Czech Statistical Office

Long-Term Development of (Un)employment and GDP with a Special Focus on Part-time Jobs

Introduction

The study is concerned with long-term behaviour of unemployment on the macroeconomic level and its relationship to another macroeconomic variable, the gross domestic product (GDP). This is followed by a more detailed look on one aspect of the labour market – part-time jobs – from the point of view of the CR as well as internationally.

Two sources of unemployment indicators are being used. One of them is the Ministry of Labour and Social Affairs (MLSA) based on labour offices registrations. Data are available since 1991[1]. The second source is the Labour Force Sample Survey (LFSS) conducted by the Czech Statistical Office (CZSO) since 1993. European Union project focused on how the labour market statistics and indicators reflect the reality compared the EU labour force survey data and register data. It came to the conclusion that these two sources are complementary rather than mutually exclusive [5].

- ***Employment and unemployment in numbers***

The number of unemployed persons has built up markedly. MLSA registered in 1991 (end of June) 139 351 unemployed persons and in 2004 by the end of the same month 489 744 persons. Based on the CZSO survey the number of unemployed has nearly doubled during the 1993 – 2004 period. Employment measured by the number of persons has been falling in the same time period on average by 0.3 % annually; the employment/population ratio as well as the participation rate have experienced continuous downward trend. Internationally there were 37 million of unemployed persons in the OECD countries in 2004, i.e. 6.7 % of the labour force.

- ***Unemployment and strategic documents in the CR***

The Czech Republic Strategy for Sustainable Development, as the top strategic document, deals with the question of employment to some degree in all its parts. As a main risk and opportunity at the same time it identifies the persisting inadequate labour market flexibility and labour force mobility and qualification. In this respect the structure of labour market supply and demand is not harmonized. High participation rate of the population can be considered the strength in spite of its long-term decreasing tendency. Among weaknesses are the mounting long-term unemployment, regional differences and a low motivation to activity and new job creation. These questions are currently being addressed.

Economic pillar is the main subject of another document, the Czech Republic Strategy for Economic Growth, which includes high employment in its main vision.

Both documents highlight the effort to simplify conditions for self-employment and thus the support of local economic development; research and development and support for production and services with high value added.

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[1] Starting July 2004, the MLSA publishes the registered unemployment rate (RUR) according to a new methodology harmonized with the calculations in EU member states (ILO guidelines used in Eurostat). This paper works with the RUR based on the original methodology due to the length of the time series.

## Long-Term Development in the CR

- *Labour market and equilibrium*

Labour market can experience equilibrium given various levels of unemployment. There is no one true equilibrium, but it can be said, that we can choose. If we imagine the economic system more like a living organism than a machine, the concept of equilibrium remains, but the balance of a living organism is more delicate and complex and less predictable, since the organism keeps evolving, adapting, learning and it can respond to similar events each time in a different manner. Thus a policy successfully employed in one country or region may have no effect somewhere else.

- *Economic performance and (un)employment*

Ormerod [4] defined key characteristics of unemployment observed in the real world on empirical data. The connection between economic performance and employment or rate of unemployment is not cut-and-dried and widely differs across individual industrial countries. In the long-term it is rather indeterminate. In any case the positive effects of faster growth on the employment growth are only temporary and do not necessarily hold in the long-term. Benefits of the faster growth can only be felt by those already employed without the creation of new jobs.

Graph 1   Comparing the Development of GDP and Employment Levels

Source: CZSO
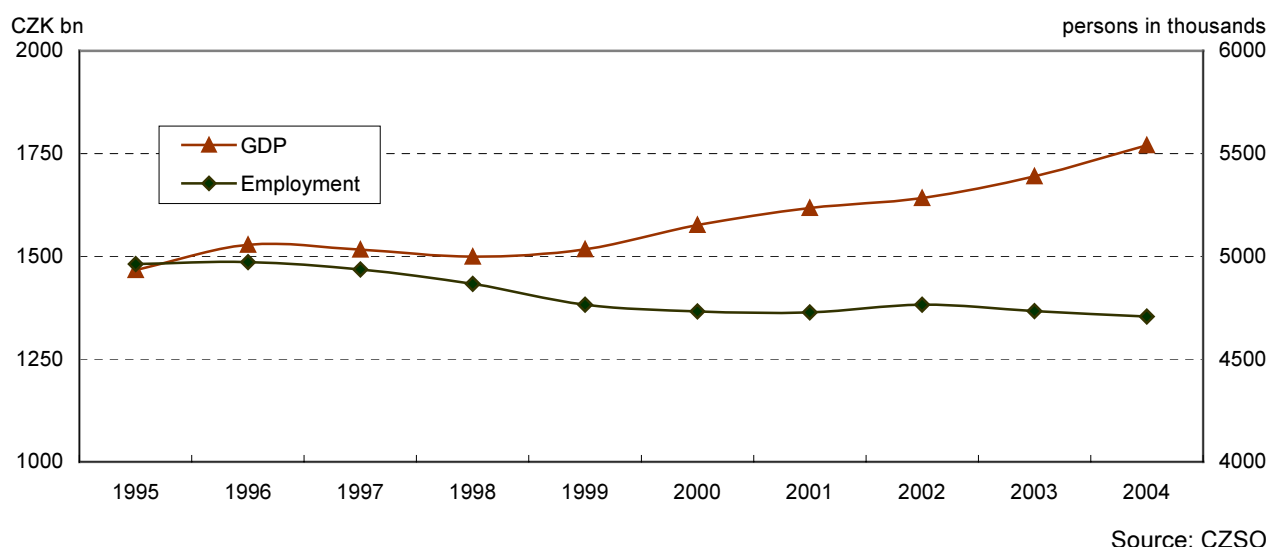
Data for the levels of GDP in constant prices and employment in the Czech republic for the 1995-2003 period show relatively high negative correlation, i.e. with the growth of GDP the employment falls. However, it is likely that the nature of this relationship will eventually change and this situation is only temporary.

Graph 2   Development of the Rate of Growth of GDP and the Unemployment Rate

Source: CZSO, MLSA

The rate of unemployment and the GDP growth rate do not exhibit a clear connection, if any then weak positive – with the growth of GDP the percentage of unemployed is also growing.

Last six years of constant growth, but increasing unemployment and falling employment is explained by progressing restructuring and rationalization. It is also important to keep in mind, that the graphs depict too a short period for more general conclusions.

• *Unemployment rate in the scatter plot*

Ormerod [4] further presents the unemployment rate in the scatter plot, where every point depicts the unemployment rate in the relevant year against the unemployment rate in the previous year. Resulting points are then connected.

Such graphical representation of the unemployment rate can first of all reveal whether the time series moves in approximately regular cycles or whether it moves in cycles at all. Straight line would for example suggest that the data kept constantly growing in time and on the contrary, data showing perfectly regular cycles would in connected scatter plot emerge as a perfect ellipse. In case the time series more or less regularly fluctuates, this diagram enables the identification of an average value around which the time series fluctuates, which is a point in the centre of an ellipse portrayed in this diagram. This point is called the system attractor point, since it is some kind of a centre to which the data seem attracted.[2] Unemployment revolves around but never reaches this point. This contradicts the concept of labour market equilibrium, which is a static point, at which everybody willing to work for a given wage works.

This diagram further outlines the size of the cycle around attractor, i.e. the volatility of the time series. And finally, the strength or resistance of the attractor is also important, signalling the tendency of the data to return back to cycles around the attractor even from relatively distant points. Weak attractor easily loses its grip and certain disruption of the system shifts the data completely out of control of this attractor.

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[2] Attractors have rather strict definition in mathematics and their exact calculation requires advanced mathematical techniques. There are more types of attractors – e.g. point, periodic or strange attractors. This concept is used for instance in physics and biology as well as finance, with longer and more reliable time series available. This concept is here borrowed as a simplified tool.

- ***Cycles and stability***

In other words, relatively stable and balanced system will dampen larger fluctuations and keeps moving in unique cycles. If we want to shift the system on a new path around a balanced state, which is more desirable for us (lower unemployment level), it is necessary to destabilize it first to some extent or push it out of track. Cyclical nature of behaviour remains - result leaning towards the innate nature of cyclical renewal in natural systems rather than towards permanent linear growth. Systems near to the balanced state can be easily described by linear relationships; for complex systems in or near an imbalanced state, non-linear description is more appropriate. Transition of the system from one balanced state to another can take various forms [2].

This approach is subsequently applied to the data for the Czech economy.

Graph 3   Unemployment in the CR 1993 – 2004, connected scatter diagram of CZSO data
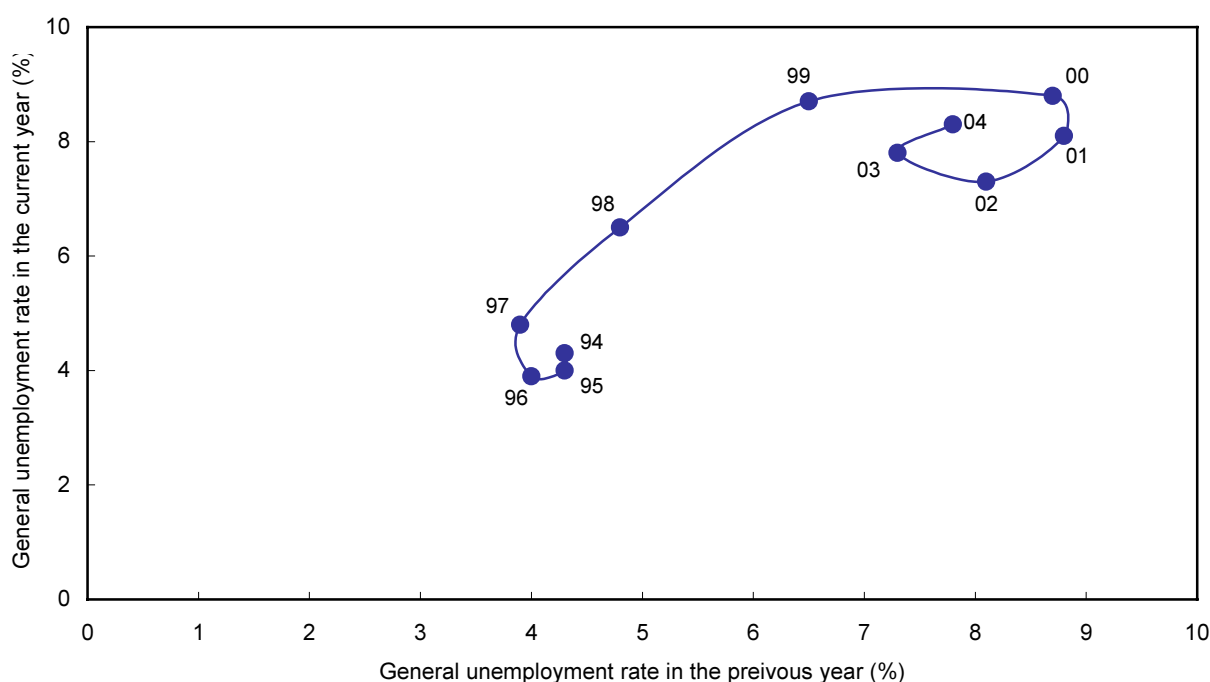
Source: CZSO

Note: years in the graph refer to current years.

- ***Change in the system behaviour***

Data for unemployment in the Czech republic in the 1991-2004 period for both sources of measuring the proportion of unemployment reveal that the system shifted from one attractor to another. The rate of unemployment (MLSA) cycled in the course of 1991-1996 period, i.e. for five years, around an attractor of approximately 3 % (3 years and 4 % for the LFSS data). Beginning 1997, the system moved away from the existing attractor point and has not returned to that pattern of behaviour any more. Partially in 1999, but more in 2000, the system settles around a new rate of unemployment attractor point at around 9 % (8 % for LFSS data)[3], though only further development will confirm this.

Movement from one attractor to another coincided with the recessionary phase of the business cycle. The system experienced shock of fundamental origin – financial crisis connected primarily to the external imbalance, which exposed the fact that the Czech economy has not yet registered sufficient structural changes. This corresponds to the consequent shift in the unemployment situation. Since then, the growth has been

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[3] New level of unemployment rate tripled for the MLSA data and doubled for the CZSO data, but it is important to keep in mind, that the CZSO data cover shorter time period compared to MLSA data.

more driven by productivity. It can be expected, that when the structural changes will have been completed in sufficient extent, the unemployment can again return to a low but qualitatively different level.

To put it differently, Czech economy as a large open system was due to inner as well as outer fluctuations thrown out of its old balance. Development (evolution) was also described as long periods of balance and stable cyclical behaviour, which is reasonably predictable, interrupted by short intense periods or 'crises', which push the system on a qualitatively new level, where it has not been before. Impossibility to reach one true equilibrium and a capacity to shift to a qualitatively new state are among other characteristics of all natural systems [2].

Graph 4   Unemployment in the CR 1991 – 2004, connected scatter diagram of MLSA data
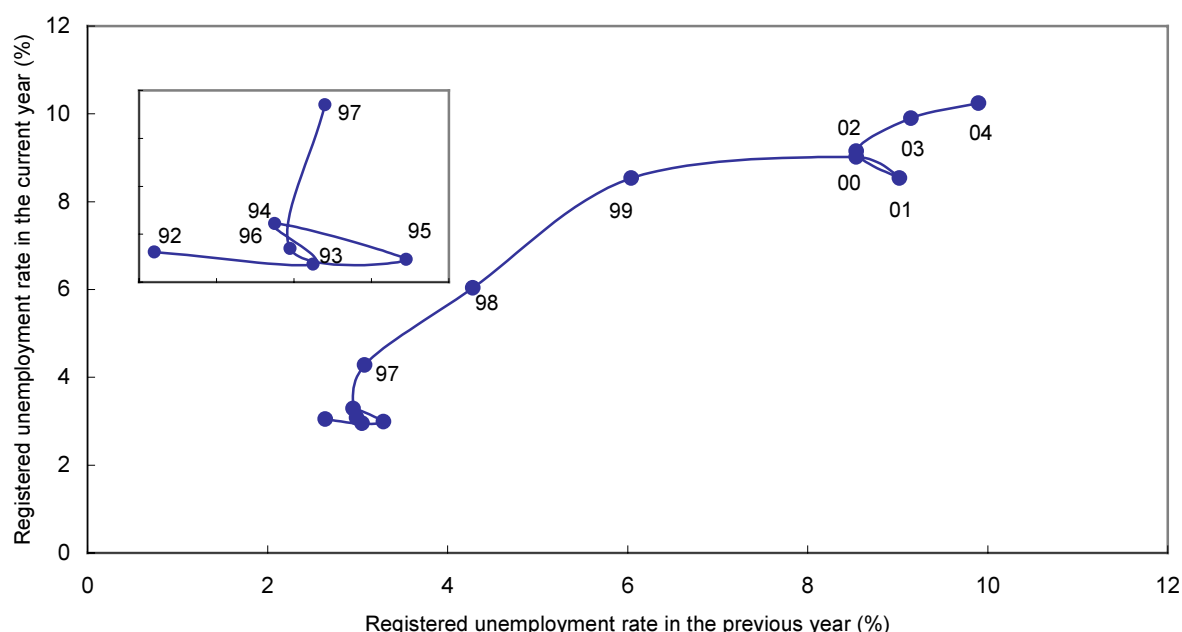
Source: MLSA

In a classical depiction the unemployment rate also fluctuates around one level and subsequently moves to a new level. There has not been enough cycles to evaluate volatility of the time series, but it is somewhat more volatile around the second attractor:

**Graph 5   Unemployment Rate Development in the CR**
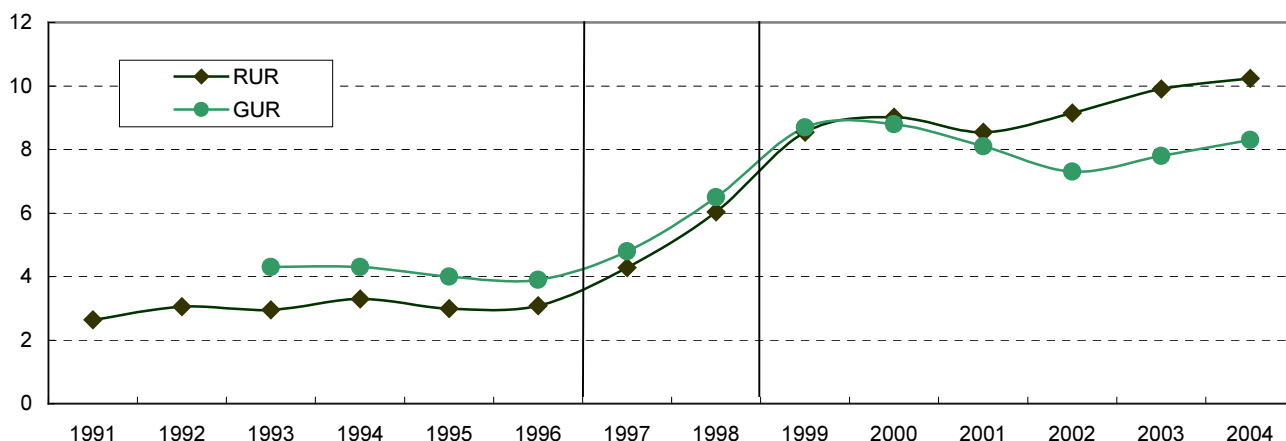
- ***GDP on one path***

Unlike unemployment, it seems that the GDP growth rate during this period trod a path around one attractor, specifically at the level of near 2 % of annual growth. The GDP time series behaved cyclically for the whole period and its volatility has been gradually falling.

Graph 6   Scatter Diagram of the GDP Growth Rate 1991 – 2003 (1996-2004)
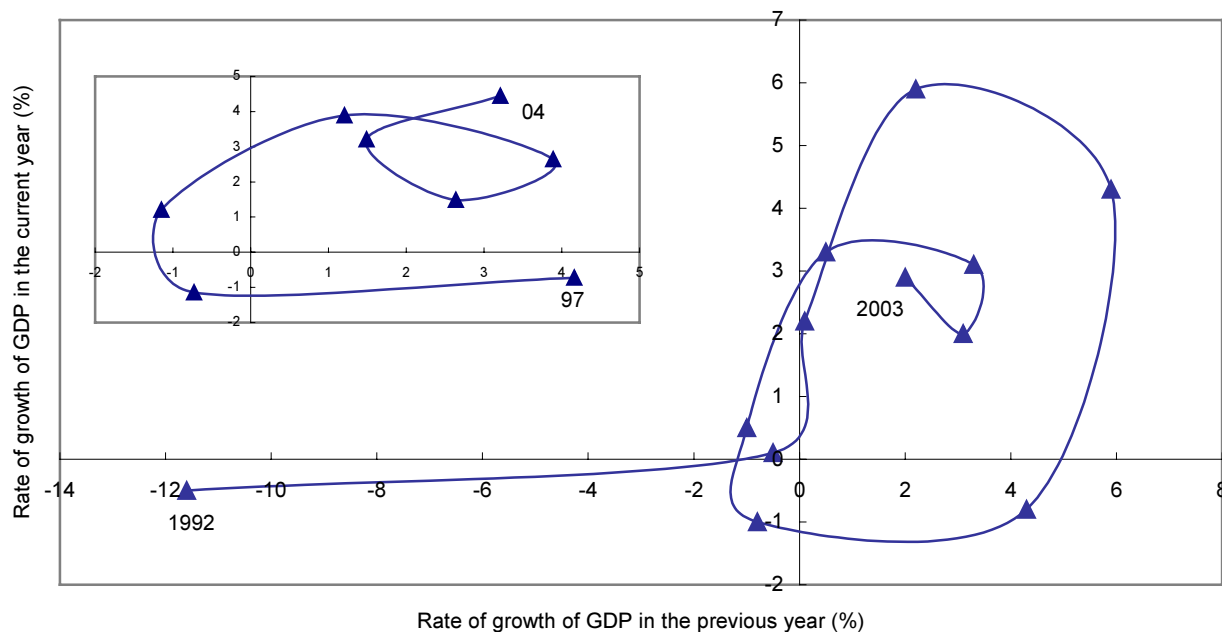
Note: graph employs the GDP data before revision because of the time series length; as an illustration GDP data after revision are added in the smaller graph in the left top corner.

Part-time Jobs in the CR[4]

- *Part-time jobs in numbers*

Apart from full-time jobs, Czech Labour Code defines three types of shortened working time period, specifically agreed working time period (§ 86), shortened working time period for health reasons without cut in the wage (§ 83) and working time period negotiated in the collective agreement (§ 20). LFSS divides jobs into full-time and part-time and both can be either for an indefinite or a determinate period.

Proportion of employees working part-time was in the 1993 – 2004 period continually declining. This proportion and the rate of unemployment show for the given period comparatively strong negative relationship (correlation coefficient –0.85). In 2004, there were 73.7 % of women and 26.3 % of men among part-time employees.

Graph 7   Employees Working Part-time* and the General Unemployment Rate
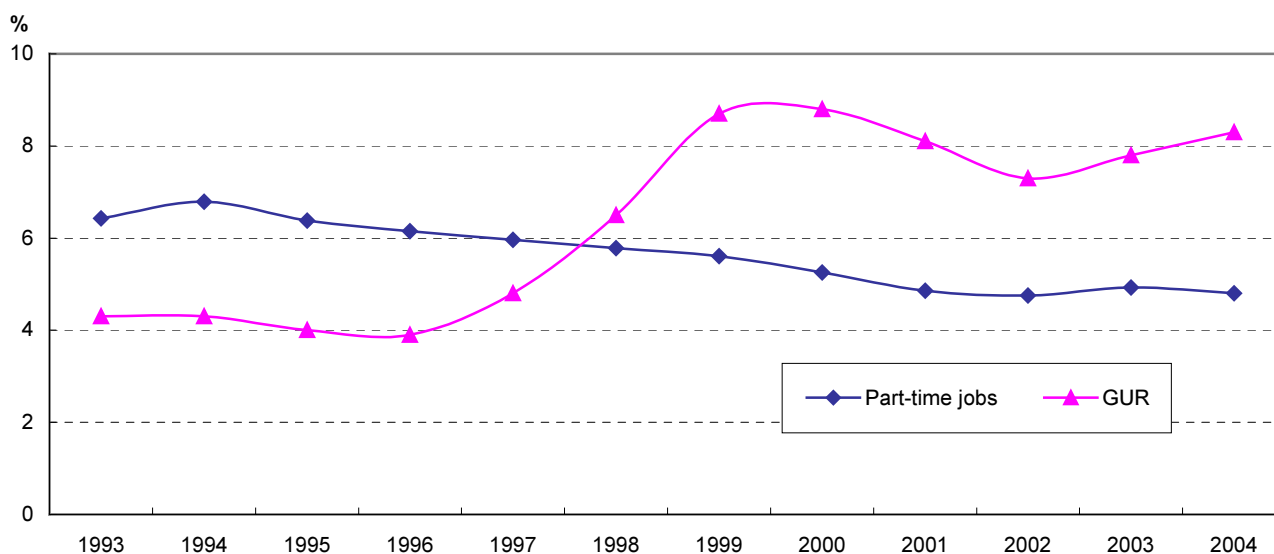
Source: CZSO

* Share of employees working part-time out of the total number of employees, both for an indefinite and determinate period.

- *Reasons for working part-time*

These forms of employment generally suit the most to parents with small children and students, to a lesser extent to retired persons. Reasons for working part-time are in the Czech Republic as follows[5]:

- Attendance at professional or school training – 5 %; males 10.6 %, females 3.2 %
- Health grounds – 19.4 %; females 16.3 %, males 28.8 %
- Not being able to find appropriate full-time job – 15.1 %; males 6.6 %, females 17.8 %
- Taking care of children or handicapped person – 16.7 %; females 22.2 %, males 0 %.

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[4] This study does not suggest, that the issue of job working time period is the most important factor affecting the unemployment in the CR. It is an area of interest this study focuses on. Similarly, the derived conclusions are not the final solution for the unemployment situation in the CR.
[5] Source: CZSO – LFSS, Quarter 1, 2005

- ***Underemploym ent***

Underemployment is generally defined as involuntary part-time work and locally it has been monitored since 2001. It ranged from 27.5 to 13.7 % of the total number of persons working part-time within the last four years. The number of economically inactive persons, expressing a wish to work arrived at 98.9 thousand of persons aged 15 – 24 – mostly students and apprentices and 52.9 thousand of persons on parental leave aged 25 – 34, which represents large potential of labour force. Mere 1.4 % of students and apprentices works[6]. Average share of females among the underemployed persons during this period amounted to 78 % with the data showing signs of balancing up of this ratio.

Graph 8   Underemployment*
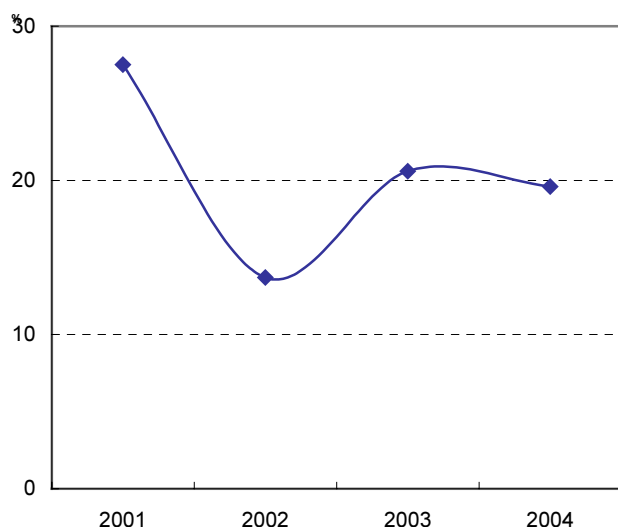
Graph 9   Underemployment Based on Sex
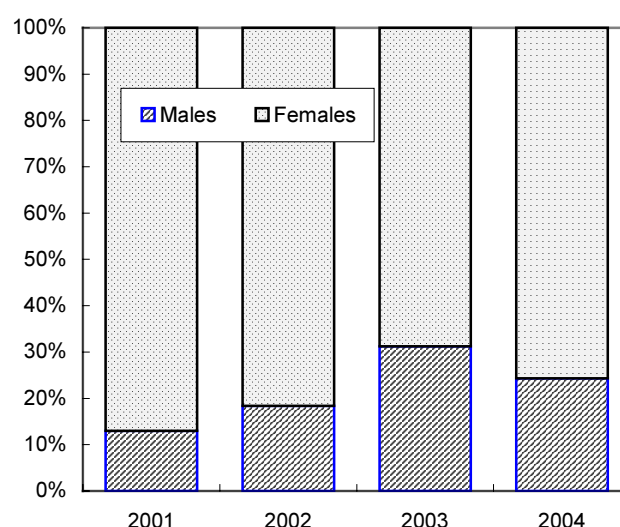
* Share of underemployed in all employed part-time.

Internationally the underemployment ranks among frequent problems; here the situation is quite the opposite. There is very few underemployed in the Czech Republic mainly for that reason, that there is very few part-time jobs. Surveys imply, that people would welcome part-time jobs and on the contrary, work full-time for the lack of part-time job opportunities. Only 16 % of persons works part-time for the reason of not being able to find a full-time job, the rest does so voluntarily. On the contrary – there is a large reserve of those wishing to work part-time. Absolute numbers of employees working part-time and underemployed persons follow, to illustrate their negligible levels[7].

Table 1

persons in thousands

	2001	2002	2003	2004
Employees - total	3 969.8	3 966.4	3 893.7	3 890.2
Employees working part-time	192.9	188.4	191.8	186.8
Underemployed	62.4	31.6	48	45.2

Source: CZSO

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[6] Source: CZSO – LFSS, quarter 1, 2005.
[7] The study abstracts from the development of the quantity of second jobs as well as the development of employment of foreigners.

Foreign Model

- **The term 'casual' job**

Jobs can also be divided into temporary and permanent. The essence of temporary (casual) job is, that the employee has no guaranteed right to a lasting employment, has certainty neither of days, shifts or number of hours and is paid exactly for the time worked. There is no minimum or maximum limit of hours worked (employee can be eligible for 30 min break after every 5 hours worked; if another shift follows, the employer can either pay him for this break or not). There are no sick benefits, paid leave and paid public holidays and no parental leave. His hourly wage rate is higher (usually by 15-25 %) compared to an employee on the same position working part or full-time, compensating him for these uncertainties. This extra also serves as a deterrent to employers from employing people on this basis in cases when they should in fact create a permanent position. When the income reaches certain amount, the employer contributes to superannuation. Both parties can at any point terminate the employment without giving an official notice, without compensation and even without stating a reason (this does not need to be valid if the employee holds the position for a longer time period). The employee is not obliged to accept further work and the employer does not have to offer further work – verbal contract plays an important role. This form suits mostly students, who can obtain work experience and references while studying. However, if the given job is not relevant for the studied field (which often it is not), this experience will be less useful and the main motive is then the extra income.

- **Advantages and disadvantages for employees**

- Great flexibility and related uncertainty.
- In cooperation with the employer it is theoretically possible to regulate the number of hours worked – i.e. not to work at all for the whole week and remain employed or work seven days a week morning to evening. However, to refuse a shift can be sometimes risky for the future.
- Easy job termination.
- Uncertainty about the time spent at work – the employee can receive an offer to come to work anytime or his shifts can be cancelled or he can be sent home early for the lack of work.
- Uncertainty around the extent of future income (can present an obstacle when asking for a loan).
- This uncertainty can bring certain frustration in the long-term; this form of employment is meant for short and temporary time periods. Although, in practise, it can often last quite long, in many cases years.

- **Advantages and disadvantages for employers**

- Especially suitable for market segments experiencing large fluctuations in demand – employer can adjust the number of employees according to the level of actual demand and achieve high cost effectiveness.
- Employer has employees „on call".
- Easy dismissal of employees, but on the other hand employees can easily leave or more employees can be unavailable at the same time; the most common practise is an effort to have slight surplus of employees.

- **The term 'part-time job'**

While among key elements of casual employment are its informality, uncertainty and irregularity, part-time work (and full-time work) is carried out in prearranged regular days and hours. Basic features are lower hourly wage rate with regards to casual employee, guaranteed number of hours, right to paid sickness leave, holiday leave etc. This form has more in common with full-time job characteristics. Lower hourly wage rate can be a disadvantage in situations when the employee works similar number of hours as 'casual' co-workers.

- **Further nuances**

For both forms of employment are also significant the conditions of the particular contract and bargaining power of both sides, characteristics of a specific firm and performed work. There can also exist certain tension among employees of one firm on different types of employment if they are not satisfied with their own type. For both forms weekends, public holidays and night shifts are paid more. Either of them can

lead to a full-time position, which generally enjoys a higher status.

They are practised for instance in hospitality, security services, at Universities, in retail, tutoring, telemarketing, administration, child care, gardening, cleaning services etc.

- *Inspiration*   These forms are more part of the Anglo-Saxon labour market model; European model puts greater emphasis on the social and environmental aspects. The Czech Republic Strategy for Economic Growth aims to draw inspiration from both of these approaches and adopt the best of them [6].

International Comparison (OECD)

The share of part-time jobs in total employment in the CR[8] is in comparison to OECD countries and EU countries very low.

Table 2   Share of Part-time Jobs and the Unemployment Rate in Selected Countries

Year 2003

Country	AT	CZ	FR	JP	HU	DE	NL	PL	SK	GB	US	EU-15
Share of part-time jobs	27.9	3.2	12.9	26.0	3.5	19.6	34.5	11.5	2.3	23.3	13.2	16.6
Unemployment rate	6.1	7.8	9.4	5.3	5.7	9.6	3.8	19.2	17.5	5.0	6.0	8.1

Source: OECD, Factbook 2005

- *Part-time-jobs and unemployment*   The relationship between the proportion of part-time jobs and the rate of unemployment across various industrial countries is not straightforward; other factors of a specific country play their part. Still, it is a negative relationship (correlation coefficient –0.47 for 26 OECD countries), i.e. in general higher share of part-time jobs signifies lower unemployment rate and the rise of part-time jobs is not to the detriment of creation of new full-time positions. This relation is even stronger in the CR. Thus it infers that more opportunities of part-time jobs of the right form would be in the CR desirable. All countries with a share of part-time jobs exceeding 20 % of all employed (7 OECD countries) have relatively low unemployment rate; average for these countries comes to 4.8 %.

Voluntariness and Satisfaction

Important is the question of voluntariness and satisfaction. In countries with few opportunities of flexible job arrangements this would be welcomed by many people and on the contrary, in countries with high share of part-time jobs the unemployment can be to a certain extent undervalued. In this respect the results of extensive OECD survey states, that most people work part-time from their own choice [3].

- *Job quality*   Eurostat publication with a more narrow focus on Central European countries[9] suggests, that attention should be paid not only to the quantity of jobs but also to their quality. Job quality[10] is not directly monitored in the labour force surveys. Based on the results of this study, it seems to be lower in countries with a large share of employment in the agricultural sector.

  For indirect assessment of low job quality were used indicators of voluntary and involuntary part-time jobs and the share of self-employed without employees or helping family members. The findings suggest that most part-time positions are in these countries held not voluntarily[11], keeping in mind the inadequate availability of

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[8] These shares come from labour market surveys according to the ILO guidelines. It is the percentage of employed persons working less than 30 hours per week and includes both employees and self-employed persons. OECD used our data for part-time jobs for an indefinite period.

[9] Bulgaria, CR, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia

[10] The concept of quality is subjective to a large extent – here it is defined as a job providing certain quality of life and sufficient resources.

[11] Survey conducted only in Estonia, Latvia, Lithuania and Slovenia.

data. With regards to the second indicator, in countries with a high share of these employees again most of them worked in the agricultural sector. These indicators come out very well for the CR [1].

Conclusion

The level of the unemployment rate revolved for certain number of years around one level (RUR - 5 years and 3 %; GUR - 3 years and 4 %) and since 1999 to 2000 revolves around a higher level (RUR 9 %; GUR 8 %). This implies that a decrease or increase in the range of several percentage points within a reach of this centre (attractor) around which the unemployment moves, does not necessarily signals any real change in the unemployment rate for better or worse. Question is what could catapult this point downwards to the lowest possible, more desirable level, in other words, how to change behaviour of the system so it does not create high unemployment.

This shift occurred simultaneously with the recessionary phase of the business cycle, financial crisis of fundamental origin, which exposed the lack of structural changes in the system and initiated them at the same time. This corresponds to the consequent shift in the unemployment situation. Since then, the growth has been more driven by productivity. It can be expected, that when the structural changes will have been completed in sufficient extent, the unemployment can again return to a low but qualitatively different level.

Creating more opportunities of part-time work relates to the requirement of greater labour market flexibility in the CR. Drawing inspiration from foreign experience, it is possible to create the right form for local conditions and needs. Data suggest, that it could contribute to the lowering of the unemployment rate.

In absolute terms, there are few underemployed persons in the CR, which is directly connected to the low number of part-time jobs. It seems, that the issue is not underemployment or job quality so much, but rather the lack of opportunities of part-time jobs. People working part-time in the CR are mostly women and most of underemployed are also women.

References

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