (WCY) compiled by the Institute of Management Development.

19. The WCY conceptual framework developed by a team led by Stephane Garelli[11] does not depart from Porter in the understanding that, 'economic value is only created within the context of an enterprise.' Nevertheless it places the emphasis on the side of the authorities. According to the WCY definition, 'Competitiveness of nations looks at how nations create and maintain an environment which sustains the competitiveness of their enterprises.' In contrast to the MICI rankings, the WCY focuses primarily on hard data with time series since 1989. Rankings incorporate 315 criteria divided into 4 groups: economic performance; government efficiency; business efficiency and infrastructure. This structure provides a coherent conceptual framework for identifying the major sources of a country competitive disadvantages and drawing the relevant corrective policy measures. Furthermore, while the MICI concept divides the countries into three groups according to the level of GDP p/c, the WCY divides the countries according to the size of the population (below and above a threshold of 20 million) to take into account the different competitive challenges faced by big and small countries.[12]

20. Actually, the Global Competitiveness Report does not rely on MICI only. It applies it in tandem with another index: the Growth Competitiveness Index (GCI) developed by a team lead by Jeffrey Sachs. The GCI is designed to provide an estimate of the underlying prospects for growth over the medium term (i.e. 5–8 years).[13] Similarly to the IMD index it resorts widely to hard data, and estimates the country's competitive potential in much closer relations to what the state can deliver in terms of macroeconomic and institutional environment and technology and innovation policies. It is comprised by

[11] *Garelli* (2003).

[12] IMD *World Competitiveness Yearbook 2003* rankings include 30 big and 29 small countries according to population.

[13] The GCI is presented in details in *McArthur* and *Sachs* (2002).

three subindexes: the level of technology, the quality of public institutions, and the macroeconomic conditions related to growth.

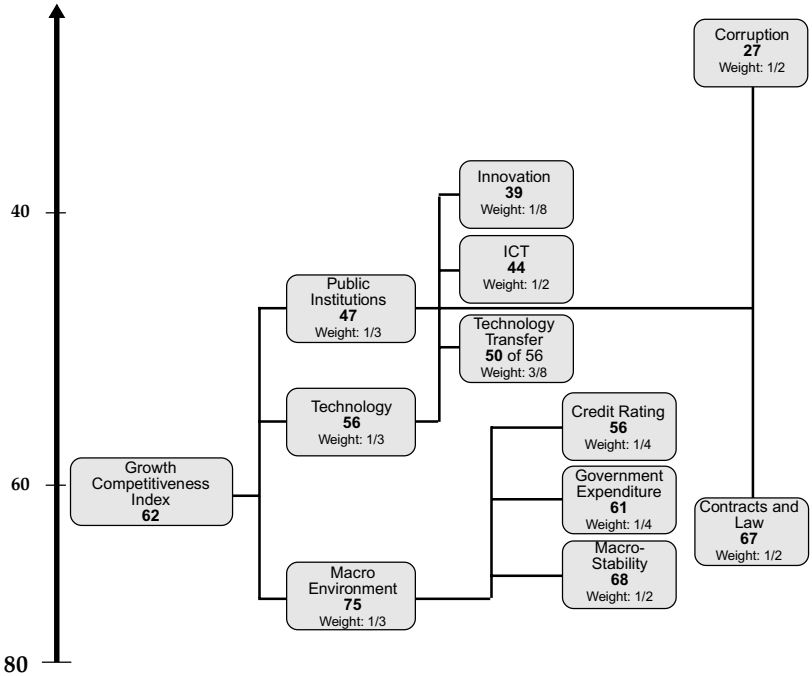
21. In line with new growth theories and the impressive recent pace of technological progress, the GCI is attaching primary importance to technology. The GCI framework distinguishes the group of the so called *core innovators* from the rest. These are 24 countries, whose companies have registered at least 15 US utility patents *per* million population. Innovation has primary importance for growth, which is why the technology subindex has 50 percent weight, while the other subindexes have 25 percent each. The technology subindex has two components: innovation and ICT. For the rest of the countries, which are catching up with the core economies, growth is largely determined by investment together with technology, therefore the index attaches equal weights of 1/3 to technology, public institutions and macroeconomic environment. Furthermore, in that group growth is driven much more by technology transfer than by innovation. Correspondingly, the technology subindex is composed of three components: innovation (1/8 weight), technology transfer (3/8) and ICT (weight 1/2).

22. The 2003 GCI rankings place Bulgaria 62nd out of 80 countries in terms of mid-term prospects for growth (Figure 2). There is only slight improvement of two positions up relative to the previous year ranking. In contrast to the general view, Bulgaria's low GCI ranking mirrors above all a relative underperformance in terms of macroeconomic fundamentals.

23. The macroenvironment subindex ranks Bulgaria 75th out of 80 countries and outweighs the higher ratings of the other two subindexes: technology (56th position) and public institutions (47th position). The macro subindex has three components that determine the mid-term prospects of growth: macrostability, creditworthiness, and the size of the state (public expenditure as a percent of GDP). Bulgaria's mid-term growth competitiveness prospects seem worse in terms of macrostability (Figure 2). Even though such an assessment may seem inconsistent with the recent track record of growth with low inflation and good fiscal performance, the latter are not sufficient macroconditions for growth. Growth prospects are mainly determined by the national savings and investment rates, the efficiency of monetary and financial system measured among others by the interest rate spread and the business' perceptions about access to credit. With national savings rate of 13.8 percent of GDP in 2001 (71st), investment rate of 17.8 percent of GDP (66th) and public expenditures of 41 percent of GDP (61st), Bulgaria is among the countries at the bottom of the GCR ranking in terms of macroeconomic environment conducive to growth.

Figure 2

BULGARIA'S 2003 GCR GROWTH COMPETITIVENESS INDEX RANKING



24. Bulgaria is doing better in terms of the technology index. Its innovation component is based on the number of invention patents and tertiary enrollment. In terms of US utility patents Bulgaria lost a lot of its innovation potential in the years of transition. It ranked 25th together with Singapore in the number of registered innovation patents in the ten-year period of 1980–1989. By 2001 it has dropped to 51st position, while Singapore ranks 14th among core innovators. In terms of tertiary enrollment Bulgaria has not lost yet its competitive capacity, ranking 30th in 2001. As already noted however innovation has limited weight of 1/8 in the overall technology index. The technology transfer component has a three times higher weight, but Bulgaria is at the bottom of the table, ranking 50th out of 56 non-core economies. One possible explanation is that this index is based entirely on qualitative judgment by the surveyed business representatives, who in Bulgaria tend to be skeptical about the technology transfer capacity of the economy. The third component – the ICT subindex, has biggest weight of 1/2 in the overall index

and reflects the achieved level of ICT development both through survey and through data on penetration rates of cell phones, the Internet, fixed lines, and PCs. Bulgaria's position is relatively better, somewhere in the middle of the 80-country scale of this indicator.

25. The GCI is most optimistic about Bulgaria's performance in terms of institutional environment for growth. Bulgaria is 47th of the 80 comparators according to the public institutions subindex. The institution subindex reflects the enforcement of contracts and law, on one hand, and the level of corruption, on the other. Bulgaria's relatively high institutional environment rating is entirely due to the 27th place in terms of the corruption subindex. According to the GCI, in 2001 Bulgaria outperforms in corruption-free environment many EU members (e.g. France, Italy, Belgium, Portugal, Greece) and all accession countries except for Lithuania, Estonia, and Slovenia and is closer to the leaders in GCI – US (20th) and Japan (21st), rather than to regional comparators like Poland (62nd) and Romania (67th). The real picture might be somewhat distorted by the fact that these scores are entirely based on soft data, i.e. on qualitative assessment by the surveyed executives of the corruption in their business and industry. There is unrealistic disparity in the assessment of the degree of corruption in the environment of the surveyed firm and the perception of corruption practices by other firms, political parties and administration, which questions the neutrality of the responses.[14]

26. To sum up, in terms of Growth Competitiveness Index, Bulgaria scored relatively high in public institutions. There has been considerable improvement by 9 positions up the scale between 2000 and 2001. The relatively high institutional rating reflects the anticorruption environment. In terms of enforcement of contracts and law Bulgaria ranks 67th. Bulgaria has relatively high score in the ICT component of technology subindex. On the other hand, it has a long way to go in building macroeconomic environment conducive to growth, especially in terms of saving and investment rate and the efficiency of monetary and financial system.

27. There are several aspects of the GCI rankings that may lead to underestimation of Bulgaria's growth competitiveness in the mid-term. First, as the report asserts the rankings provide only a rough guide to growth potential,

[14] See for instance Global Competitiveness Report Data Tables 7.01 to 7.15. At first reading, the data create the impression that the closer to the own environment the question touches, the smaller the perception of corruption is. For instance Table 7.06 measures the perception of frequency of irregular payments in the own industry and ranks Bulgaria 20th. Table 7.11 reflects the answers to a related question about the cost that other companies' irregular bribes incur to the respondent's own business, and ranks Bulgaria rather low – at 58th position. This might reflect to some extent the different measures that respondents apply to own and others' corruption practices.

not only because they cannot fully incorporate country-specific growth factors, but also because a small data adjustment can easily shift a country five positions up or down the scale, accounting for data error span of about 10 positions.[15]

28. Second, apart from country-specific growth factors, the GCI methodology may fail to catch some group-specific growth factors. The backward look on the ratings show that the initial 1997 ratings underpredicted the actual growth performance of post-socialist economies like Poland and Hungary.[16] The reason is that the GCI framework does not fit perfectly with post-socialist economies where growth depends very much on the successful shift of resources to the private sector and the elimination of subsidies to loss-making enterprises rather than the variables used to generate the GCI. Besides, EU accession-related improvement in investment climate and foreign investors expectations are not caught by the general GCI framework either. The problem is that there is not much empirical history to guide the adjustment of the GCI framework to growth in transition and accession economies.

29. Third, the report may fail to estimate the full growth potential of Bulgaria in the mid-term as it ignores the growth related to catching-up. In the context of the GCI methodology, catching up is a temporary phenomenon, and the related growth component diminishes the closer the non-core economies get to the core innovators. Therefore GCI rates growth potential after taking out the part of growth that is related to catching-up.[17]

30. Last but not least, even though most of the variables have hard-data components, i.e. impartial quantitative measures, the ratings as a whole are very much dependent on soft-data, that is qualitative measures reflecting the perceptions of economic agents collected through surveys. In some cases there is sizeable discrepancy between the evidence from the quantitative and qualitative assessment. This is not unusual. Given the track record of failed and delayed stabilization and restructuring resulting in the crisis of 1996–1997, the business tends to be skeptical in general, and there is a larger time lag before the benefits of stabilization are perceived by the business as sustainable opportunities for expansion. On the other hand, the relative immaturity of the business, especially in regard to its own role in creating and maintaining corruption opportunities, may distort the assessment of the quality of the business environment in terms of corruption.[18]

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[15] *Cornelius, Blanke* and *Paua* (2003), p. 7.

[16] *Ibid*., p. 3.

[17] *Ibid*., p. 6.

[18] The perceptions of business about corruption as an obstacle to, and opportunity for, business is puzzling in other surveys on business environment. *BEEPS* (2002) for instance found that

31. These considerations are even more legitimate in the case of MICI, which depends more than GCI on soft data. Possible misperceptions, however, should not be taken as distortions that need to be neglected in the assessment of micro and macro competitiveness. Even if departing from reality, it is perceptions of the businessmen rather than statistics and regressions, that in the end of the day guide investment decisions and economic activity.

1.3. Relative Cost Competitiveness

32. A large amount of literature on competitiveness follows a more traditional and narrow conceptual framework focusing on relative labor cost and productivity indicators in tandem with REER indices. This approach prevails in the IFI and EU recent assessments of Bulgaria's competitiveness, leading to wide consent on its current competitive performance and short term prospects. The World Bank's 2001 Country Economic Memorandum concludes:

> Despite a sharp REER appreciation in 1998, evidence from price and wage indicators does not suggest an exchange rate misalignment. Bulgarian wages are among the lowest in the region, and its labor markets are quite flexible. The pattern of productivity-based dollar wages indicate that while Bulgaria is undergoing a productivity-driven appreciation, there still exists a sizable difference between the actual and estimated equilibrium wage, implying that competitiveness is not at risk.[19]

The EU 2002 Regular Report on the Progress Towards Accession confirms this for the euro zone:

> In spite of some real exchange rate appreciation, international competitiveness has not deteriorated. Due to inflation differential between the euro area and Bulgaria, the BGL experienced a real appreciation of more than 7 percent against the euro in 2000 and almost 5 percent in 2001 measured in terms of consumer price inflation. The appreciation of the real effective exchange rate from the beginning of 1998 until the end of 2001 was about 10 percent. However, since labor productivity increased more than real wages, labor costs at the end of 2001 were still below their level at the beginning of 1998.[20]

The IMF 2003 review under the Stand-by Agreement makes a similar conclusion:

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the business perceptions indicate growing corruption and state-capture in terms of frequency and size of bribes, but reduced weight of this phenomenon – as an obstacle to business. This may again reveal that survey responses to questions on corruption need to be treated with caution, as the respondents do not use the same measure in regard to their own companies and other companies, politicians and administration, when evaluating corruption environment.

[19] *World Bank* (2001), pp. 3–4.

[20] *EC 2002* (2002), p. 45.

> The Bulgarian economy remains competitive, as labor productivity growth has outstripped the real effective exchange rate appreciation, and wage increases remain moderate.[21]

The sharp depreciation of the US dollar after 2001, and the emerging pattern of trade specialization call for a new reading of the data on cost competitiveness.

33. Relative prices or costs, expressed in a common currency, are measured through real effective exchange rates.[22] Unlike the nominal rate, which measures the relative price of two currencies (i.e. the price of one currency in terms of another), the real rate measures the relative price levels of the tradable goods of one country in terms of the goods of its competitors. The relative price of tradables is used to measure 'external competitiveness.'[23] 'Effective' rate means trade-weighted. It incorporates a number of bilateral rate indices, weighted according to the relative weight of the respective currencies or partners in the country's exports and imports. Thus, real effective exchange rates are defined as nominal effective rates deflated by relative prices.[24]

34. Relative prices are a good indicator of external competitiveness in the world of differentiated products. In the world of homogeneous products, largely driven by the law of one price, their relevance might be limited. It would be costs that are equally if not more important for competitiveness. This argument is even stronger in the case of a small open economy, which is a price taker not only for materials but for semi-differentiated products and industrial inputs as well.

35. Most of the relative cost indicators used to evaluate competitiveness measure labor costs and productivity. Production cost, however, includes also the cost of capital, of materials and intermediate inputs, as well as the cost of services and utilities. The conventional reasoning underlying the assessment of relative cost advantages through labor costs alone is that these are more likely to differ from country to country, as labor force is far less mobile than the other factors. Intermediate goods and inputs are less likely to bring about large differentials due to the law of one price. Capital goods are not so much subject to the law of one price, but they are also actively traded internation-

[21] *IMF* (2003), p. 5.

[22] A detailed discussion of methodology and survey of the literature is to be found in *Turner* and *Van't Dack* (1993); *Durand* and *Giorno* (1987).

[23] Real exchange rate is also interpreted as the ratio of tradable to non-tradable goods in domestic market, often referred to as 'internal competitiveness,' see *Dwyer* (1991). A comprehensive discussion of exchange rate theory is presented in *Corden* (1994).

[24] See more in Methodology Notes, Annex 1.

ally and could hardly contribute to a large divergence in production costs across countries.

36. This reasoning needs to be applied with caution in the case of transition economies. On the one hand, the pre-transition typical Soviet-type economy had easy access to materials and energy resources from the Soviet Union in exchange for manufacturing exports. In addition, a pervasive system of subsidies was in place. The industries of central planning were thus shielded from international competition and any pressures to raise their material and energy efficiency. Hence pre-transition trade specialization was heavily biased towards material and energy intensive products. Even though the law of one price may hold for homogeneous intermediate products and materials, the competitiveness of material and energy intensive industries would be much more determined by unit material or energy intensity, rather than relative prices.

37. Furthermore, service inputs increase their share in overall production costs. They are usually classified into two large groups: financial and nonfinancial. The first group includes the cost of financial intermediation, leasing, insurance, audit/accounting and other external services. The second group covers a wide variety like rents, communication and mail, transportation, consultancy, marketing and advertising services; R&D; training and HR services; maintenance and repair services; *etc*.

38. Services can also be divided along the line of differentiated and non-differentiated products according to the content of creativity input in their value added. The more sophisticated and technology-intensive the product is, the bigger the share of service inputs, especially for design and development, consultancy and staff training, marketing and advertising, *etc*. But relative cost advantages stem rather from services like rents, transportation and communication, maintenance and repair, financial services, *etc*. Similarly to the labor market, the market of services in transition countries is not so exposed to international competition, and may account for divergence in production costs. On the other hand, the share of services in production provides some guidance about the sophistication of production process and company operations and strategies.

39. Bulgaria is a small open economy with exports that are dominated by homogeneous products, largely driven by the law of one price. The country's share in the world trade of differentiated products is too small to influence price setting. Competitiveness should be interpreted in terms of relative costs of production. Table 2 shows the cost structure of industrial enterprises in 2002.

Table 2

COST STRUCTURE OF INDUSTRIAL ENTERPRISES

(percent in total)

Expense	2000	2001	2002
Intermediate goods	62.6	61.3	58.8
Purchase of services	10.2	13.7	14.1
Depreciation allowances	6.4	5.6	6.8
Labor costs	17.0	15.5	15.4
Wages	11.5	10.8	10.8
Social insurance and benefits	5.5	4.7	4.6
Other	3.8	3.9	4.9

Source: NSI.

40. Labor costs account for 15.4 percent of total production costs. As labor is not internationally mobile, and given the rigidities of the domestic labor market, labor cost differences are likely to play primary role in cost competitiveness relative to other countries and across sectors. Materials and intermediate goods have the biggest relative weight in overall cost and, accordingly, in absolute cost gains or losses. Even though the law of one price limits their share in relative cost changes, as already argued, the latter would very much depend on the level of technology applied. In the case of Bulgaria this argument has a special weight because of the high energy intensity of production. Services come third as determinant of relative cost competitiveness with about 14 percent weight in absolute costs and because of their limited exposure to international competition, and large relative weight of non-creative services in production costs. Capital costs have very limited weight. This might be a strong impediment to competitiveness in terms of technology diffusion and innovation, but has limited weight in terms of direct cost competitiveness.

41. If we derive from the wide variety of approaches to competitiveness outlined in this section the common concepts that form broad consensus, the latter would rest on three pillars. First, however broad the various concepts of competitiveness would be, they inevitably hinge on productivity and value creation. The interpretation of productivity may vary from the narrow definition in terms of labor productivity in the ULC measure, to the broadest notion of productivity as measure of wealth and prosperity creation in Porter's approach, but it is the most common starting point, ultimate objective and measure of competitiveness. Paul Krugman wrote that competitiveness is no more than a poetic way of saying productivity.[25] Even though it became the buzz

[25] *Krugman* (1994).

word of the 1990s, and incorporated various components of economic efficiency, institutions, microeconomic and macroeconomic fundamentals, technology and innovation, competitiveness is best explained through productivity. Second, all analyses seem to agree that productivity-driven competitive gains are realized at the level of the firm. Third, despite the leading role of the company, the state has growing responsibilities in enhancing national competitiveness.

42. In line with the above broad agreement on the fundamentals of competitiveness, this study seeks to evaluate Bulgaria's competitiveness in terms of productivity. Drawing on Porter's distinction of competitive challenges according to the stage of development, the report focuses on cost advantages as the major determinants of competitiveness at the factor-driven stage of development at which Bulgarian companies seem to operate. Furthermore, as productivity and competitiveness are generated at the firm level, the study stresses on sector performance in evaluating competitiveness. Departing from Porter's MICI technology, however, it relies mainly on hard data.

43. The analysis looks first at the real effective exchange rate appreciation in the years of CBA. Then it looks at labor costs and productivity. A combined measure of labor cost and productivity is unit labor costs (ULC). It measures how much an employer spends on labor *per* unit of output. Thus ULC is the average annual wage divided by productivity, the latter measured as output *per* employee.[26] The competitiveness of the economy reflects the competitive gains or losses of individual companies. Therefore, the analysis of labor productivity and ULC goes to the sectors of manufacturing. Further on, the study verifies the findings from relative cost competitiveness with evidence and indicators of export performance, namely export shares and revealed comparative advantage (RCA).

44. There are certain extensions of the cost and price model of competitiveness analysis that remain outside the scope of this study. First, it explores the changes over time in price, cost and trade competitiveness of Bulgaria's manufacturing. Although Bulgaria's performance is sometimes viewed in the broader international perspective of the EU and CEEC, cross-country comparison is not the primary objective of this study.[27] It is worth noting, how-

[26] More on the concept and measurements is presented in Methodology Notes, Annex 1.

[27] The development of the PPP methodology allows the approach to be upgraded from looking into competitive gains or losses over time to comparing levels of competitive performance across countries. Still PPP subsector indices are not available Adjusting sector data with overall GDP PPP index gives certain results, see, for instance, *Havlik* (2000), but as it includes large part of nontradables and services, Bulgaria's industrial competitiveness vis-a-vis an EU country would be overestimated. The distortion from applying the GDP PPP converter relative to another accession country with similar income level and output structure might be smaller, but still

ever, that the very concept of competitiveness as changes of relative costs rather than changes in production costs implies a cross-country context.

45. Second, the study focuses on the manufacturing sectors. It does not include services as a sector, even though more and more services enter the world of tradables and international competition, becoming important foreign exchange earners. In the case of Bulgaria, tourism stands high on the country's competitiveness policy agenda. But this is a specific sector that deserves a separate study. Services cannot be ignored, however, as inputs in the accounting of production cost of manufactures.

46. Third, for reasons already stated above, the analysis of manufacturing costs and productivity focuses on labor inputs. Other inputs, especially energy, are also important determinants of competitiveness, but this study does not analyze energy efficiency.[28] As already argued, services do play a role as inputs in manufacturing production costs. With the shift to more sophisticated technology-intensive products, the relative importance of service costs in overall intermediate consumption is growing. Although the sector is attractive to international investors, liberalization of trade in services lags behind the free movement of goods and has relatively recent history within WTO GATS talks. Therefore differences in the cost of commercial services can generate competitive gains or losses. Limited availability of statistical data and surveys on service costs and intensities in industrial output does not allow a coherent analysis of service cost competitiveness in manufacturing. Therefore this paper draws its policy recommendations from the status of trade liberalization in services, rather than actual service costs in manufacturing.[29] In addition to the group of commercial services, there is a large group of public services. Their cost may play significant role in competitiveness. There is an extensive amount of literature and surveys on the cost of administrative services in Bulgaria.[30] Besides, they are well quantified in the various competitiveness rankings surveyed above. Therefore, they remain outside the focus of this study.

47. Fourth, as already mentioned, there is a large set of indicators used to measure external competitiveness. No single indicator is good enough, to allow comprehensive assessment of a country's international competitiveness,

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difficult to estimate and make corresponding adjustment.

[28] Energy efficiency is studied in World Bank CEM; *World Bank* (2002)*; World Bank* (2002a)*,* Chapter 10; *Government of Bulgaria* (2002).

[29] On Bulgaria's commitments and achievements in eliminating barriers to trade and FDI in the sector of services, see *Pashev* (2002).

[30] There is an extensive amount of literature on the cost of administrative and public services in the recent years: see *BEEPS* (2002) and *FIAS* (2002).

and no study is big enough to include all relevant indicators. Similarly to other studies of this scope, this report relies on evidence from a limited number of indicators: REER, ULC, RCA and export shares. In future extensions it may benefit from comparing profitability as a mirror indicator of aggregate production costs.

48. Fifth, this paper studies changes in Bulgaria's cost competitiveness in the six years since the introduction of CBA. The main reason for limiting the reviewed period to the CBA years is that the real appreciation of the lev and related losses in competitiveness are attributed to the fixed rate under the CBA. Second, the limitation of the period under review is determined by availability and consistency of data: most of the major statistical data series are available only after 1997 in the context of the harmonization of the Bulgarian statistics with the requirements of IMF monitoring and EU accession. Besides, the prevalence in the pre-CBA period of elements of command micromanagement of the SOE and employment, inventory accumulation, profit siphoning-out schemes, soft-budget constraints and subsidies, price controls, *etc*., raises serious doubts about the reliability of price and cost indicators of competitiveness before 1997. The choice of period, however, calls for an important note. The crisis of 1996–1997 brought to a collapse of wages of 33 percent in real terms. The base benchmark of labor costs was quite low and a large part of the subsequent increase in real wages was nothing more than restoring their pre-crisis level.

49. Policy measures designed to enhance competitiveness fall in four broad categories:

a. measures, targeting reduction of production costs, mainly labor costs through eliminating labor market rigidities, reducing non-wage labor cost, the cost of capital, as well as the administrative costs of doing business;
b. measures, related to the quality of human resources, infrastructure, including ICT infrastructure, micro- and macro-economic environment for business and the quality of public services;
c. measures related to enhancing technology diffusion and innovation;
d. export promotion and FDI-attracting policies.

50. In line with its analytical focus on relative cost competitiveness, this report's short term policy recommendations tend to fall in the first group. In the mid-term the major challenge would be to shift from cost and factor-driven competitiveness to investment-driven competitiveness, where technology transfer and consumer preferences play major role in company strategy. At the same time the government should start today to lay the foundation of

sustainable innovation-driven competitiveness in the long run. The major responsibility of the government in this field is to invest in quality of education and the relevant policy environment for R&D infrastructure. Bulgaria has traditions in education and engineering capacity which are quickly disappearing. In some cases short-term public expenditure priorities may need to be reconsidered in the context of long-term competitiveness needs.

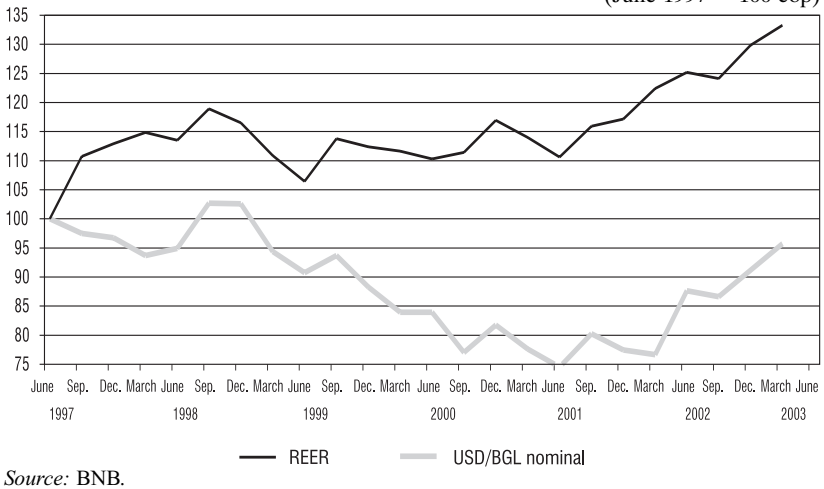
2. The Lev Real Appreciation

51. In almost six years of CBA, the lev appreciated in real terms by more than one third. BNB REER index reflects end-of-period nominal exchange rate values deflated with the CPI in a basket of three currencies represented according to their relative weights in the foreign trade payments: USD 57.24 percent; DEM (EUR) 41.98 percent; and CHF 0.71 percent.[31]

Figure 3

REAL APPRECIATION OF THE LEV

(June 1997 = 100 eop)



Source: BNB.

52. Most of this appreciation took place in the first and the last year of the reviewed period. As the lev has been nominally pegged to the DEM (EUR), the REER dynamics reflects mainly CPI and nominal US dollar rate movements. The chart shows the index of the end-of-period nominal USD/BGL rates (i.e. rise means lev appreciation against the US dollar in nominal terms).

[31] For alternative approaches to the REER index, see *Turner* and *Van't Dack* (1993).

Clearly the initial real appreciation of almost 20 percent of the lev between 1 July 1997 and 30 September 1998 was driven by the high lev inflation relative to the Deutsche Mark and the US dollar in the first months of the CBA, and was additionally fuelled in 1998 by the nominal depreciation of the US dollar. The three year spectacular rise of the dollar by about 37 percent between September 1998 and the end of 2001 kept the lev down in real terms. At the beginning of 2002 the lev stood still at its September 1998 level.

53. The composite REER, however, hides the loss of competitiveness *vis-à-vis* the euro zone in 1998–2001. Between January 1998 and January 2002 the real effective exchange rate of the lev rose by 3.7 percent, while at the same time the lev was appreciated against the euro by 10 percent. This is due entirely to the inflation differential between Bulgaria and the euro zone. The real appreciation against the euro grew in importance with the euro replacing the US dollar as a leading currency in Bulgaria's foreign exchange transactions in this period. At the beginning of 2002 the upward trend of the lev relative to the euro was enforced by the nominal depreciation of the dollar. By March 2003 the lev stood more than one third above its level at the introduction of the CBA, and the US dollar continued its slide down.[32]

54. Such a degree of real appreciation cannot but have strong adverse impact on a country's price competitiveness. It is more pronounced *vis-à-vis* the US dollar markets, but losses in competitiveness towards the euro zone are not to be underestimated. The latter come through two channels. The first one is the direct impact of higher relative cost of Bulgarian euro exports to the EU. The second one is likely to have bigger impact and is related to competitive pressures from USD-denominated exports to the euro zone. There is certain offsetting effect of the real appreciation through the reduced cost of imported inputs.[33] Nevertheless, other things equal, real appreciation by this magnitude implies substantial loss in competitiveness.

55. The wide spread argument is that in the case of Bulgaria, at least until the end of 2001, real appreciation did not pose any threat to competitiveness because it was outstripped by productivity gains larger than wage growth. Moreover, low wages are widely considered Bulgaria's most important competitive advantage. The next section looks into wage and productivity developments and their impact on relative cost competitiveness.

[32] The actual level of lev appreciation in 2002–2003 may be slightly lower than the reported by BNB, because of the relative weight of 57 percent attached to the US dollar (based on its 1997 share in trade), while its actual weight in 2002–2003 is about 40 percent.

[33] Most important in this context is the US dollar imports of oil and natural gas, but Bulgaria could not get any cost benefits from the US dollar depreciation before April 2003, when the end of the Iraq crisis reversed the upward trend in the oil and gas prices.

3. Labor Costs

56. Wages registered steep growth since 1997 (Table 3a). The economy annual average wage went up more than twice in nominal terms. In real terms it rose by 39.3 percent (CPI-deflated) and by 43.6 percent (PPI-deflated). Wage growth is driven by private sector. Private sector wages growth averages 9 percent *per* year in the whole economy, and 5 percent in manufacturing. Still, in 2002 private sector wages remained at 75 percent of the public sector wage level.[34]

Table 3a

ANNUAL AVERAGE WAGE GROWTH

(EUR, 1997=100)

	1997	1998	1999	2000	2001	2002
Economy	785	1124	1233	1377	1472	1668
Nominal	100	143.3	157.1	175.5	187.6	212.5
CPI-adjusted	100	120.7	129.1	130.7	130.1	139.3
PPI-adjusted	100	123.3	131.1	124.6	128.3	143.6
Private sector	627	908	1028	1181	1254	1472
Nominal	100	144.7	163.9	188.3	199.9	234.7
CPI-adjusted	100	121.9	134.6	140.2	138.6	153.8
PPI-adjusted	100	124.6	136.7	133.6	136.7	158.6
Public sector	869	1276	1407	1615	1785	1967
Nominal	100	146.9	161.9	185.9	205.4	226.3
CPI-adjusted	100	123.7	133.0	138.4	142.4	148.3
PPI-adjusted	100	126.4	135.0	131.9	140.5	153.0

Source: NSI and own calculations.

57. Manufacturing wage growth lags behind the economy's overall rates (Table 3b). Despite its cumulative 64 percent nominal increase between 1997 and 2002, manufacturing wages registered negative growth in real terms in 2000–2001, and in 2002 stood only 7.7 percent above their 1997 level.

58. Despite this spectacular growth, wages in Bulgaria remain low both by international standards and relative to what is estimated as their equilibrium level. Taking into account that the 1996–1997 financial crisis resulted in a 33 percent collapse in real wages, the wage expansion in 1998–2002 is a recovery of the pre-crisis 1995 level rather than income expansion affecting competitiveness. In 2000 Bulgaria not only had the lowest average monthly wage of all accession countries, but the gap was substantial. Bulgaria's wage level was 42–43 percent of the level of the lowest income countries of the first accession group (Slovakia, Latvia and Lithuania), and 10 and 15 percent of

[34] This differential may reflect as well larger share of underreporting in the private sector relative to the public sector.

the average wages of Greece and Portugal respectively.[35] Even if adjusted for PPP, average wage in Bulgaria would stay at about 63–64 percent of the first accession group's lowest level. These data show that Bulgaria has a long way to go in reducing the income gap not only with the EU, but with the other regional comparators as well. Increase in real wages does not threaten internal and external equilibrium either. If we take PPP converted euro wage as a proxy for equilibrium, the 2001 average wage is about 40 percent below the equilibrium level.[36]

59. The data show that PPI-deflated wage grows faster than CPI-adjusted wage. This implies that except for 2000 and 2001, real growth of labor cost for manufacturers was not felt by employees as growth of income by the same rate. A similar trend affecting the internal sustainability of the income expansion was observed in other accession countries in the late 1990s.[37]

Table 3b

MANUFACTURING ANNUAL AVERAGE WAGE GROWTH

(EUR, 1997 = 100)

	1997	1998	1999	2000	2001	2002
Manufacturing total	911	1194	1243	1343	1392	1496
Nominal	100	131.1	136.5	147.4	152.8	164.2
CPI-adjusted	100	110.4	112.1	109.8	106.0	107.7
PPI-adjusted	100	112.8	113.8	104.6	104.5	111.0
Private sector	745	1004	1082	1280	1329	1447
Nominal	100	134.7	145.2	171.8	178.4	194.1
CPI-adjusted	100	113.5	119.3	127.9	123.7	127.3
PPI-adjusted	100	115.9	121.1	121.9	122.0	131.2

Source: Own calculations based on NSI data.

60. Last but not least, except for wage costs, analyzed above, labor costs have considerable non-wage component which is also a strong determinant of competitiveness, and much more direct result of economic policy. The non-wage component in Bulgaria accounts for roughly one third of total labor cost in 2001–2002 (Table 4). Social and health insurance contributions paid by the employer form the

[35] Eurostat: Labor Cost Survey 2000 Member States.

[36] There are strong arguments against the assumption that PPP exchange rate may provide reliable substitute for equilibrium exchange rate, see *Williamson* (1991). Nevertheless, they are often used as a rule of thumb to estimate misalignment, and, in the case of CEEC, the room left for real appreciation, see *Havlik* (2000), p. 2. The rationale to use this rate as a benchmark rather than rates derived from equilibrium models is that the latter do not work well for transition economies. Besides, even for advanced economies, where equilibrium models are more applicable, they rarely give better results than a model based on random walk. The benefit of PPP is that at least it gives a notion of the direction into which the nominal exchange rate should go in order to offset inflation differential.

[37] *Havlik* (2000), p. 5.

bulk of it at about a quarter of total labor costs. Employer-paid sick leave compensations account for additional 2–3 percent of labor cost. The remaining 5 percent is in kind benefits and tax on them. The level of non-wage cost is higher even than the EU average, which in 2000 stood at 24.3 percent, social contributions accounting for 21.5 percent of total labor costs. In the case of Ireland and Denmark, whose rates of growth constitute a target more consistent with Bulgaria's convergence challenges, the ratio of non-wage component is 15 and 12.3 percent with social contributions at the level of 12.4 and 8 percent respectively.

Table 4

BREAKDOWN OF LABOR COSTS

	2000		2001	
	Economy	**Manufacturing**	**Economy**	**Manufacturing**
Wages	67.20	67.04	66.88	67.41
Compensations	2.41	2.82	2.86	2.92
Insurance	25.24	25.40	24.59	24.74
In kind benefits	4.26	3.93	4.73	4.11
Tax on benefits	0.89	0.82	0.94	0.82
Total	100.00	100.00	100.00	100.00

Source: NSI.

61. In the short- and medium-term labor cost is likely to be influenced by several factors. On the supply side, there is a large pool of unemployed in the range of 15–17 percent of the workforce.[38] This does not necessarily mean excess supply of labor at the same rate. More than half of these are long-term unemployed, and are more or less out of the labor market. A part of them[39] are believed to be actually employed but not reported. Last but not least, the bulk of unemployed are without qualification and established industrial culture and discipline. Demand for them is limited in technology non-intensive processes with low level of employee's responsibility. In addition to skill supply-demand mismatches, there are also regional disparities. In certain regions unemployment is two to three times higher than the country average. Rigidities and imperfections in the real estate and housing market and dependence on subsistence incomes, as well as on support from family and relatives, *etc*., limit the flow of workforce across regions. Last but not least, on the demand

[38] Registered unemployment was brought down to 14.27 percent at the end of May 2003, but almost half of this result is attributed to subsidized short-term employment creation in 2003. At the same time the share of long-term unemployed (more than 1 year) is 55 percent of all registered unemployed.

[39] Estimations of the unreported employment vary between 20 to 37 percent according to the methodology. The NSI does not have comprehensive methodology, but by comparing data from household surveys and company surveys they roughly estimate the hidden employment at about 20 percent of the work force. The NSSI estimates insurance compliance rate at about 75 percent.

side, current labor legislation's excessive protection for employees restricts employer's capacity to benefit from the excess supply on the market.

62. What is the role of the government in income policies and competitiveness? Should the government micromanage wage levels in the way it did by the tax on wage increases until 1997, or in the way this has been done in some EU countries?[40] There is hardly more benefit in regulating wage levels than interfering in any other market price setting. The government can and is expected to monitor the wage bill in the public sector, but this is rather macromanaging in the context of the hard budget constraint. Instead of targeting wage levels, governments usually do better by reducing any regulatory impediments to labor market flexibility, especially those related to term contracts and to dismissals. Tripartite mechanism and collective bargaining may also be set to allow more market flexibility. Besides, prudent fiscal policies should keep CPI inflation low enough so that increase in real wage costs could not be eaten by inflation, thus generating pressures for further increases.

63. Furthermore, the government has direct control and responsibility for a large portion of labor cost. Social and health insurance contributions and sick leave compensations paid by the employer amount to 40 percent of the cost of cash wages and in-kind benefits. This is too high by international standards, especially for an economy that targets accelerated growth and convergence rates. Now employer and employee pay insurance in a ratio 75:25. By 2007 their shares will be equal, thus reducing to some extent the labor cost for the employer at the expense of the employee.

64. In fact, an even more effective government policy would be to reduce the contribution rates by using some of the extra revenues generated by its 2003 policy measures. These are three instruments designed to reduce collection and compliance gaps estimated at about 25 percent of revenues in 2002: (a) mandatory registration of all existing and new employment contracts; (b) introduction of minimum insurance threshold by economic activity and qualification; and (c) establishment of National Revenue Agency to unify collection of taxes and social and health insurance contributions based on unified registry and revenue administration. The combined effect of these measures is expected to be an improvement of compliance by 13 percentage points by the time of Bulgaria's accession to the EU.[41] The resultant gains may allow a cut in contribution rates by at least 4–5 percentage points.

[40] In the mid-1980s Belgium for instance introduced a competitiveness norm, that allowed direct government intervention in wage formation if wage cost *per* employee in the private sector exceeded that of Belgium seven most important trade partners.

[41] *World Bank* (2003), Appendix 4.

65. An initial step would be to transfer the payment of compensation for the first three days of sick leave from employers to the National Social Insurance Institute. Since 2000, social insurance does not cover the first three days of sick leave, they were transferred from the NSSI to employers. The shift led to sharp increase in compensation claims, very much reflecting fraud and abuse.[42] The reason is partly in the fact that GPs' contract and remuneration from the NHIF depend on the choice of the employees rather than on the control by the payer of compensations.

4. Productivity

66. The focus of analysis so far is on labor cost. In terms of competitiveness this is only one side of the coin. Labor cost advantages can be largely offset by productivity and quality gaps. And, vice versa, a steep rise in wage costs like the one experienced by Bulgaria in 1998–2002 may not have such deteriorating impact on competitiveness if it is accompanied by productivity gains of similar magnitude. In fact the objectives of convergence with the income levels of the EU and demand-led growth imply targeting productivity gains above income expansion, rather than competitive gains through depressed income levels.

67. The combined impact of labor cost and productivity on competitiveness is measured through unit labor costs (ULC). It is defined as compensation *per* employee divided by productivity. Productivity is defined and measured as output *per* employee, therefore ULC can be calculated as total labor costs divided by output. It measures how much an employer pays for labor for one lev of output.[43]

Table 5

ULC CHANGES IN PERCENT OVER PREVIOUS YEAR

	1998	1999	2000	2001	Average
EU15	-0.9	-0.1	0.3	0.7	0.00
Greece	0.8	-1.9	-1.7	-1.9	-1.18
Bulgaria	18.37	-2.19	-5.4	6.26	4.26
Czech Republic	-2.17	1.05	1.27	-3.94	-0.95
Estonia	-1.59	5.53	-6.58	-2.54	-1.30
Latvia	-3.06	-3.1	-7.3	-5.01	-4.62
Poland	-1.48	-0.9	-4.75	2.7	-1.11
Slovenia	-2.46	-1.3	8.05	0.16	1.11

Source: Eurostat.

[42] *World Bank* (2002a), pp. 151–152.

[43] See more on the methodology of calculating ULC in Methodology Notes, Annex 1.

68. Table 5 shows Bulgaria's ULC developments over the years of CBA in international perspective.[44] Bulgaria has the highest growth in ULC in the period under study,[45] which amounts to about 16 percent cumulative loss of competitiveness relative to 1997.

69. In order to understand better the underperformance of the Bulgarian economy relative to comparator accession countries, we need to look at productivity developments. Similar to wage costs, productivity of Bulgarian economy remains low by international standards, thus to a large extent offsetting the competitive advantages of low wages. According to Eurostat data,[46] presented in Table 6, in 2002 Bulgaria's productivity level is about 31 percent of the EU level, and at about half of the level of the leaders in the first accession wave. Bulgaria outperforms only Romania in terms of productivity. More importantly, Bulgaria and Romania are the only accession countries whose relative productivity (to EU 15) did not improve at all between 1997 and 2002. All other accession countries improved their productivity relative to the EU, with Poland, Hungary, Lithuania and Latvia achieving 8–10 percentage points gains. It is worth noting that in 1997 Lithuania was at the level of Bulgaria, and Latvia even below it.

Table 6

LABOR PRODUCTIVITY

(EU 15 = 100)

	1997	1998	1999	2000	2001	2002
EU 15	100	100	100	100	100	100.0 f
Greece	77.3	76.6	79.4	80.2	80.3	83.0 f
Bulgaria	30.41	31.29	32.37	30.78	29.01	30.76 f
Czech Republic	54.42	53.97	54.86	53.52	56.62	56.34
Estonia	36.17	38.14	39.25	41.95	41.29	41.55
Hungary	55.84	56.83	56.84	58.21	61.59	64.41
Lithuania	31.84	33.6	31.7	34.24	38.53	40.11
Latvia	26.88	27.66	28.31	30.96	33.79	35.23
Poland	39.99	40.93	43.9	47.17	48.55	50.53 f
Romania	27.69	26.66	27.32	26.57	27.56	28.21 f
Slovenia	67.29	68.99	71.02	68.55	70.46	71.43
Slovak Republic	50.73	51.32	53.2	51.75	52.77	53.83
Turkey	:	:	:	34.06	31.83	36.25 f

Source: Eurostat.

[44] In Eurostat methodology, ULC is compensation *per* employee divided by GDP *per* employee both at current prices.

[45] Data series for Romania and Hungary are not complete and are not presented here.

[46] For the purpose of cross-country compatibility of data, Eurostat measures productivity as GDP *per* employee, with GDP-adjusted for purchasing power standards.

70. Table 7 provides some evidence on Bulgaria's failure to keep at pace with the other accession countries.[47] The explanation lies primarily in the inability of the private sector to deliver sustained productivity gains. Growth in value added between 1997 and 2001 lags behind employment growth. The number of employed by the private sector increased by 49 percent, while GVA produced there grew by 26 percent in real terms. 2002 data seem to reduce the gap, but still the problem remains, accounting to a cumulative loss of productivity of 6.6 percent in the private sector.[48] This results suggest that the large transfer of resources from the public to the private sector was not accompanied by proportionate gains in productivity. The economy as a whole did not lose productivity as the public sector did much better: both output and employment declined, but employment declined much faster, contributing to 12 percent annual average gain in productivity in the public sector and an average annual growth for the whole economy of 7.3 percent.

Table 7

PRIVATE SECTOR'S PRODUCTIVITY UNDERPERFORMANCE

	1997	1998	1999	2000	2001	2002	Average	2002/1997
GVA at 1997 prices								
Economy (mln. levs)	15577	17256	17686	16818	18027	19266		123.7
Previous year = 100		110.8	102.5	95.1	107.2	106.9	104.5	
Private sector (mln. levs)	9878	10761	11321	11697	12875	14015		141.9
Previous year = 100		108.9	105.2	103.3	110.1	108.9	107.3	
Employment								
Economy	2155010	2086291	1994284	1921219	1899874	1884974		87.5
Previous year = 100		96.8	95.6	96.3	98.9	99.2	97.4	
Private sector	752104	862876	916236	1050537	1120490	1142914		152.0
Previous year = 100		114.7	106.2	114.7	106.7	102.0	108.8	
Productivity (GVA/employee)								
Economy (levs)	7228	8271	8868	8754	9489	10221		141.4
Previous year = 100		114.4	107.2	98.7	108.4	107.7	107.3	
Private sector (levs)	13134	12471	12356	11134	11490	12262		93.4
Previous year = 100		95.0	99.1	90.1	103.2	106.7	98.8	

Source: NSI, own calculations.

71. Some part of this result might be explained by underreporting by the private sector. While this is a legitimate argument, it still fails to explain fully the discrepancy between growth in employment and value added. The more so, as the business is more likely to underreport employment than output, be-

[47] Productivity here is measured as gross value added *per* employee adjusted with producer price index. This measure is considered more precise for analyzing relative cost changes over time, and differs from the Eurostat measure, used above for cross-country comparison.

[48] 2002 data are preliminary and are probably subject to adjustment.

cause the tax burden of insurance contributions is bigger than that of income taxation, while enforcement and control have been weaker. Obviously, the explanation lies largely outside the gray economy. Porter's analytical framework applied to Bulgaria in the first section (Paragraphs 10–16) is quite helpful in explaining the inefficiency of the emerging private sector.

72. Between 1997 and 2001 a large part of nonproductive state assets were either sold out or closed down. This late big-bang restructuring resulted in a drastic shift of workforce from the public to the private sector. But the mass replacement was accompanied by a shift from capital and energy intensive huge state enterprises to labor intensive manufacturing and service sectors, largely small family businesses. Insufficient investment and access to external markets could not allow the nascent private sector to substitute immediately the dying public sector industry. Inevitably, growth in value added lagged behind employment expansion. There are three major reasons for the failure of the private sector output to grow in proportion with employment: (a) the quality of privatization in terms of quality of assets and quality of deals; (b) the limited access to credit; and (b) the quality of business environment.

73. *The quality of privatization*. Privatization went through stop and go campaigns, political fights and accusations of rent-seeking and abuse of power. It tried different schemes – from voucher privatization to manager-employees buy-outs, and direct negotiations, but at the end of the day few deals succeeded in connecting the former state assets with owners that would have the financial and managerial capacity and will to restore and increase productivity. Large part of the FDI deals in fact were portfolio investment aiming at resale rather than investment in productivity gains.

74. Few of the assets sold had any production and market potential. The delay of privatization and the high dependence of most sectors on the ex-Soviet Union market coupled with the 1996–1997 crises brought about a collapse of production that would require more than free financial and managerial resources and new external markets to restore. Neither of these were available in Bulgaria in the period under review.

75. *Limited access to financing.* The paramount obstacle to the development of competitive private sector after 1997 has been the difficult access to credit. Most companies indicate this as major impediment to their development together with the administrative constraints and corruption, tax burden and changing regulations. The credit to the private sector (including consumption credits to households) in percent of GDP in 2001 was 14 percent, about half of the average level of the group of the accession countries (27 percent). In 2002 it expanded by 4.5 percentage points to 18.5 percent, but is still 3 percentage points below the pre-crisis 1995 level. According to a recent sur-

vey of private companies only 1 percent of the VAT-registered companies used credit in 2002.[49] A direct consequence and proof of the shortage of bank financing is the growing intercompany debt.

76. On the supply side the primary constraints to bank lending to the private sector stem from the low saving rates and the low trust in the banks after the crisis of 1996–1997. Six years after the introduction of the CBA a large part of available money balances remain outside the bank system, the ratio between the cash and the deposit components of M3 exceeding three times the ratio of the pre-crisis 1995. Even though in 2002 money supply almost restored its pre-crisis level, bank deposits remain at about 65 percent of their 1995 level as a percent of GDP (33.2 percent in 2002 relative to 51.1 percent in 1995). Even the limited deposit resource was not channeled to domestic investment. Until 2002 the banks preferred to deposit their resources abroad rather than to engage in risky domestic lending. It was not before the middle of 2002 that banks started to re-allocate their assets towards the domestic market and to ease credit terms. On the demand side the major constraints to borrowing have been related to lack of credit profiles and history of the firms, lack of acceptable collaterals, lack of accounting transparency, low quality of projects, *etc*.

77. What did the government do to overcome the credit constraint? The list of policy successes in this field is impressive: 100 percent completed privatization of the banking and financial sector with sound and efficient banking supervision and unified supervision for the rest of the financial sector. But at the same time the persistent private sector hunger for funds gives rise to a controversial policy trend of government's direct involvement in filling the gap at the expense of the fiscal reserve. The trend has materialized through the establishment of Business Promotion Bank, and advanced preparation for the establishment of SME guarantee fund, and venture capital fund. The role of these funds, the expected benefits and costs and risks for both the private sector and public sector need careful assessment.

78. What can the government still do to improve financial situation of the private sector? As mentioned above, a significant cash resource remains outside the banks. Rather than direct financial support of private investment the government may better take additional measures to channel these resources to the banking system. A substantial part of these cash balances serve the gray economy and are related to tax evasion. The crowding out of the gray economy will indirectly improve the bank deposit base. There are certainly more direct instruments to attract scarce saving resource available. Raising

[49] *Roussenova* (2003).

the guaranteed deposit threshold for instance would restore further the credibility of the banking system. Current legislation guarantees deposits up to the amount of BGL 20 thousand in case of bank default. Unlike direct investment and guarantee funds, the minimum deposit is guaranteed with money from a bank fund, not from the fiscal reserve.

79. On the other hand, oversight agencies need to monitor closely the current credit expansion against the relatively slow restoration of bank deposit base. An increasing amount of microcredits and consumption credits is offered without collateral or warranties, the risk being covered by insurance companies. This calls for new level of interaction and coordination between the two oversight bodies. More importantly, the government needs to help in every way the strengthening of the insurance industry as sharing the lending risk with the banks becomes a major prerequisite for easy access to credit. So far the insurance companies have been taxed 7 percent flat rate levied on insurance premium. Taxation based on actual incomes would be a measure that will have positive impact on the insurance business and through it on savings and lending opportunities.

80. Authorities have not used much the potential of pension funds to attract savings and channel them into high-return investment. On the contrary, after a relatively strong start, authorities saw in voluntary insurance and pension schemes mainly a tool to avoid income taxation and in 2002 restricted the deductions from taxable income for voluntary pension and health insurance. Even though their concern for the revenues might be legitimate, again policy makers needs to find the right trade-off between increasing savings and increasing income tax receipts. Expected increase in revenues related to NRA may provide further opportunities for encouraging private pension schemes.

81. Little has been done to overcome the accumulation of intercompany arrears. This is a difficult problem, but the government can start from clearing the arrears owed to and by its own companies which account for large part of the problem.

82. *The administrative and regulatory constraints*. Last but not least, the underdevelopment of the regulatory and institutional environment, the corruption and weak law enforcement failed to create a level playground for the business and to attract investment. The financing and regulatory constraints explain the low investment rates in Bulgaria. In the years of CBA investment in fixed assets expanded from 12.1 percent in 1998 to 20.1 percent of GDP in 2001. Preliminary figures for 2002 indicate a drop back to 18.4 percent. The story of FDI is similarly discouraging. It is to a much larger extent than domestic investment a direct consequence of the flaws of the administrative regulatory and institutional environment for business in Bulgaria.

5. Manufacturing Sector Outlook

83. This section looks at the individual performance of the manufacturing sector and subsectors and their contribution to growth in output and employment. Manufacturing ULC dynamics (Table 8) shows an overall positive trend of competitive gains over the last six years.[50] Since 1997 ULC in manufacturing has been declining, except for 2002, when preliminary data indicated slight downturn in cost competitiveness. The annual competitive gain in the last six years averages 5.3 percent. By components of ULC, these gains reflect an increase of gross value added in real terms by 3 percent in average *per* year, against a reduction in employment by 5 percent *per* year. The resultant productivity gains of over 8 percent in average outweigh real wage growth of 2.3 percent, resulting in substantial competitive gains in manufacturing of 25 percent in total between 1997 and 2002.

Table 8

COMPETITIVE GAINS IN MANUFACTURING

	1997	1998	1999	2000	2001	2002	Average
GVA (mln. levs current prices)	2894	3837	3582	4213	4607	4879	
GVA (PPI-adjusted)	2894	3303	2988	2990	3151	3298	
Change (previous year = 100)		114.1	90.5	100.1	105.4	104.7	102.9
Employed	720285	689748	615829	568604	562251	556900	
Change (previous year = 100)	100.0	95.8	89.3	92.3	98.9	99.0	95.1
Productivity (lev in 1997 prices)	4018	4789	4852	5258	5604	5922	
Change (previous year = 100)		119.2	101.3	108.4	106.6	105.7	108.2
Wages (lev annual average current prices)	1782	2335	2431	2626	2722	2926	
PPI-adjusted	1782	2010	2028	1864	1862	1978	
Change (previous year = 100)		112.8	100.9	91.9	99.9	106.2	102.3
ULC (wage/GVA *per* employee in current prices)	0.44	0.42	0.42	0.35	0.33	0.33	
Change (previous year = 100)		94.7	99.6	84.8	93.7	100.5	94.7

Source: NSI and calculations.

[50] ULC here are measured as average annual wage (net of insurance and other costs) *per* productivity, the latter being calculated as GVA *per* employee (PPI-adjusted). The NSI releases data on labor compensations from LFS, see *NSI* (2003), and from the national accounts statistics, see *NSI* (2002). The former includes only wage costs. The latter comprises wage, insurance and other labor costs including sick-leave compensations, in-kind benefits, even *per diem* trip allowances, not only for the employed, but for the self-employed as well. Part of the latter must reflect hidden employment as well, which is indicated by the difference between the household wage income data and companies' wage expense reports. NSI is working on methodology to reconcile these data and have much more reliable estimates of overall labor costs. But in the absence of such methodology, ULC calculations here use data from LFS, i.e. wage cost net of insurance and other costs. Even though insurance costs deteriorate international competitiveness, as already mentioned in the previous section, their share in overall cost has not changed much in the period under review, so they do not account for big

84. The overall ULC dynamics in manufacturing reflects the performance of manufacturing subsectors and productions. This study will only present the above overall picture through the zoom of subsectoral breakdown. The underlying sector analysis that would explain the individual sector performance is beyond the scope of this paper. ULC data for 1997–2001 indicate competitive gains in the manufacturing sectors of textiles and clothing, electrical and optical equipment, mineral products, wood manufactures, chemicals and fibers and machinery and equipment. On the negative side are pulp and paper, leather products; food, beverages and tobacco; metal products, rubber and plastics and transport machines (Table 9). In the case of transport machines, rubber and plastics, and metals, the loss in competitiveness is a result of one-time upturn in cost in 2002 (data are preliminary at that), rather than pronounced mid-term trend.

Table 9

ULC, PRODUCTIVITY AND WAGES IN 2002 BY SUBSECTORS

(1997 = 100)

Manufacturing subsectors	ULC	Productivity	Wages
Textiles and clothing	60.7	97.5	59.2
Electrical and optical equipment	64.3	198.1	127.3
Mineral products	83.1	156.4	129.9
Wood, wood products	83.2	144.5	120.2
Refined oil products	89.3	142.4	112.5
Other manufacturing n.e.c.			
Chemicals and fibers	96.8	93.7	90.7
Machinery and equipment	99.0	119.1	117.9
Transport machines	101.1	103.5	104.7
Rubber and plastics	104.3	130.0	135.6
Metals and metal products	114.1	90.4	103.1
Food, beverage, tobacco	116.7	103.4	120.7
Leather, leather products	123.9	91.1	112.8
Pulp, paper products, printing	128.2	87.1	117.7

85. A better understanding of what drives these results would require a closer look at the productivity and wage components of ULC. Competitive

changes in competitiveness over the last six years.

Even though ULC calculations based on overall wage cost data from national accounts cut down cumulative competitive gains between 1997 and 2002 by half relative to the data extracted from reported employment and wages (i.e. the methodology applied here), there is still substantial cumulative gain of 12 percent (*versus* 24.7 percent according to Table 8). This proves that an adjustment for unrecorded employment and wages would place competitive gains between 12 and 24.7 percent cumulative for the period under review.

gains in all but two sectors are driven by productivity gains bigger than real wage growth. The only exceptions are textiles and chemicals, where productivity decline was more than offset by larger drop in average real wages. The major reason for losses in competitiveness for the sectors 'below the line' is wage expansion larger than the growth in productivity (transport machines, rubber and plastics, and food), or even despite decline in productivity (metals, leather, pulp and paper).

86. ULC here are based on gross output. Even though output-based productivity is considered to be a superior concept,[51] its major flaw is that it includes the cost of intermediate products. An increase of material intensity of the production thus may appear as gain in labor productivity. Similarly, an increase in the capital intensity of the production may appear as an increase in labor productivity.[52] Evidence about changes in factor intensities can be obtained through the data of the relative shares of factor costs in production costs. A breakdown of the share of company expenses for materials, services, and labor costs by manufacturing sectors is presented in Annex 2, Data Table 4.

87. In 2002 material inputs account for 60–70 percent of the production costs in most of the manufacturing sectors. Only in two – clothing and footwear – the share of materials is below 50 percent. Together with service cost, inputs account for 65–80 percent of production cost. Only two sectors show slight expansion of the share of inputs in total cost: electrical machines, and furniture and lamps (which dominate the group of 'other n.e.c.'). The other remain relatively stable or slightly shrink. In both sectors, however, the expansion of input share is so small relative to the gain in productivity, that an adjustment for growing input share would not change substantially the results presented in Table 9.

88. The share of depreciation allowances in expenses increased slightly in all subsectors. The change, however is very small and does not indicate shift from labor to capital intensive manufacturing. The more so, as increased depreciation allowances may reflect recent tax policies of accelerated depreciation rather than increased investment. The low share of depreciation allowances indicate the lack of much innovation and new investment in the technology-intensive subsectors: metal electrical and transport machines, and furniture.

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[51] See *Oulton* (1994), *Jorgenson* (1993).

[52] The result is different from the result obtained when GVA is used to calculate productivity. GVA-based ULC, however, leads to the opposite distortion. An increase in the material or capital intensity of production causes a reduction in GVA and thus in GVA-based labor productivity, which in reality does not take place.

6. Trade Competitiveness

89. The competitiveness analysis of Bulgarian manufacturing so far would not be complete if it did not go to the implications of cost competitiveness in terms of trade performance. How are the cost advantages and gains, discussed above, translated into export gains or losses and competitive advantages or disadvantages? This section looks at the findings so far through the evidence of trade performance provided by export share and revealed comparative advantage (RCA) indicators. It identifies the most competitive industries through their export shares and RCA dynamics.

90. *Bulgaria in the world trade*: Revealed comparative advantages are identified here by comparing export to import ratio in a given sector to the average ratio in manufacturing.[53] Table 9 shows Bulgaria's trade with the rest of the world. Export to import ratios indicate that Bulgaria enjoys RCA in 8 industries, accounting together for about 70 percent of export earnings. Only two of them, however, have improved their export-import ratios in 1998–2002: textiles and clothing, and leather manufactures. These sectors account for 28 percent of export earnings.

91. The engine of the outstanding export performance in textiles and clothing is the clothing industry. Its exports grew threefold between 1997 and 2002, reaching 81 percent of textile exports and 20 percent of manufacturing exports. The export/import ratio fell slightly from 3.8 to 3.4. The leather industry is driven by footwear. RCA improved there from 2.4 to 2.9, but its weight in overall exports remained low, at 3 percent.

92. Six other manufacturing sectors maintain a competitive edge despite deteriorating export-import ratios. These are metallurgy, chemicals, minerals, wood, furniture, and food and tobacco. The deterioration in the export-import ratio and, respectively, the comparative advantage is most pronounced in capital-intensive industries such as metals (from 3.5 to 2.0) and chemicals (from 1.7 to 0.8). They alone account for 27 percent of exports. Metal exports are driven by the iron and steel (8 percent of total manufacturing exports), and copper (6 percent of exports). While all exports of metal declined from 1997 to 2002 and lost part of their comparative advantage, exports of copper expanded and export/import ratio improved from 8.4 to 8.9. The robust growth of copper exports is entirely due to successful FDI privatization of the copper smelter near Pirdop.

[53] See *Balassa, B.* (1965) on the original concept of RCA.

Table 10

BULGARIA'S TRADE WITH THE REST OF THE WORLD: RCA BY SUBSECTORS 1997–2002

(USD million)

	1997			2002			2002 shares, %	
	Export	Import	Ratio	Export	Import	Ratio	Export	Import
Manufacturing, total	4545.2	4603.1	1.0	5185.0	7508.2	0.7		
Food, beverages, tobacco (IV)	473.4	216.2	2.2	270.4	240.6	1.1	5	3
Textiles and clothing (XI)	564.1	535.4	1.1	1264.9	1087.1	1.2	24	14
Leather, leather products (VIII)	35.9	68.2	0.5	56.0	93.3	0.6	1	1
Shoes (XII)	122.1	50.2	2.4	162.9	59.5	2.7	3	1
Wood, wood products (IX)	85.7	23.5	3.6	105.8	36.9	2.9	2	0
Pulp, paper and publishing (X)	65.6	124.8	0.5	65.0	200.6	0.3	1	3
Fuels, oil products, electricity (V/27)	375.1	1493.2	0.3	523.0	1,494.0	0.4	10	20
Chemicals (VI)	741.2	442.5	1.7	471.8	626.2	0.8	9	8
Rubber and plastics (VII)	172.3	158.5	1.1	148.9	352.7	0.4	3	5
Mineral products (V/25)	74.9	39.8	1.9	52.3	36.9	1.4	1	0
Mineral products (V/26)	46.5	159.8	0.3	22.5	191.2	0.1	0	3
Mineral products (XIII)	88.8	55.9	1.6	99.2	100.2	1.0	2	1
Metals and metal products (XV)	1048.7	303.8	3.5	949.8	466.5	2.0	18	6
Machinery and equipment (XVI/84)	262.7	447.2	0.6	359.1	899.1	0.4	7	12
Electrical and optical equipment (XVI/85)	179.1	199.7	0.9	238.1	581.7	0.4	5	8
Electrical and optical equipment (XVIII)	19.6	79.8	0.2	40.8	139.8	0.3	1	2
Transport machines and equipment (XVII)	111.4	147.1	0.8	85.3	664.8	0.1	2	9
N.E.C. furniture, lamps, toys (XX)	65.6	53.2	1.2	130.5	122.8	1.1	3	2
N.E.C. Jewelry (XIV)	12.1	2.3	5.3	77.1	10.0	7.7	1	0
N.E.C. other (XIX, XXI)	0.4	2.0	0.2	61.6	104.4	0.6	1	1

Source: BNB based on Custom Office data. The brackets show the classification of the sector in the harmonized system.

93. Fuels, refined oil products and energy are the third largest export earner accounting for about 10 percent of manufacturing exports. The sector's competitiveness in terms of RCA remains low due to the imports of crude oil, accounting for 20 percent of overall imports. Nevertheless, there is pronounced improvement in the RCA, due mainly to the exports of energy to neighboring countries (Table 10). The three sectors of clothing, metals, and fuels and energy account for more than half of Bulgaria's exports.

94. RCA performance in the technology-intensive industries such as machinery and equipment, electrical and optical equipment and transport machines is negative. Unlike other CEEC countries,[54] Bulgaria has not improved at all its competitiveness in these sectors – on the contrary: RCA deteriorates.

[54] See *Havlik* (2000).

95. Export structure dynamics reveals slight shift in export specialization away from food, beverages and tobacco (relative weight in exports declined from 10 percent to 5 percent), and chemicals (decline from 16 percent to 9 percent), and towards higher relative weight of textiles (increase from 12 percent to 24 percent). The shift in export pattern can be largely explained with the regional shift of exports from the former Soviet Union to the EU. This shift puts competitiveness very much in the context of competition on the EU markets. Therefore, the discussion of competitiveness will be completed with a review of Bulgaria's export performance measured through its market share in EU imports from the competitor accession countries.

96. *Bulgaria in the EU trade. Evidence from export shares*. During the years of CBA Bulgaria's trade with the EU expanded both as a share of exports and imports and in absolute value terms. The boom in trade flows reflects the complete liberalization of trade in manufactures in the process of accession. Bulgaria's export share in extra EU trade grew slightly from 0.31 percent to 0.33 percent in 1997–2001, while the share of Bulgaria's imports from the EU in EU overall exports (excluding intra EU trade) rose faster from 0.26 percent to 0.39 percent.

Table 10

SHARES IN EXTRA EU TRADE

(%)

	Bulgaria		Baltics		CEEC 10	
	EU export	EU import	EU export	EU import	EU export	EU import
1997	0.26	0.31	0.84	0.62	10.91	8.47
1998	0.33	0.32	0.94	0.62	12.34	9.56
1999	0.36	0.29	0.81	0.63	12.30	9.78
2000	0.34	0.30	0.83	0.70	12.26	9.50
2001	0.39	0.33	0.91	0.74	12.91	10.86
2001/1997 change	150	106	108	119	118	128

Source: Eurostat (Comext – EEC Special Trade Domain).

97. Table 10 shows that Bulgaria's export expansion lags behind the overall CEEC 10 expansion in the same period, while import weight of the EU has grown faster than that of the group. Comparison with the group of the Baltic countries which has the size of Bulgaria and started more or less from the same position confirms this conclusion. This is an indication of a relative loss of export competitiveness *vis-à-vis* the EU in the group of the accession countries. The only country that did relatively worse in terms of overall export share is Cyprus.

98. Textile and metal dominate Bulgaria's exports to the EU, accounting for more than a half of it. Textile exports increased more than twice in value terms, and expanded their share in export revenues from the EU from 23 percent in 1997 to 31 percent in 2001 (see table 5 in the data annex). The expansion reflects mainly the increased exports of clothing and knitwear produced in Bulgaria with materials sent by foreign manufacturers. Exports of metals is mainly iron and steel and nonferrous metals such as copper, lead, zinc, *etc*.

99. Machinery and equipment also grew about twice in value from 154 million ECU in 1997 to 302 million euro in 2001, thus becoming the third most important export earner with 9 percent share in total exports in 2001. The relative weight of the next two sectors in the export list – food and beverages (including agriculture products), and chemicals – has been declining. Still, in 2001 they accounted together for about 12 percent of total exports. There is substantial increase in the exports of footwear, mineral products and furniture. The three sectors provide about 12 percent of export earnings in 2001.

100. Export share indicators show (table 5 of data annex) that Bulgaria gained market share in textiles and footwear. This is fully consistent with the evidence from sector competitiveness, based on ULC and RCA. Textile increased its share in EU textile imports from the CEEC from 6.4 percent in 1997 to 8.2 percent in 2002. Footwear and leather have been increasing their export shares as well. There is some modest expansion in the export shares of mineral products, ceramics and glass. Export of metals remain at the level of 7–8 percent of EU purchases from the ten accession countries. All other industrial sectors have lost market shares between 1997 and 2001. This is also true for the sector of machinery and electrical equipment. Despite its spectacular increase in value terms, its share in the overall CEEC engineering exports declined, i.e. Bulgaria is loosing competitiveness in this sector.

7. Conclusion: Policy Implications

101. Since the introduction of CBA in 1997, Bulgaria's competitive advantages and trade specialization went through substantial structural adjustment. Bulgaria has been losing its cost and export advantages and positions in traditional material and energy intensive industries and has been developing new specialization in labor-intensive industries. Driven mainly by the regional shift in trade from the ex-Soviet Union to the EU, traditional competitive advantages in such material intensive exports like agriculture products, food and tobacco, and chemicals have declined. At the same time Bulgaria

developed new specialization and market positions in clothing and footwear, wood and furniture. The market shares in such major traditional exports as metals and mineral manufactures have been sustained, but export-import ratios have gradually deteriorated.

102. These developments can be largely explained by relative cost and productivity movements. The industries with highest scores in export competitiveness in terms of market shares and competitive advantages scored substantial gains in unit labor costs. These are textiles and clothing, minerals, wood and furniture. In the case of the export leader, textiles and clothing, the impressive improvement in competitiveness has been achieved through drop in average wage rather than by increase in productivity. Such a pattern of competitiveness is certainly not the best, especially for an accession country that faces the challenge to close the income gap with the EU. Neither is it sustainable in the medium run as it erodes demand while at the same time may easily be wiped out by real appreciation.

103. Footwear experience is quite different. Productivity has been lagging behind wages resulting in loss in unit labor costs. Nevertheless, footwear achieved excellent export results. One of the reasons might be that FDI brought in sophisticated production approach, where brand name and marketing are more important than costs. This, however, remains an isolated and non-confirmed case of investment-driven competitiveness.

104. In general, productivity and export performance place Bulgaria at the stage of factor-driven competitiveness. Competition is largely in materials (metals, minerals, refined petroleum products, chemicals, *etc*.) and labor-intensive manufactures: clothing, footwear, wood and furniture. Unlike the other CEEC, Bulgaria has not entered yet the competition in the world of differentiated products. Electrical equipment sector comes first in productivity gains, but resultant cost advantages have not been translated into export gains. Productivity growth in machinery and equipment overweighs real wage growth, but market shares are falling and comparative advantage is diminishing.

105. Therefore, in the short run cost and price competitiveness have primary importance and relevance for economic policy. How can the government help the private sector enhance its competitive capacity? First and foremost, the government should continue its policy of refraining from any form of direct intervention in private sector wage setting. Second, amendments to the Labor Code are needed to increase labor market flexibility so that employers can adjust their production to changing demand conditions at minimum labor cost.

106. The impact of several recently-introduced policy measures should be well monitored and assessed:

a. the effect of subsidized employment on labor market flexibility;
b. the impact of obligatory registration of employment contracts on the grey economy;
c. the effect of minimum insurance thresholds on wage levels: anecdotal evidence shows that employers tend to respond by adjusting the reported wage up to the mandatory minimum in order to decrease the amount of taxable income, or/and by adjusting actual payment down to the minimum. Thus, given the rigidity of the labor market, the insurance thresholds may tend to establish an effective benchmark for wage adjustment. Even though they are designed as a tool of raising compliance and collection rates rather than as a tool of income policy, in reality they may play such a role under excess supply and limited mobility of the labor force. This hypothesis needs to be verified with future wage statistics;
d. the impact of the wage ceilings in the public sector on the private sector wage levels.

107. Furthermore, the government can seek ways to reduce the burden of payroll tax which is high even compared to the EU average. It may use the extra revenues from the registration of employment contracts, the minimum insurance thresholds, and the unification of the collections of the PIT and SIC for reduction of payroll tax rates. One initial step would be the transfer of compensation payments for the first days of sick leave to the NSSI.

108. Labor costs are not the only determinants of cost competitiveness in manufacturing. In the case of material and capital intensive industries, it would be the cost of intermediate and capital goods that might have stronger influence on cost competitiveness. The costs of intermediate consumption are closely related to the degree of openness of the economy and the free movement of goods and services. Goods market is liberalized. Still there are increasing pressures for temporary safeguard measures. Some of them have been applied without taking into consideration the competitive losses of the industries that use the protected products as inputs. For instance, protection of domestic producers of ammonium nitrate raises the production cost of agriculture producers. This in turn together with safeguards against cheap imports of vegetables raises the production cost of canning industry and so on and so forth. The business is not supposed to look beyond its own interest. It is the government's responsibility to ensure that the gains of one sector do not occur at the expense of the other and are consistent with a coherent competitiveness policy agenda.

109. Services are increasing their share in overall production costs. Further liberalization in the framework of WTO GATS talks and wider opening of the sector for FDI will reduce the cost of service inputs. This of course is not an automatic process. It is possible that the penetration of foreign service providers may first raise the cost similarly to the experience with foreign financial services and marketing and advertising. But with more companies entering the market services would improve in quality and in prices.

110. Policies related to cost competitiveness need to stake much more on enhancing productivity rather than reducing costs. This is especially important for a country with pegged exchange rate, which competes primarily on cost in non-differentiated products. Competitive advantages in these products are largely determined by natural endowments and the cost of intermediate products. Under such a pattern of trade specialization Bulgaria is excessively exposed to commodity price volatilities. The wide fluctuations of export earnings from metals and mineral products are good evidence of this overexposure.

111. Things are additionally complicated in the case of Bulgaria by the peg under the CBA. It limits the country's capacity to adjust to external shocks. But the cost of premature exit from the CBA would be much higher than the cost of losses of competitiveness from real appreciation, or external price shocks. Therefore in the foreseeable future Bulgaria cannot afford floating rate. This makes productivity-oriented policies crucial in terms of competitiveness.

112. In the mid-term the major challenge to economic policy is how to shift to investment and technology-driven stage of development, and avoid locking into specialization in primary and homogeneous products. The success in this regard would hinge on the success of two sets of government policy: the ability of the government to attract foreign investors, and the success of its program to encourage technology transfer and innovation.

113. A major responsibility of the government in regard to fostering competitiveness is to encourage effective dialogue on competitiveness policy with the private sector.[55] This, however, implies to a much higher extent the need for new skills and pro-activeness by the business as well. The business needs to develop the necessary cooperative mindset and agreement between the manufacturers within the industry so that they can speak with the government in one voice at sector level through their associations. Furthermore, the latter need to develop the necessary analytical capacity to identify the institutional and policy setbacks to sector competitiveness, and to propose clear and real-

[55] See as well *J.E. Austin Associates, Inc./MSI – Bulgaria* (2002), Main Report, p. 27.

istic policy measures. So far the manufacturers' demands are limited mainly to requests for VAT exemptions, subsidies, or temporary safeguard measures. The business needs to develop more strategic vision on competitiveness and to back its proposals with analysis on the projected costs and benefits of the proposed legislative or institutional measures. Competitiveness would hardly gain if the business waits for the government to design the best competitiveness strategy.

114. The Government will be able to respond more adequately to the challenges of Bulgarian competitiveness if it listens to the business and tries to meet its demands as much as possible without affecting other sectors, or the public at large. A good instrument for promoting such a dialogue would be a council for competitiveness policy with representatives of the government, the private sector, the labor unions, and the think-tanks.[56] The best initial output of such dialogue would be a coherent competitiveness strategy and action plan on economy-wide level incorporating sector-level mid-term policy frameworks. They need to identify the internal and external obstacles to national and sector level competitive performance and draw the relevant policy measures. Furthermore, this standing instrument for policy dialogue may discuss and evaluate the impact of specific policy and legislative measures on competitiveness at sector and national level: the various SME-promotion measures and funds, venture funds, investment promotion policies, as well as privatization deals, temporary safeguard measures, *etc*. On a sector level there is a track record of successful dialogue between the IT sector and the Government, which can be emulated by other sectors such as canning and wine, clothing, electrical machines and equipment.

115. The Government has drafted several strategies and programs on enhancing competitiveness: *The Program Industry* 2000, *The National Economic Development Plan* (2002–2006);[57] *The Innovation Strategy, and Implementation Program: Raising the Competitiveness of the Economy*. Even though approval or implementation is pending, they constitute a good base for comprehensive national program on competitiveness. In the short term it will of course focus on the requirements of the second Copenhagen criterion, namely Bulgaria's capacity to withstand competitive pressures within the Union. But in the mid-term and long-term it can draw policies towards more sustainable competitiveness based on technology and knowledge-intensive products and specialization.

[56] See Bulgaria Competitiveness Initiative web site (www.competitiveness.gb) for outline of the experience of such councils in the USA, Ireland, Singapore, Hong Kong and Malaysia.

[57] *Agency for Economic Analysis and Forecasting* (2003), pp. 245–262.

Annex 1: Methodology Notes

Measuring cost competitiveness through REER and ULC

Competitive gains/losses are evaluated through changes in relative prices, which in competitive markets reflect more or less changes in production costs.

The underlying theory argues that a country's competitiveness improves when the relative prices of its tradable goods decline. Thus, competitiveness is defined as the relative price of domestic tradable goods in terms of foreign tradable goods. If traded goods were perfect substitutes, i.e. PPP holds at all times, there would be no changes in competitiveness. The law of one price might hold for primary products, which are homogenous and are traded at well organized markets. But in the world of differentiated manufactured goods and differentiated services there is no perfect substitution, and competitiveness may vary over time.

The relative price of tradables is measured by the real exchange rate, i.e. the nominal exchange rate (foreign currency *per* unit of domestic currency), adjusted for price differences:

$$RER = NER \times P/P^*,$$

where P and P* denote domestic and foreign price levels respectively.

The major problems are related to measuring P/P*. Ideally P and P* should reflect representative basket of differentiated traded goods and services (without the primary products), and should be adjusted to exclude distortions from price shocks, or pricing-to-market (i.e. they should reflect market equilibrium). As such traded goods equilibrium price index does not exist, the closest alternatives are CPIs, PPIs, GDP deflators, export/import unit values and ULC.

Bulgarian National Bank's REER index used in this study is based on CPI. Domestic CPI, however, is not a perfect measure of changes in production costs. First, as an aggregate price index,[58] the CPI includes the non-tradable goods, where productivity growth may lag well behind that in the tradables sector, distorting the picture of external competitiveness. Second, when administrative prices are liberalized or adjusted to their cost-recovery levels, or subsidies are eliminated, the CPI grows, but this has little to do with changes in productivity. Third, growth in CPI may reflect growth in excise or VAT rather than productivity losses. Fourth, CPI underestimates the productivity gains (or losses) in the manufacturing of intermediate capital goods, which form large part of trade and of country's export competitiveness. Last but not least, CPI includes prices of imported consumer goods, which make it endogenous to the nominal exchange rate. For example, with the recent nominal appreciation of the BGL against the USD, the prices of USD imports in lev should decline, keeping the CPI down and thus limiting the scope of real appreciation.

[58] The same problem is encountered when working with the WPI or GDP deflator.

All above said, CPI has two major advantages: its monthly availability and its compatibility across countries. Therefore despite its limitations, the message of the CPI REER should not be ignored, but should be used as early-warning signal that may require verification with other indicators of export competitiveness.

The indicator that reflects most closely production costs and avoids the endogeneity of price indicators to exchange rate is unit labor cost. ULC is defined as compensation *per* employee divided by productivity. Subject to data availability, compensation *per* employee is calculated as total labor costs in manufacturing (including compensations and payroll taxes) divided by number of employed. Productivity *per* employee is obtained by dividing value added in manufacturing by employment and deflating it with PPI by sector. Thus ULC indicates how much an employer pays for labor for one lev of value added.

The ULC is not perfect either. Its major flaw is that ULC does not capture other costs of production, such as the cost of capital, cost of inputs, non-payroll taxes, *etc*. For instance, ULC decline may reflect a switch from labor intensive to capital intensive production, but this does not necessarily result in less production cost. Factor substitution may increase the cost, resulting in decline in competitiveness over time if measured by relative price movements. But investment in new equipment that substitutes labor does not usually aim at saving labor cost, but rather at expanding the product line-up or the product features and quality. Therefore, the increase in production cost due to factor substitution does not necessarily mean a loss in competitiveness. The share of labor versus capital has dropped, but still ULC is a good measure of competitiveness. The more so as capital goods are traded internationally and do not diverge substantially as components of production cost, while labor which is far less mobile internationally still accounts for most of the divergence in production costs across countries.

Therefore, despite its flaws, the relative ULC in manufacturing is widely considered the best single indicator of external competitiveness.[59]

[59] More on ULC and other measures of competitiveness can be found in *Turner* and *Van't Dack* (1993), *Oulton* (1994), *Marsh* and *Tokarick* (1994), *Bureau of Labor Statistics* (2003).

Annex 2: Data Tables

Table 1

ULC CHANGE BY SUBSECTORS OF MANUFACTURING

(gross output in mln. levs; wages in levs)

Subsectors of manufacturing		1997	1998	1999	2000	2001	2002	2002/1997
Total	Gross output	13511	13501	12523	15754	17042	16692	
	Employed	720285	689748	615829	568604	562251	556900	
	Wages	1782	2335	2431	2626	2722	2926	
	ULC	0.095	0.119	0.120	0.095	0.090	0.098	
	yoy change	100	125.6	100.2	79.3	94.8	108.7	102.8
Food, beverages, tobacco	Gross output	2834	3431	3050	3434	3567	3581	
	Employed	112663	114399	102269	95113	93842	98324	
	Wages	1709	2285	2430	2631	2712	2888	
	ULC	0.068	0.076	0.081	0.073	0.071	0.079	
	yoy change	100	112.1	106.9	89.4	97.9	111.1	116.7
Textiles, clothing	Gross output	869	958	883	1093	1340	1447	
	Employed	128239	132967	129672	133406	149535	154412	
	Wages	2428	3151	1584	1759	1861	2039	
	ULC	0.358	0.437	0.233	0.215	0.208	0.218	
	yoy change	100	122.1	53.2	92.3	96.7	104.8	60.7
Leather, leather products	Gross output	208	173	139	161	198	183	
	Employed	29453	24314	19816	19012	20384	19290	
	Wages	1108	1433	1580	1701	1751	1844	
	ULC	0.157	0.201	0.225	0.201	0.180	0.194	
	yoy change	100	128.4	111.8	89.2	89.7	107.8	123.9
Wood, wood products	Gross output	166	193	246	265	296	339	
	Employed	16905	14973	14002	13099	13595	13811	
	Wages	1038	1471	1647	1839	1916	2158	
	ULC	0.106	0.114	0.094	0.091	0.088	0.088	
	yoy change	100	108.0	82.1	97.0	96.8	99.9	83.2
Pulp, paper, paper products, publishing and printing	Gross output	481	545	534	632	679	663	
	Employed	26593	25975	24126	22761	21691	20388	
	Wages	1485	2220	2481	2799	3106	3423	
	ULC	0.082	0.106	0.112	0.101	0.099	0.105	
	yoy change	100	128.9	105.9	89.9	98.4	106.1	128.2
Chemicals, chemical products, man-made fibres	Gross output	1634	1388	1173	1543	1643	1577	
	Employed	46463	45419	39369	32543	31616	29837	
	Wages	2854	3291	3447	3813	3995	4150	
	ULC	0.081	0.108	0.116	0.080	0.077	0.079	
	yoy change	100	132.7	107.4	69.5	95.6	102.1	96.8
Rubber and plastics	Gross output	363	353	297	359	391	347	
	Employed	24450	21512	18012	16080	15614	14687	
	Wages	1657	2167	2287	2357	2402	2749	
	ULC	0.112	0.132	0.139	0.106	0.096	0.116	
	yoy change	100	118.3	105.0	76.1	90.9	121.3	104.3

(continued)

(continued)

Subsectors of manufacturing		1997	1998	1999	2000	2001	2002	2002/1997
Nonmetal mineral products	Gross output	607	658	644	676	768	789	
	Employed	37965	34185	29266	24425	22592	20672	
	Wages	1786	2537	2769	2965	3098	3542	
	ULC	0.112	0.132	0.126	0.107	0.091	0.093	
	yoy change	100	118.0	95.5	85.1	85.1	101.8	83.1
Metals and metal products	Gross output	1811	2074	1764	2446	2350	2086	
	Employed	38808	36444	72663	54713	50018	45401	
	Wages	3576	4309	3170	3511	3607	4016	
	ULC	0.077	0.076	0.131	0.079	0.077	0.087	
	yoy change	100	98.8	172.5	60.1	97.8	113.9	114.1
Machinery and equipment	Gross output	1460	1088	969	1062	1225	1287	
	Employed	150375	138851	80342	75133	69197	68639	
	Wages	1684	2282	2470	2785	2977	3219	
	ULC	0.173	0.291	0.205	0.197	0.168	0.172	
	yoy change	100	167.9	70.3	96.2	85.3	102.1	99.0
Electrical and optical equipment	Gross output	524	587	547	681	872	968	
	Employed	47785	44436	37167	33155	31653	29695	
	Wages	1657	2135	2318	2654	2956	3166	
	ULC	0.151	0.162	0.158	0.129	0.107	0.097	
	yoy change	100	107.0	97.5	82.0	83.0	90.5	64.3
Transport machines and equipment	Gross output	313	391	253	260	297	274	
	Employed	23691	21754	18007	12999	13081	13921	
	Wages	2225	3010	2863	3077	3181	3352	
	ULC	0.168	0.167	0.204	0.154	0.140	0.170	
	yoy change	100	99.4	121.7	75.5	91.1	121.6	101.1
Coke, refined petroleum products and other manufacturing, n.e.c.	Gross output	2241	1662	2024	3142	3416	3151	
	Employed	36895	34519	31118	29892	29433	27823	
	Wages	4409	6215	5771	6484	6961	7337	
	ULC	0.073	0.129	0.089	0.062	0.060	0.065	
	yoy change	100	177.8	68.7	69.5	97.2	108.0	89.3

Table 2

PRODUCTIVITY BY SUBSECTORS OF MANUFACTURING

(mln. levs)

Subsectors of manufacturing		1997	1998	1999	2000	2001	2002
Total	Gross output	13511	13501	12523	15754	17042	16692
	PPI	1.000	1.162	1.199	1.409	1.462	1.479
	PPI Deflated	13511	11622	10445	11180	11655	11282
	Employed	720285	689748	615829	568604	562251	556900
	Productivity	18758	16849	16961	19662	20729	20259
	1997=100	100	89.8	90.4	104.8	110.5	108.0

(continued)

(continued) (mln. levs)

Subsectors of manufacturing		1997	1998	1999	2000	2001	2002
Food, beverages, tobacco	Gross output	2834	3431	3050	3434	3567	3581
	PPI	1.000	1.221	1.225	1.303	1.367	1.400
	PPI Deflated	2834	2810	2489	2636	2610	2558
	Employed	112663	114399	102269	95113	93842	98324
	Productivity	25155	24567	24337	27716	27813	26020
	1997=100	100	97.7	96.7	110.2	110.6	103.4
Textiles, clothing	Gross output	869	958	883	1093	1340	1447
	PPI	1.000	1.418	1.479	1.455	1.481	1.418
	PPI Deflated	869	676	597	751	905	1020
	Employed	128239	132967	129672	133406	149535	154412
	Productivity	6776	5080	4605	5629	6050	6607
	1997=100	100	75.0	68.0	83.1	89.3	97.5
Leather, leather products	Gross output	208	173	139	161	198	183
	PPI	1.000	1.431	1.337	1.403	1.599	1.475
	PPI Deflated	208	121	104	115	124	124
	Employed	29453	24314	19816	19012	20384	19290
	Productivity	7062	4972	5245	6037	6074	6432
	1997=100	100	70.4	74.3	85.5	86.0	91.1
Wood, wood products	Gross output	166	193	246	265	296	339
	PPI	1.000	1.507	1.650	1.707	1.717	1.730
	PPI Deflated	166	128	149	155	172	196
	Employed	16905	14973	14002	13099	13595	13811
	Productivity	9820	8551	10649	11851	12678	14191
	1997=100	100	87.1	108.5	120.7	129.1	144.5
Pulp, paper, paper products, publishing and printing	Gross output	481	545	534	632	679	663
	PPI	1.000	1.214	1.401	1.807	1.967	2.063
	PPI Deflated	481	449	381	350	345	321
	Employed	26593	25975	24126	22761	21691	20388
	Productivity	18087	17282	15797	15367	15914	15763
	1997=100	100	95.5	87.3	85.0	88.0	87.1
Chemicals, chemical products, man-made fibres	Gross output	1634	1388	1173	1543	1643	1577
	PPI	1.000	1.215	1.226	1.375	1.578	1.603
	PPI Deflated	1634	1142	957	1122	1041	984
	Employed	46463	45419	39369	32543	31616	29837
	Productivity	35168	25151	24300	34491	32937	32967
	1997=100	100	71.5	69.1	98.1	93.7	93.7
Rubber and plastics	Gross output	363	353	297	359	391	347
	PPI	1.000	1.065	0.972	1.109	1.169	1.224
	PPI Deflated	363	331	306	324	335	284
	Employed	24450	21512	18012	16080	15614	14687
	Productivity	14847	15410	16962	20134	21427	19308
	1997=100	100	103.8	114.2	135.6	144.3	130.0

(continued)

(continued)

Subsectors of manufacturing		1997	1998	1999	2000	2001	2002
Nonmetal mineral products	Gross output	607	658	644	676	768	789
	PPI	1.000	1.266	1.329	1.388	1.516	1.527
	PPI Deflated	607	520	484	487	507	517
	Employed	37965	34185	29266	24425	22592	20672
	Productivity	15988	15205	16552	19942	22427	25000
	1997=100	100	95.1	103.5	124.7	140.3	156.4
Metals and metal products	Gross output	1811	2074	1764	2446	2350	2086
	PPI	1.000	0.957	1.032	1.203	1.159	1.090
	PPI Deflated	1811	2168	1709	2033	2027	1914
	Employed	38808	36444	72663	54713	50018	45401
	Productivity	46666	59480	23526	37163	40525	42166
	1997=100	100	127.5	50.4	79.6	86.8	90.4
Machinery and equipment	Gross output	1460	1088	969	1062	1225	1287
	PPI	1.000	1.338	1.361	1.460	1.600	1.622
	PPI Deflated	1460	813	712	727	766	794
	Employed	150375	138851	80342	75133	69197	68639
	Productivity	9709	5858	8865	9679	11063	11561
	1997=100	100	60.3	91.3	99.7	113.9	119.1
Electrical and optical equipment	Gross output	524	587	547	681	872	968
	PPI	1.000	1.364	1.314	1.345	1.523	1.501
	PPI Deflated	524	430	416	506	573	645
	Employed	47785	44436	37167	33155	31653	29695
	Productivity	10966	9684	11203	15272	18089	21724
	1997=100	100	88.3	102.2	139.3	165.0	198.1
Transport machines and equipment	Gross output	313	391	253	260	297	274
	PPI	1.000	1.332	1.377	1.369	1.393	1.439
	PPI Deflated	313	294	184	190	213	190
	Employed	23691	21754	18007	12999	13081	13921
	Productivity	13212	13497	10203	14614	16299	13677
	1997=100	100	102.2	77.2	110.6	123.4	103.5
Coke, refined petroleum products and other manufacturing, n.e.c.	Gross output	2241	1662	2024	3142	3416	3151
	PPI	1.000	0.994	0.991	1.198	1.357	1.310
	PPI Deflated	2241	1673	2042	2622	2517	2406
	Employed	36895	34519	31118	29892	29433	27823
	Productivity	60740	48461	65607	87726	85524	86474
	1997=100	100	79.8	108.0	144.4	140.8	142.4

Table 3

WAGES GROWTH BY SUBSECTORS OF MANUFACTURING

Manufacturing annual wages 1997=100		1997	1998	1999	2000	2001	2002
Overall manufacturing	Levs	1782	2335	2431	2626	2722	2926
	Nominal	100	131.1	136.5	147.4	152.8	164.2
	CPI-based real	100	110.4	112.1	109.8	106.0	107.6
	PPI-based real	100	112.8	113.8	104.6	104.5	111.0
Food, beverages, tobacco	Levs	1709	2285	2430	2631	2712	2888
	Nominal	100	133.7	142.2	153.9	158.7	169.0
	CPI-based real	100	112.6	116.8	114.6	110.0	110.7
	PPI-based real	100	109.5	116.0	118.2	116.1	120.7
Textiles, clothing	Levs	2428	3151	1584	1759	1861	2039
	Nominal	100	129.8	65.2	72.4	76.6	84.0
	CPI-based real	100	109.3	53.6	53.9	53.2	55.0
	PPI-based real	100	91.5	44.1	49.8	51.7	59.2
Leather, leather products	Levs	1108	1433	1580	1701	1751	1844
	Nominal	100	129.3	142.6	153.5	158.0	166.4
	CPI-based real	100	109.0	117.2	114.3	109.6	109.1
	PPI-based real	100	90.4	106.6	109.4	98.8	112.8
Wood, wood products	Levs	1038	1471	1647	1839	1916	2158
	Nominal	100	141.7	158.7	177.2	184.6	207.9
	CPI-based real	100	119.4	130.4	131.9	128.0	136.2
	PPI-based real	100	94.0	96.2	103.8	107.5	120.2
Pulp, paper, paper products,	Wages	1485	2220	2481	2799	3106	3423
publishing and printing	Nominal	100	149.5	167.1	188.5	209.2	230.5
	CPI-based real	100	125.9	137.3	140.3	145.0	151.1
	PPI-based real	100	123.1	119.2	104.3	106.3	111.7
Coke, refined petroleum products,	Wages	4409	6215	5771	6484	6961	7337
nuclear fuel*	Nominal	100	141.0	130.9	147.1	157.9	166.4
	CPI-based real	100	118.8	107.6	109.5	109.5	109.0
	PPI-based real	100	121.3	109.2	104.4	108.0	112.5
Chemicals, chemical products,	Wages	2854	3291	3447	3813	3995	4150
man-made fibres	Nominal	100	115.3	120.8	133.6	140.0	145.4
	CPI-based real	100	97.1	99.2	99.5	97.1	95.3
	PPI-based real	100	94.9	98.5	97.2	88.7	90.7
Rubber and plastics	Wages	1657	2167	2287	2357	2402	2749
	Nominal	100	130.8	138.0	142.2	145.0	165.9
	CPI-based real	100	110.2	113.4	105.9	100.5	108.7
	PPI-based real	100	122.8	142.0	128.3	124.0	135.6

(continued)

(continued)

Manufacturing annual wages 1997 = 100		1997	1998	1999	2000	2001	2002
Nonmetal mineral products	Wages	1786	2537	2769	2965	3098	3542
	Nominal	100	142.0	155.0	166.0	173.5	198.3
	CPI-based real	100	119.7	127.4	123.6	120.3	130.0
	PPI-based real	100	112.2	116.6	119.6	114.4	129.9
Metals and metal products	Wages	3576	4309	3170	3511	3607	4016
	Nominal	100	120.5	88.6	98.2	100.9	112.3
	CPI-based real	100	101.5	72.8	73.1	69.9	73.6
	PPI-based real	100	125.9	85.9	81.6	87.0	103.1
Machinery and equipment	Wages	1684	2282	2470	2785	2977	3219
	Nominal	100	135.5	146.7	165.4	176.8	191.2
	CPI-based real	100	114.2	120.5	123.1	122.6	125.3
	PPI-based real	100	101.3	107.8	113.2	110.5	117.9
Electrical and optical equipment	Wages	1657	2135	2318	2654	2956	3166
	Nominal	100	128.8	139.9	160.2	178.4	191.1
	CPI-based real	100	108.5	114.9	119.3	123.7	125.2
	PPI-based real	100	94.5	106.5	119.1	117.1	127.3
Transport machines and equipment	Wages	2225	3010	2863	3077	3181	3352
	Nominal	100	135.3	128.7	138.3	143.0	150.7
	CPI-based real	100	114.0	105.7	103.0	99.1	98.7
	PPI-based real	100	101.6	93.4	101.0	102.6	104.7
Manufacturing, n.e.c.	Wages	1089	1534	1682	1831	1912	2181
	Nominal	100	140.9	154.5	168.1	175.6	200.3
	CPI-based real	100	118.7	126.9	125.2	121.8	131.2
	PPI-based real	100	141.8	155.8	140.3	129.4	152.9
CPI		100	118.7	121.7	134.3	144.2	152.6
PPI		100	116.2	119.9	140.9	146.2	147.9

*There are no data on subsector PPI, therefore adjustment is made with the manufacturing PPI.

Table 4

MANUFACTURING ENTERPRISE STRUCTURE OF EXPENDITURES BY SUBSECTORS 2000–2002

(%)

Subsectors of manufacturing		Total	Materials	Services	Depre-ciation	Labor cost	Wages	Insurance	Other
Food, beverages, tobacco	2000	100.0	70.3	10.8	3.7	12.5	8.7	3.8	2.7
	2001	100.0	70.1	11.1	5.8	10.9	7.9	3.0	2.1
	2002	100.0	67.4	12.4	6.6	11.0	8.0	3.0	2.6

(continued)

(continued) (%)

Subsectors of manufacturing		Total	Materials	Services	Depre-ciation	Labor cost	Wages	Insurance	Other
Textiles, clothing	2000	100.0	53.6/26.3	12.6/19.2	7.2/4.5	23.8/46.4	16.1/31.7	7.7/14.7	2.8/3.6
	2001	100.0	37.8	18.8	6.1	34.2	24.2	10.0	3.1
	2002	100.0	36.3	20.1	7.7	33.2	23.9	9.3	2.7
Leather, leather products	2000	100.0	46.7	15.6	4.0	31.3	21.0	10.3	2.4
	2001	100.0	45.4	18.9	4.7	28.6	20.0	8.6	2.4
	2002	100.0	44.2	19.5	5.4	27.5	19.7	7.8	3.4
Wood, wood products (w/o furniture)	2000	100.0	63.4	13.2	4.1	16.9	11.7	5.2	2.4
	2001	100.0	63.1	13.5	6.1	13.7	10.1	3.6	3.6
	2002	100.0	63.0	14.7	6.8	12.6	9.4	3.2	2.9
Pulp, paper, paper products, publishing and printing	2000	100.0	54.1	19.9	5.1	18.4	13.0	5.4	2.5
	2001	100.0	50.2	23.7	6.9	16.5	12.2	4.3	2.7
	2002	100.0	51.1	23.0	7.2	15.9	11.9	4.0	2.8
Chemicals, chemical products, man-made fibres	2000	100.0	65.7	10.5	6.2	14.2	9.8	4.4	3.4
	2001	100.0	67.5	11.5	5.5	12.4	8.8	3.6	3.1
	2002	100.0	63.5	12.3	7.4	12.7	9.2	3.5	4.1
Rubber and plastics	2000	100.0	65.4	6.8	5.6	20.6	14.4	6.2	1.6
	2001	100.0	70.0	5.5	6.0	17.0	12.4	4.6	1.5
	2002	100.0	66.7	5.8	9.2	16.6	12.0	4.6	1.7
Nonmetal mineral products	2000	100.0	60.7	13.6	4.7	18.1	12.2	5.9	2.9
	2001	100.0	59.1	14.1	8.6	15.1	10.5	4.6	3.1
	2002	100.0	56.2	16.2	10.7	14.3	10.2	4.1	2.6
Metals and metal products	2000	100.0	71.1	10.0	4.4	11.0	7.2	3.8	3.5
	2001	100.0	70.9	10.1	4.1	13.2	9.3	3.9	1.7
	2002	100.0	69.5	10.9	4.9	12.8	9.0	3.8	1.9
Machinery	2000	100.0	52.0	10.5	6.0	28.4	19.8	8.6	3.1
	2001	100.0	51.4	12.7	5.8	26.9	19.3	7.6	3.2
	2002	100.0	50.9	13.1	5.8	26.4	19.0	7.4	3.8
Electrical and optical equipment	2000	100.0	58.9	11.5	5.0	21.9	15.4	6.5	2.7
	2001	100.0	59.3	11.8	5.2	20.8	14.8	6.0	2.9
	2002	100.0	61.1	13.5	5.2	17.3	12.3	5.0	2.9
Transport machines and equipment	2000	100.0	47.8	18.4	4.5	27.3	18.4	8.9	2.0
	2001	100.0	47.2	21.7	5.0	23.2	16.3	6.9	2.9
	2002	100.0	52.7	15.0	5.2	23.8	17.0	6.8	3.3
Manufacturing n.e.c.	2000	0.0	..	..	..	0.0	..	..	..
	2001	100.0	60.0	9.4	5.0	22.4	16.4	6.0	3.2
	2002	100.0	68.6	8.0	4.7	16.7	12.3	4.4	2.0

Note: Until 2000 metal products are classified together with non-electrical machines, while since 2001 they are transferred to the group of metals.

Source: NSI (2003).

Table 5

BULGARIA'S EXPORT SHARES IN EU TRADE

(mln. euro)

Sectors of manufacturing (by customs tariff sections)	1997				1998				1999				2000				2001		
	value	share (%)	rank	change (%)	value	share (%)	rank	change (%)	value	share (%)	rank	change (%)	value	share (%)	rank	change (%)	value	share (%)	change (%)
1. Textiles (XI)	479	22.9	2	31.0	591	26.4	1	23.4	637	28.4	1	7.8	848	27.5	2	33.1	1036	30.6	22.2
Share in EU imports from CEEC 10, %						**6.4**				**6.7**				**7.7**				**8.2**	
2. Base metals and articles (XV)	497	23.8	1	37.0	573	25.6	2	15.3	508	22.7	2	-11.3	911	29.5	1	79.3	790	23.3	-13.3
Share in EU imports from CEEC 10, %						**7.0**				**6.3**				**8.4**				**7.0**	
3. Machinery and electrical... (XVI)	154	7.4	5	2.0	194	8.7	4	26.0	214	9.5	4	10.3	263	8.5	3	22.9	302	8.9	14.8
Share in EU imports from CEEC 10, %						**1.1**				**1.0**				**0.9**				**0.9**	
4. Agriculture, incl. processed (I–IV)	237	11.4	3	6.0	241	10.8	3	1.7	261	11.6	3	8.3	208	6.7	4	-20.3	229	6.8	10.1
Share in EU imports from CEEC 10, %						**7.6**				**7.5**				**5.5**				**5.2**	
5. Chemical products (VI)	227	10.9	4	6.0	151	6.7	5	-33.5	112	5.0	5	-25.8	176	5.7	5	57.1	184	5.4	4.5
Share in EU imports from CEEC 10, %						**6.3**				**5.0**				**5.4**				**5.6**	
6. Footwear... (XII)	110	5.3	6	37.0	106	4.7	6	-3.6	103	4.6	6	-2.8	124	4.0	6	20.4	177	5.2	42.7
Share in EU imports from CEEC 10, %						**6.9**				**6.0**				**6.2**				**7.3**	
7. Mineral products (V)	72	3.4	7		62	2.8	8	-13.9	42	1.9	12	-32.3	98	3.2	7	133.3	162	4.8	65.3
Share in EU imports from CEEC 10, %						**2.3**				**1.7**				**2.7**				**3.7**	
8. Misc. manufactures (XX)	38	1.8	10		42	1.9	10	10.5	56	2.5	9	33.3	69	2.2	9	23.2	83	2.4	20.3
Share in EU imports from CEEC 10, %						**1.0**				**1.2**				**1.2**				**1.2**	
9. Plastic products (VII)	63	3.0	8	6.0	71	3.2	7	12.7	62	2.8	7	-12.7	79	2.6	8	27.4	77	2.3	-2.5
Share in EU imports from CEEC 10, %						**2.8**				**2.1**				**2.0**				**1.8**	
10. Wood... (IX)	57	2.7	9		56	2.5	9	-1.8	62	2.8	8	10.7	65	2.1	10	4.8	73	2.2	12.3
Share in EU imports from CEEC 10, %						**1.7**				**1.6**				**1.5**				**1.8**	

(continued)

(continued) (mln. euro)

Sectors of manufacturing (by customs tariff sections)	1997				1998				1999				2000				2001		
	value	share (%)	rank	change (%)	value	share (%)	rank	change (%)	value	share (%)	rank	change (%)	value	share (%)	rank	change (%)	value	share (%)	change (%)
11. Ceramics, glass... (XIII)	40	1.9			40	1.8	11	0.0	44	2.0	11	10.0	62	2.0	11	40.9	71	2.1	14.5
Share in EU imports from CEEC 10, %						**2.7**				**2.6**				**3.1**				**3.3**	
12. Transport equipment (XVII)					19	0.8	14	33.0	46	2.1	10	142.1	42	1.4	12	-8.7	51	1.5	21.4
						0.2%				**0.4%**				**0.3%**				**0.3%**	
13. Hides and skins (VIII)					24	1.1	12	-24.0	22	1.0	13	-8.3	37	1.2	13	68.2	45	1.3	21.6
						4.7%				**4.2%**				**5.3%**				**5.4%**	
14. Paper, pulp... (X)					21	0.9	13	-40.0	22	1.0	14	4.8	27	0.9	14	22.7	29	0.9	7.4
						1.7%				**1.6%**				**1.4%**				**1.3%**	
15. Optical, musical inst., clocks... (XVIII)					14	0.6	16	-26.0	19	0.8	15	35.7	20	0.6	15	5.3	26	0.8	30.0
						1.8%				**2.2%**				**1.7%**				**1.7%**	
16. Pearls, precious/semi-precious stones... (XIV)					15	0.7	15	159.0	15	0.7	16	0.0	20	0.6	16	33.3	10	0.3	-50.0
						4.0%				**3.3%**				**3.6%**				**1.7%**	
17. Arms and ammunition... (XIX)					1	0.0	17	64.0	0	0.0	18	-33.0	1	0.0	17	47.0	1	0.0	143.0
18. Works of art, antiques... (XXI)					0	0.0	18	23.0	3	0.1	17	616.0	1	0.0	18	-66.7	1	0.0	-18.0
Other n.e.c.	114				17	0.8			14	0.6			32	1.0			41	1.2	
ALL SECTORS	2088	100			2238.6	100		7.2	2242.536	100		0.2	3083.569	100		37.5	3390	100	9.9

* Export share is the share of Bulgaria's exports in the product category to EU overall imports of this category from the ten CEEC accession countries.
Export value is in ECU/EUR million. Share and ranking show the position of the sector in overall exports from Bulgaria to the EU. Change is year on year.

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Abbreviations and Acronyms

CBA	Currency Board Arrangement
CED	Center for Economic Development
CEEC	Central and East European Countries
CPI	Consumer Price Index
FDI	Foreign Direct Investment
GCI	Growth Competitiveness Index
GCR	Global Competitiveness Report
GDP p/c	Gross Domestic Product *per capita*
GP	General Physician
GVA	Gross Value Added
ICT	Information and Communication Technologies
IFI	International Financial Institutions
IME	Institute for Market Economics
LFS	Labor Force Survey
MICI	Microeconomic Competitiveness Index
n.e.c.	not elsewhere classified
NHIF	National Health Insurance Fund
NRA	National Revenue Agency
NSI	National Statistical Institute
NSSI	National Social Security Institute
OEM	Original Equipment Manufacturer
PIT	Personal Income Tax
PPI	Producer Price Index
PPP	Purchasing Power Parity
RCA	Revealed Comparative Advantage
REER	Real Effective Exchange Rate
SIC	Social Insurance Contributions
SME	Small- and Medium-size Enterprises
SOE	State-owned Enterprises
ULC	Unit Labor Cost
WCY	World Competitiveness Yearbook
WEF	World Economic Forum
WTO GATS	World Trade Organization General Agreement on Trade in Services
yoy	year on year

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