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The Hidden Labour Force in the United Kingdom

**– A contribution to the quantification of
underemployment in international comparisons –**

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The Hidden Labour Force in the United Kingdom

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1 Abstract

In discussions about the situation on the labour market, the unemployment figures tend to be at the centre of public interest. This is illustrated very clearly in Germany by the fact that the monthly figures for the number of unemployed registered with the employment offices and the unemployment rates give rise to numerous discussions and comments in the press and on the political stage. Although the number of employed persons is also documented in the official statistics alongside the number of unemployed, the former tends to play a subordinate role in the eyes of the general public. To gain an accurate idea of the labour market, however, it is not sufficient to restrict the research to these two statistics. In particular, the published unemployment figures do not fully reflect the extent of overall underemployment.

In order to quantify the existing underemployment over and above the officially published underemployment figures, the IAB calculates for Germany a figure which it calls the "Stille Reserve", "hidden unemployment" or "hidden labour force". The size of the hidden labour force in Germany is estimated by the IAB at around 2.6 million in 1998. Compared with yearly average for 1998 of nearly 4.3 million registered unemployed, the hidden labour force in Germany is by no means a negligible quantity.

It can be assumed that there is a hidden labour force in other countries, too. The OECD, for example, submits calculations which suggest that many countries have a far higher level of underemployment than is expressed by the official unemployment statistics. The consequence of this is that more than just the official unemployment figures should be used when evaluating the true labour market situation and when drawing up international comparisons. This paper sets out to make an empirical contribution to this.

First of all, it was decided to use the United Kingdom¹ (UK) for the study, a country which, because of the favourable development of its labour market over the last few years, could serve as a point of orientation for German employment policy. As the estimates will show, however, it would seem that there is also a high hidden labour force in the UK. Calculations for other countries of the European Union are, by the way, to follow later.

2 Conceptual considerations concerning the labour force

The following calculations are based on the activity rates from the Labour Force Survey (LFS)². For the statistical measurement of the activity rate, the labour force is related to the population. The statistics for the activity rates usually differentiate between age, sex and other characteristics. The labour force is made up of persons in gainful employment

¹ Great Britain and Northern Ireland

² The calculations made here are based on the data from the Labour Force Survey, which were kindly provided by the Statistical Office of the European Union (EUROSTAT). The unemployment figures in the Labour Force Survey largely correspond to the figures for persons 'out of work' (erwerbslos) in the German micro-census. It is not intended here to go into the fine differences between the various definitions of "unemployment", as they do not play any major role in this context.

plus the unemployed persons from the LFS. Unemployed persons according to the LFS are people who have no gainful employment whatsoever, but would be willing and able to take up an employment immediately (at least one hour/week), and are endeavouring to find a job. It is not necessary to be registered as unemployed at the employment office (cf. on the labour force survey: "Labour Force Survey": ILO 1992.)

The statistically measured activity rates are dependent on the overall economic situation on the labour market, i.e. they fluctuate with the general development of the labour market.³ In good times, the effective activity rate is higher than it is in bad times.⁴ These changes in the activity rate, which are caused by economic conditions, can be described and explained with the aid of the hidden labour force.

The hidden labour force includes, for example, people who are presently either not looking for work because there is at the moment a lack of (suitable) job vacancies (discouraged workers) or who have prematurely stopped working over the long term for reasons connected with the labour market (see box). The size of the hidden labour force depends on the situation on the labour market. Basically, the hidden labour force expands when there is a deterioration in the labour market, and declines when there is an improvement.⁵ To what extent somebody can be categorised as belonging to the hidden labour force will depend on whether that person decided to withdraw from the labour force because of the situation on the labour market (Brinkmann et al 1987, p. 389).

The hidden labour force can be seen as part of the labour supply. The IAB describes the sum of the people in employment, the unemployed and the members of the hidden labour force as the potential labour force. When the economy is booming, the number of employed persons increases, while the number of unemployed and the size of the hidden labour force declines. In a depressed economy, the opposite occurs. These fluctuations largely balance each other out, with the result that the potential labour force itself is largely unaffected by economic fluctuations. (The use of the term "economy" here does not refer to the general economic situation, but only to the situation on the labour market, which can differ – particularly time-wise – from the general economic situation).

In a booming economy, when the entire potential labour force has found employment, the level of unemployment and the hidden labour force are (virtually) zero. The potential labour force can therefore also be described as the labour supply under booming economic conditions.

³ The activity rate (or labour market participation rate) is also determined by the "other underlying conditions" of the labour market, in other words e.g. legal and institutional factors.

⁴ For a description in English of the IAB concepts of "potential labour force" and "hidden labour force", see Fuchs, 1995.

⁵ This applies only under *ceteris paribus* conditions. In particular, the population should not have changed, in terms either of the numbers or the composition.

Hidden labour force

- An important part of the hidden labour force is made up of discouraged workers, who, because of the poor situation on the labour market, do not appear as job-seekers because they believe they have no chance of finding employment.
- When the situation on the labour market is poor, some schoolchildren and students remain longer in the education system than in a good situation, adding to the hidden labour force. This may involve putting off taking the final exams (for example, to work for a better qualification), taking a second course of study, etc.
- A comparable situation in Germany would be taking part in further training courses financed by the employment offices (further training and retraining), because these people must be available to the labour market and, at the same time, are neither in employment nor unemployed.
- Women, who after the birth of a child, extend their family leave and thus dispense temporarily with a return to the labour market, are also part of the hidden labour force (as long as they are not registered as being on maternity leave in line with the labour force concept for people in employment).
- Many employees leave the labour market due to "early retirement". Even if this frequently happens voluntarily, and is even desired by the employee, most people would continue to work until they reach the normal retirement age if it were not for the early retirement arrangements. Even if the affected persons had withdrawn from the labour market for ever, and were only to work again in exceptional circumstances – if they were offered it – they would still be in work under conditions of a very healthy labour market. Also, if the position on the labour market were to improve or if there were no longer any arrangements for early retirement, the age groups coming up for retirement would again become available to the labour market. In individual cases, the status of "not in the labour force" can, in fact, be irreversible. Yet, under long-term aspects, the effect of early retirement – taking people out of the labour market – is very definitely reversible. Early retirement should therefore be regarded as the formation of a hidden labour force. Following the period of early retirement and with the commencement of normal retirement, the person ceases to be a member of the hidden labour force.⁶
- The case is similar when disabled workers are in reality no longer available to the labour market because of the poor situation on the labour market, and for this reason have taken early retirement.
- The labour supply/hidden labour force must also take into account the added workers. Added workers are persons who, due to the unemployment of a member of the household, only look for work in a poor economic environment but otherwise do not appear on the labour market. If, for example, one member of a multi-person household loses his or her job, another member of the family may be forced to seek work. Since the labour supply contains both people in employment and people seeking employment, it does not matter whether, instead of the previously employed member of the family, the other member of the household is now actually in gainful employment or is looking for work. In both cases, the statistically measured labour force increases by one person. This added worker effect should be deducted from the potential labour force or the hidden labour force because it would not come into effect in a situation of full employment.

⁶ It should be borne in mind that "normal" retirees may, of course, also be part of the hidden labour force. As Thon (1975, p. 42 f.) points out, their significance for the labour market under the aspect of working hours differs so strongly from the other age groups that 65-year olds and older should not be included in the hidden labour force.

3 Quantifying the potential and the hidden labour force in the UK

3.1 Regression equations for the activity rates

The starting point for determining the hidden labour force is an estimate of the potential labour force. This estimate is based on the definition of the potential labour force as the labour force under booming economic conditions.

The potential labour force can be split up into two components: population and activity rate. In the calculations presented here for the UK, a differentiation was made according to the demographic parameters of age, sex and family status.

$$(1) \quad \text{PLF}_t = \sum \sum \sum \hat{a}_{\text{gmx};t}^P * P_{\text{gmx};t}$$

potential labour force = potential activity rate * population

$\text{fgx};t$ is the way of denoting the difference according to sex g , family status m and age x , measured in each case at the time t . $g = \{\text{men, women}\}$; $m = \{\text{married, not married}\}$, but only for the women; $x = \{15-75 \text{ years old in 5-year age categories}\}$.

The population is known from the population statistics. All that then needs to be determined are the potential activity rates $\hat{a}_{\text{gmx};t}^P$. For estimating them, the effective, statistically measured activity rates (i.e. people in employment + unemployed, related to the population) are first explained with the aid of a regression analysis as a function of certain parameters. In this respect, the IAB approach for estimating and forecasting the labour force does not differ from later estimates of the labour force for Great Britain (cf. Ellison/Tinsley/Houston 1997; Armitage/Scott 1998).

For every sub-population, the regression model produces an equation in the form

$$(2) \quad \hat{a}_{\text{gmx};t} = b_0 + b_1 z_{1,t} + c i_t$$

$\hat{a}_{\text{gmx};t}$ is an estimate for the effective activity rate at time t . b_0 , b_1 and c are regression parameters. z is an explanatory variable (or even just the time as a regressor). For the sake of simplicity, only one regressor was put into the equation, although an equation can certainly contain several regressors. i is an indicator of the situation on the labour market.

To explain the fluctuations in the participation rate, different indicators of the labour market situation and socio-demographic variables were tested (see also Table 1). With all regression models, time was always also plotted as an explanatory variable. This captures long-term trend changes in the participation rate.

One notable feature is that, in every case, in every individual equation, an indicator for the labour market situation must be included as a regressor for conceptual reasons. The labour market indicator models the previously mentioned fluctuations in the effective activity rate due to the overall economic situation.

The labour market indicator is thus the key value in the IAB approach for estimating the hidden labour force and/or potential labour force. A deterioration in the labour market situation pushes down the effective activity rate and is accompanied by poorer values for the labour market indicator. The theoretically expected sign (+ or -) for the regres-

sion parameter of the labour market indicator is thus clearly fixed and can be used to check the regression model.

The following indicators for the labour market situation were used in the regression equations that were estimated for the UK (the expected sign (+ or -) is in brackets):

- Vacancies in relation to employed persons (+)
- Vacancies in relation to unemployed persons (+)
- Proportion of long-term unemployed persons (more than 12 months) of total unemployed (-)
- Proportion of long-term unemployed persons (more than 24 months) of total unemployed (-)
- Unemployment rate for women (-)
- Unemployment rate for men and women (-)

For selecting the variables that should finally be included in the regression model, consideration was made not only of statistical criteria but above all to their plausibility, because while the existence of the "correct" sign before the coefficient is absolutely vital with the indicators for the labour market situation, the coefficients with the other regressors can be interpreted differently. For example, it can be assumed that, as the birth-rate falls, the activity rate of women increases. The regression parameter would thus have to be negative, and this is actually the case in the equations.

The estimated equations are shown in the following Table 1. The estimation period covered the years 1983 to 1995. They are all linear equations, the parameters of which are additive. The equations have been estimated using ordinary least squares.

The regression equations shown in the table can explain a large number of the fluctuations in the activity rate observed in the past (as indicated by the coefficient of determination R^2).

The regression results for the 36 – 40 and 41 – 45-year old men had to be corrected in some instances because the resultant potential activity rates would have been too close to the 100% level or even slightly above it. The figure of 99.5% was given as the upper limit for the potential activity rate.⁷

3.2 Setting the booming economy data for the indicators for the labour market situation

For the transition from estimated effective activity rates to potential activity rates, there is one step still missing. This is based on the consideration of how – seen from a regression point of view and under identical conditions – a full employment situation (booming economy) differs from a poor labour market situation, and how this is expressed in the equations. In the case of full employment, the indicator for the labour market situation

⁷ In the categories and years affected by this restriction, it was necessary, because of the additive composition of the potential activity rates consisting of the labour force activity rate and the hidden labour force rate, to also adjust the hidden labour force rates.

Table 1: Activity rate equations

Men

Age	Regression model (linear regression, OLS method, estimation period 1983-1995)	R ²	F-statistic	VIF	DW statistic
15-20*	-0.711866+0.021347*Fert_rate-0.008*t+0.008397*Vac_unempl	0.93	20.07	1.08	1.69
21-25	0.585329+0.005346*Fert_rate-0.003919*t+0.003048*Vac_unempl	0.93	19.61	1.08	2.45
26-30	0.707398+0.004034*Fert_rate-0.001609*t+0.001495*Vac_unempl	0.85	7.96	1.08	1.83
31-35	0.995054-0.002260*t-0.000474775*LTU_12M	0.92	28.12	1.27	1.46
36-40	1.004178-0.002575*t-0.000669138*LTU_12M	0.90	21.07	1.27	1.53
41-45	1.008858-0.002575*t-0.000941756*LTU_12M	0.88	17.79	1.27	1.83
46-50	0.984825-0.002740*t-0.000800929*LTU_12M	0.95	45.62	1.27	2.22
51-55	0.934851-0.005082*t-0.00038851*LTU_12M	0.96	65.79	1.27	2.28
56-60	0.870174-0.007977*t-0.001960*LTU_24M	0.94	35.16	1.35	1.38
61-65	0.533990-0.005810*t-0.001728*LTU_24M	0.85	13.48	1.35	1.04
66+	0.115886-0.001530*t-0.003549*UNEMP_W	0.75	6.40	2.99	2.43

married women

Age	Regression model (linear regression, OLS method, estimation period 1983-1995)	R ²	F-statistic	VIF	DW statistic
15-20*	0.402078+0.204041*Dummy1-0.013748*t+0.201320*Vac_active	0.93	19.13	1.51	1.75
21-25	1.079542-0.005898*Fert_M_W+0.011861*t-0.002480*LTU_24M	0.97	46.03	1.38	2.31
26-30	0.663078-0.002206*Fert_M_W+0.017363*t+0.002523*Vac_unempl	0.99	118.40	1.45	1.67
31-35	0.621997+0.011334*t-0.004908*UNEMP_W	0.94	36.20	2.99	0.36
36-40	0.719594+0.007331*t-0.000950870*LTU_12M	0.93	31.32	1.27	1.52
41-45	0.752905+0.007921*t-0.000990277*LTU_12M	0.98	150.69	1.27	0.98
46-50	0.429869+0.006971*Part_W+0.005797*t-0.001243*LTU_24M	0.98	73.62	1.71	2.22
51-55	0.728747-0.089414*Dummy2+0.005114*t-0.002240*Tot_unempl	0.96	34.54	1.40	2.75
56-60	0.460455+0.005144*t-0.000932524*LTU_24M	0.97	93.60	1.35	2.62
61-65	0.169510+0.003617*t-0.000600477*LTU_24M	0.78	7.55	1.35	0.95
66+	0.040515+0.000581713*t-0.000383092*LTU_24M	0.82	10.27	1.35	1.97

unmarried women

Age	Regression model (linear regression, OLS method, estimation period 1983-1995)	R ²	F-statistic	VIF	DW statistic
15-20*	0.532593-0.005661*t+0.010980*Vac_unempl	0.73	5.86	1.00	0.77
21-25	0.820180-0.008974*t+0.005042*Vac_unempl	0.94	41.40	1.00	1.09
26-30	0.748286-0.003878*t+0.070499*Vac_active	0.91	22.81	1.11	2.17
31-35	0.874205-0.006436*t-0.002324*LTU_12M	0.80	9.19	1.27	2.21
36-40	0.872962-0.004041*t-0.002300*LTU_12M	0.69	4.42	1.27	2.28
41-45	0.810422+0.002445*t-0.001409*LTU_12M	0.78	7.53	1.27	2.13
46-50	0.723746+0.001440*t+0.029435*Vac_active	0.76	7.00	1.11	2.06
51-55	0.624062+0.002282*t+0.039527*Vac_active	0.55	2.22	1.11	1.92
56-60	0.391458+0.005747*t+0.050922*Vac_active	0.83	10.82	1.11	1.70
61-65	0.214510+0.002139*t-0.002188*LTU_24M	0.79	8.30	1.35	1.79
66+	0.035876-0.000479759*t-0.001015*UNEMP_W	0.51	1.72	2.99	2.24

R^2 : coefficient of determination
 VIF (Variance Inflation Factor): multicollinearity measure; $= 1/(1-r^2)$, where r is the correlation between the labour market indicator and the other regressors.
 D-W statistics: Durbin-Watson statistics
 t: time (1982:=0)
 Fert_rate: Births per 1000 women aged 15 to 44
 Fert_M_W: Number of legitimate births per 1000 married women aged 15 to 44
 Part_acti: Part-time workers to total labour force in %
 Part_W: Part-time working women to total of active women in %
 Dummy1: 0 until 1988, 1 thereafter
 Dummy2: 0 until 1983, 1 thereafter
 Vac_unempl: Ratio of vacancies to unemployed persons x 100
 Vac_active: Ratio of vacancies to employed persons x 100
 LTU_12M: Ratio of long-term unemployed (>12 months) to all unemployed in %
 LTU_24M: Ratio of long-term unemployed (>24 months) to all unemployed in %
 Tot_unempl: Unemployment rate (men and women) in %
 UNEMP_MEN: Unemployment rate of men in %
 UNEMP_W: Unemployment rate of women in %
 * Age categories were determined by the data available.

would become a value which could be described as the "full employment value". To give an example, if the regression model contains the unemployment rate, then the full employment value would be an extremely low unemployment rate.

Assuming that i^* is the full employment value of the explanatory variable i in a booming labour market. According to the definition of the potential labour force, the booming economy value i^* of the labour market indicator is inserted in equation (2) to estimate the potential activity rate $\hat{a}_{gm;x;t}^P$, and thereby, to a certain extent, a full employment situation is simulated.

If, in equation (2), we replace the effective value i_t by the booming economy value i^* , the potential activity rate is

$$(3) \quad \hat{a}_{gm;x;t}^P = b_0 + b_1 z_{1;t} + c i^*$$

Thus, to move on from the estimated functions for the activity rates to a calculation of hidden labour force rates/potential activity rates, it is necessary to set booming economy values for the indicators for the labour market situation used in the regression models. The definition of full employment is not so simple that full employment figures for the labour market indicators can be fixed using a mechanical procedure. This applies even more when we look at aspects of labour market development in other countries from the German point of view. However, it might be possible to develop a concept for the years in which there was full employment.

The use of time periods of maximal length is thus an important indication of the quantitative determination of the booming economy value to be inserted in the regression equations, because then it is possible to fall back on values for the relevant indicators observed in times of high employment.

Six different labour market indicators are used in the regression equations for the UK. For these, the booming economy values are fixed as follows:

- The unemployment rate and female unemployment rate, were at their minimum in 1966. The ratio of job vacancies to employed persons is also at its maximum in that year. The values observed for this year were therefore fixed as the figures for high employment (unemployment rate: 1.1%; female unemployment rate: 0.7%; vacancies to employed persons: 1.7%).⁸
- No long-term time series were available for the indicators of long-term unemployment. To simulate a booming economy on the labour market, both indicators were set at zero, because in times of full employment, the unemployment is likely to have predominantly frictional and seasonal causes, with the result that there should be hardly any long-term unemployed persons.⁹
- For the labour market indicator of "vacancies in relation to unemployed", the figures observed in the sixties cannot be applied to later periods. As from around 1972, this indicator is at a completely different level than it was in the previous years. To quantify a booming economy figure according to the present-day behaviour patterns, use was therefore made of the estimates for age categories for which two alternative and approximately equal regression equations could be estimated, of which one contains the ratio of vacancies to unemployed and the other, an indicator for the labour market situation with a known booming economy figure. With these alternative regression models, it was then possible to determine a value for the vacancies-to-unemployed indicator, which simulates a comparable situation of a booming economy on the labour market, as happens through the known booming economy figure in the other labour market indicator in the second regression equation. A ratio of 1:4 for vacancies to unemployed was best suited to simulating a comparable situation on the labour market, as was possible through the other indicators for the labour market situation with their respective booming economy figures.

3.3 *The hidden labour force rates and the potential activity rates*

The hidden labour force can be derived directly from equations (2) and (3), because the hidden labour force rate $r_{\text{gmx};t}$, differentiated according to sub-populations, is the difference between the estimated effective activity rate and the potential activity rate.

$$(4) \quad r_{\text{gmx};t} = \hat{a}_{\text{gmx};t}^{\text{P}} - \hat{a}_{\text{gmx};t}$$

With the aid of (2) and (3), equation (4) can be shortened. This gives a particularly simple depiction of the hidden labour force rate. It can be seen in equation (5) that the hidden labour force rate is mathematically equal to the difference between the actual labour

⁸ Where there are indications that an earlier booming economy value is nowadays no (longer) valid, the hidden labour force can be easily recalculated using the "better" figure. All that needs to be done is to replace the old figure contained in the following equation (5) by the new figure.

⁹ The figure zero is probably too low. This tends to lead to the hidden labour force being too high. However, there are no empirical indications of a booming economy figure that deviates from zero.

market indicator and its booming economy value, weighted with the regression parameter c .

$$(5) \quad r_{\text{gmx};t} = c (i^* - i_t)$$

If the population is known, the total hidden labour force can be easily calculated from the hidden labour force r by multiplication and addition across all sub-populations (age, sex and family status).

The hidden labour force is thus governed by the indicator for the labour market situation contained in the regression model. Additional regressors are included in order to be able to determine as accurately as possible their influence separate from other influences. Because the full employment value in the labour market indicator is used in the regression equation independently of the other regressors, it is important to ensure, for statistical-methodical reasons, that the labour market indicator does not correlate with these at all or, if so, only very slightly. In the case of the estimated regression equations, no significant intercorrelation was found between the labour market indicator and the other parameters.¹⁰

In interpreting the results, it should be borne in mind that the subgroups for which the rates were estimated, are in some cases very small indeed. Over-differentiation of the estimates is therefore only possible with reservations. The calculated values should therefore, wherever possible, be seen within the overall context.¹¹

For 1995, the estimates for the age-specific hidden labour force rates and the potential activity rates will now be briefly discussed with the aid of the following three diagrams. (For the sake of clarity, the activity rates from the labour force survey were also included in the diagrams.)

For the younger men and women, the estimates produce hidden labour force rates of more than 10%. This is probably attributable to people remaining in the educational system due to the poor situation on the labour market.

With the unmarried women, relatively high hidden labour force rates were found, also for the age group between 30 and 40. This deviates slightly from the pattern found for western Germany (cf. Thon/Bach 1998, Fig. 2 in the Appendix). First and foremost, we must consider the influence of the labour market indicator. A poor choice or a wrong determination of the booming economy figure plays a vital role at this point. On the other hand, it is of course uncertain to what extent the patterns are comparable in view of the different social structures. Although the principle of estimation is very simple, the hidden la

¹⁰ As test statistics the tables with the estimated equations contain the variance inflation factor (VIF). VIF is defined as $VIF = 1 / (1-R^2)$, where R is the multiple correlation coefficient between the labour market indicator and the other regressors. The closer VIF is to the value 1, the lower the intercorrelation. The maximum empirically occurring VIF in the estimated equations remains below the figure 3.0. This corresponds to a correlation R of 0.66. The relevant equation should therefore be used with a certain amount of care. All the other values of VIF are below 2.0.

¹¹ The detailed estimates and projections up to the year 2010 are available on request.

Figure 1

**Potential activity rates, activity rates and hidden labour force rates
in the United Kingdom, 1995**

in % of the population
of the same age

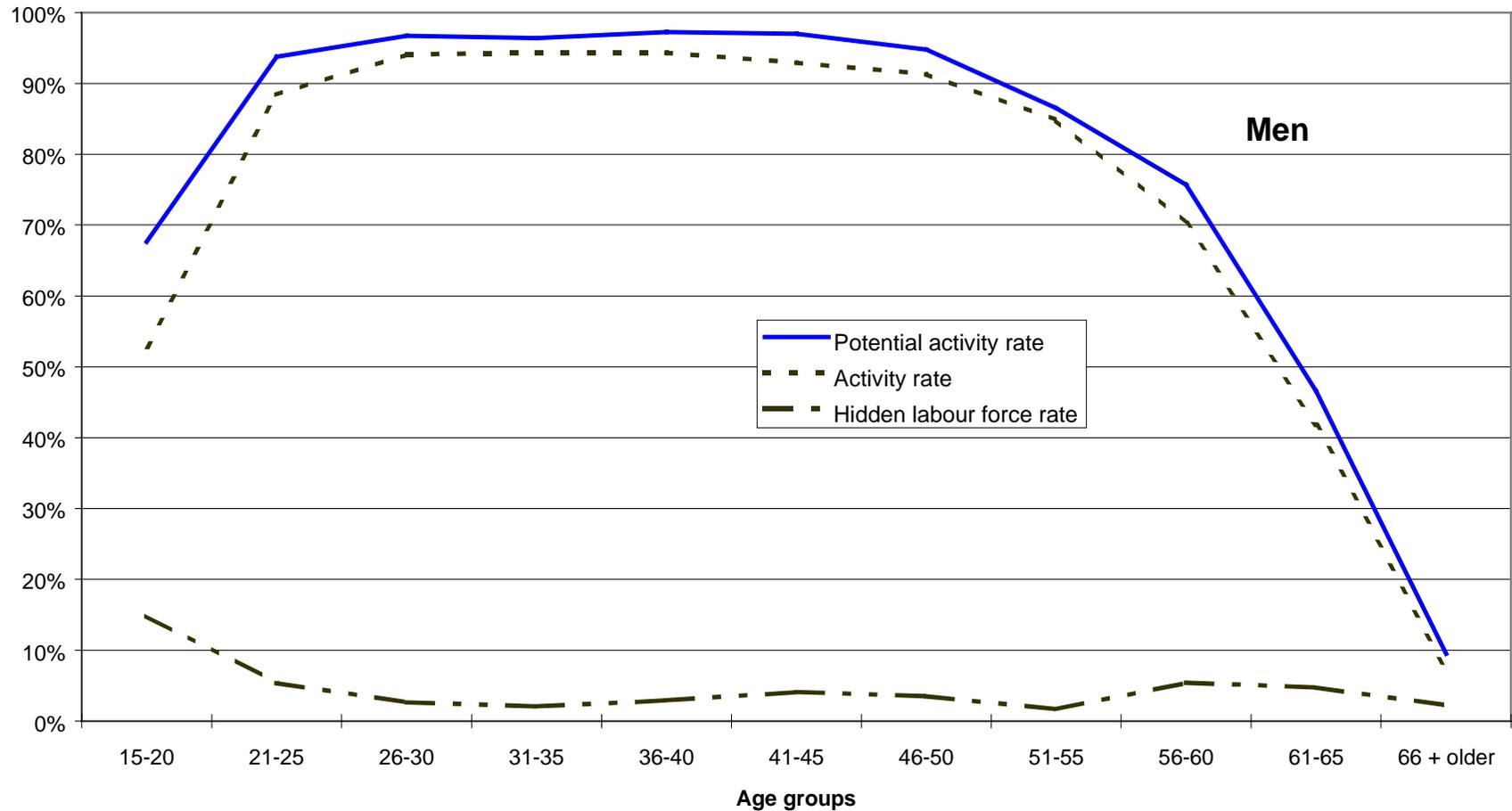


Figure 2

Potential activity rates, activity rates and hidden labour force rates in the United Kingdom, 1995

in % of the popula-
of the same

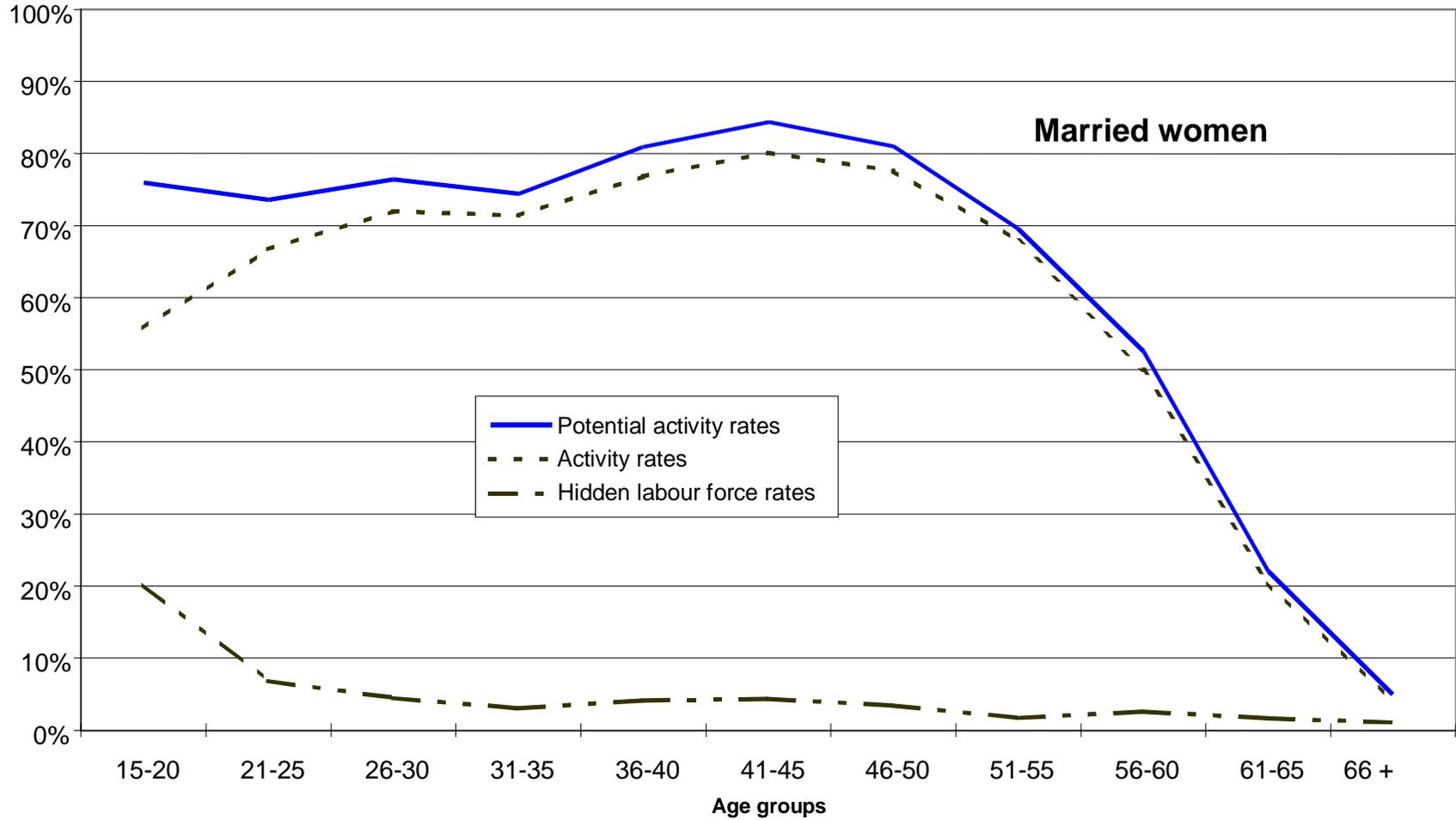
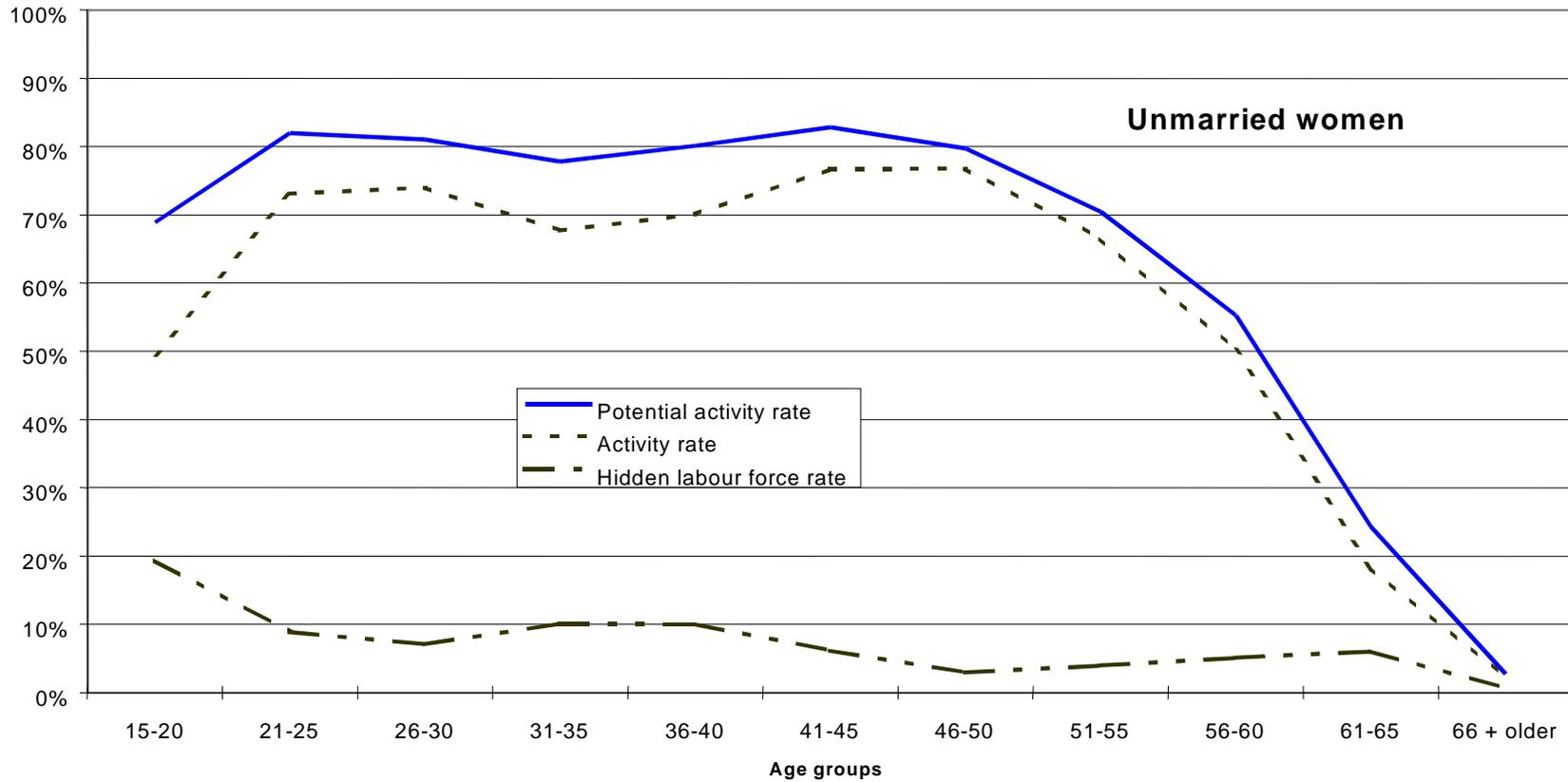


Figure 3

Potential activity rates, activity rates and hidden labour force rates in the United Kingdom, 1995

in % of the population of the same age



bour force cannot be determined virtually automatically. An exact knowledge of the relevant conditions is still needed.¹²

Somewhat higher hidden labour force rates were also found for the men and for the unmarried women in the upper age groups. This is probably explained through early departure from active employment due to the poor labour market.¹³

3.4 Size of the hidden labour force in the UK

The hidden labour force can be calculated with the aid of the hidden labour force rates and the relevant population figures. Between 1983 and 1995, the build-up and decline of the hidden labour force in the UK can be seen from Fig. 4. At the beginning of this period, there is a slight increase in the hidden labour force up to its maximum value of 2.6 million persons in 1985. For the years up to 1985, other indicators in the labour market situation point to a poor economic situation and thus to the possible existence of "discouraged workers". Consequently, the unemployment rate is at a high level and the proportion of the long-term unemployed also reaches its maximum during this period.

After 1985, up to and including 1990, the hidden labour force falls, hand in hand with a reduction in the number of unemployed. Simultaneously, an increase in employment can be seen for this period. Subsequently, up to 1993, both the number of unemployed and the size of the hidden labour force increase again.

If we differentiate according to sex and family status, we find that the trends differ for the unmarried women and the married women. Particularly at the beginning of the nineties, the figures for these two groups drift apart. The reason for this is not so much a development on the labour market, but is more likely to be a marked change in the shares of the population on which the figures are based.

The ratio between the hidden labour force and the unemployed during the period of the study is predominantly between 0.8 and 1, in other words the hidden labour force has slightly fewer people than are officially unemployed (Fig. 5). Between 1987 and 1990, the relationship between hidden labour force and unemployed in the UK increased significantly. This was due to a marked reduction in unemployment during these years, namely of 34.7%. In comparison, the hidden labour force decreased by just 15.5%. The reverse effect took place between 1990 and 1993. Here, too, the change in unemployment was greater than the change in the hidden labour force. Because of an increase in both values, the ratio nevertheless declined.

Compared with western Germany, the hidden labour force in the UK in the period under study is in some cases much higher. For example, from the IAB statistics for 1995, a

¹² All our estimates on the hidden labour force in the UK must be seen with the proviso that this knowledge is, at best, partially available. This does not mean, however, that the concept of hidden labour force cannot be applied to the UK.

¹³ A projection of the potential activity rates up to the year 2011 produced results which, as far as the basic trend is concerned, barely differ from a later British projection of the activity rates. (The two projections are not completely comparable because they differ from the time, space and conceptual point of view, see Armitage/Scott 1998)

Figure 4

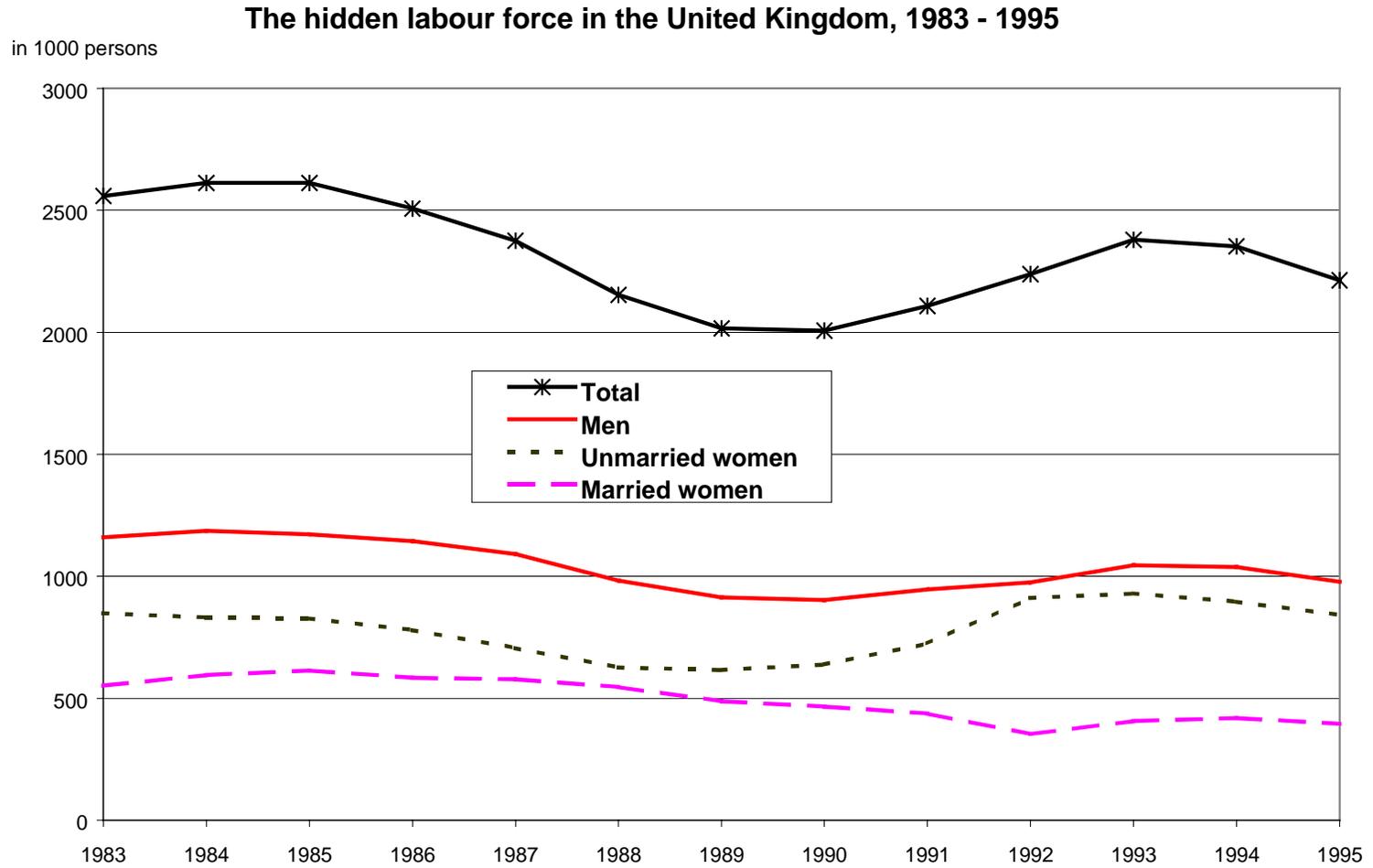
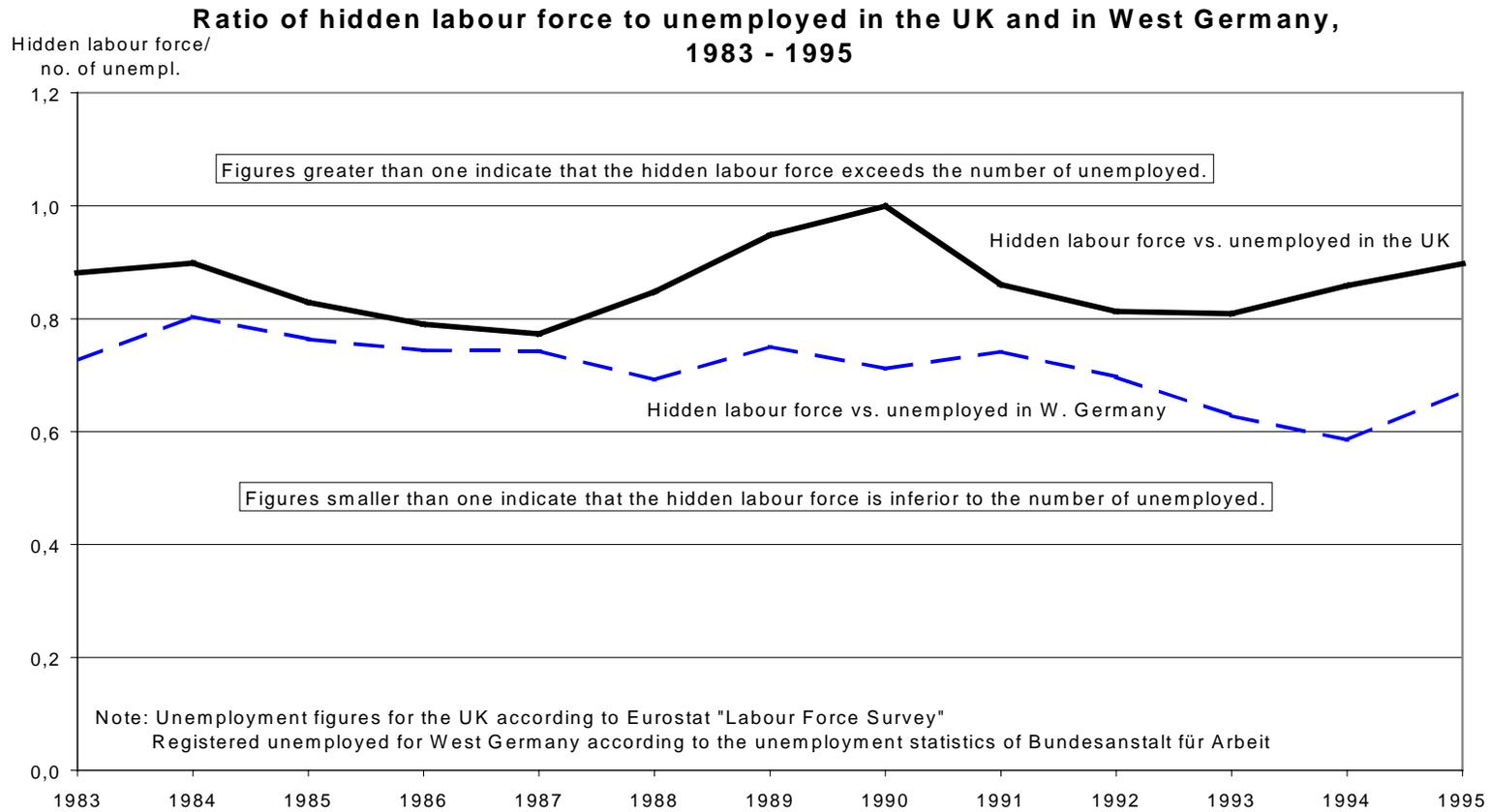


Figure 5



ratio of 0.67 can be calculated for west Germany, while the corresponding figure in the UK is 0.9. Even if we interpret these figures very cautiously and take into account an estimation error, we can nevertheless say that west Germany had a smaller total hidden labour force, even though the population was approximately 10% larger.¹⁴

3.5 *The potential labour force and the labour market balance*

To gain a better perspective of the results concerning the hidden labour force, we will now have a look at the development of the potential labour force and the labour market balance, in other words the comparison between the labour supply and the labour demand.

The potential labour force is calculated by adding together the labour force and the hidden labour force. During the period of observation, 1983 to 1995, there was an overall increase in the potential labour force (+ 1.7 million). This increase is, however, restricted to the period up to 1990, during which the potential rose from an initial 28.9 million to 30.8 million. Following a slight decrease in 1991, the maximum for the period of the study is reached in 1992, followed up to 1995 by another decline in the number of persons who could be potentially employed to 30.6 million. From 1983 to 1995, the increase is 5.9%.

For the men, an increase is observed up to 1990, through which, in the same year, the highest figure for the entire period is reached, namely 17.3 million. This period is followed by a continuous decline. Accordingly, the potential male labour force for 1995 is 16.9 million, which is only 100,000 or so above the 1983 figure of 16.8 million. This represents a growth over the whole period of 0.86%.

The increase in the potential labour force for women is much more marked, with a growth of 12.9%. There is a significant shift in the proportions of married and unmarried women, and in the size of the hidden labour force in the United Kingdom in 1992, attributable to changes in the population structure.

The size of the over-15 population, which is particularly important for the labour force statistics, rose between 1983 and 1995 by around 1.7 million persons, and thus explains most of the potential growth during this period.¹⁵

¹⁴ In the graph, the numbers of unemployed persons registered at the employment offices was used for west Germany. Despite the conceptual differences between the unemployed registered at the employment offices and the unemployed from the micro-census, this has no effect on the statement made in the text, because the average annual number of registered unemployed differs by only around 200,000 from the number of unemployed counted in the micro-census.

¹⁵ In addition to the estimate of the hidden labour force, this regression model can be used relatively easily to predict the future labour supply. For this, the potential activity rates and the future population must be projected. For projecting the potential activity rates, the future values for the exogenic variables need to be forecast. On the other hand, no information is needed about the future labour market situation. After all, only the boom economy figures – also kept constant for the future – are used in the regression equations. Together with the appropriately predicted population, this gives the potential labour force. The projection for the potential labour force in the United Kingdom can be supplied on request.

Figure 6

The potential labour force in the UK, 1983 - 1995

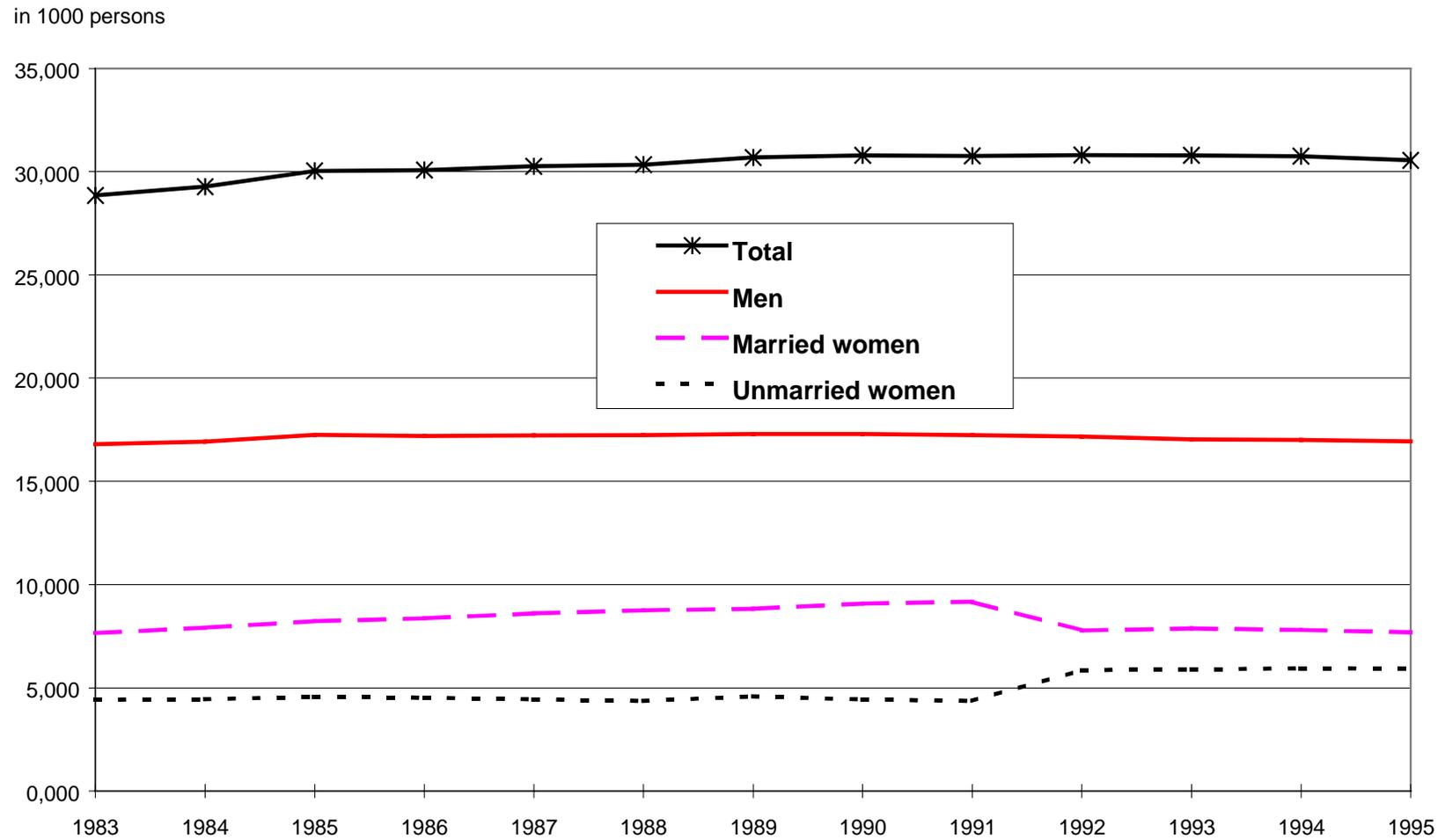
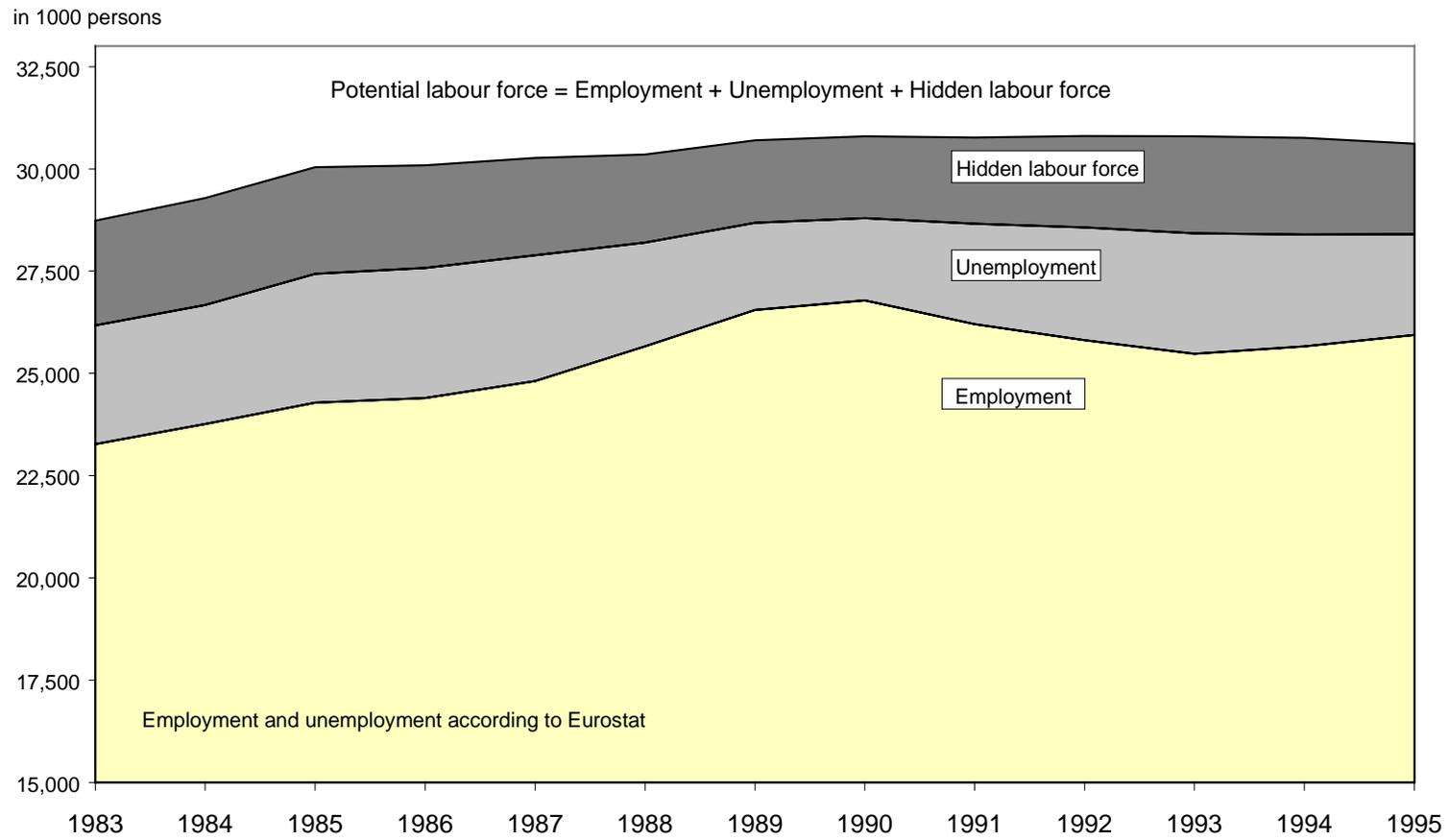


Figure 7

Labour market balance for the UK, 1983 - 1995



The labour market balance from Figure 7 shows a high underemployment, which is not decisively reduced even by the employment gains since 1993. The recognisable economic fluctuations in the numbers of employed persons is reflected not just in the unemployment figures, but also in the size of the hidden labour force.

4 Unemployment, hidden labour force and underemployment – an international comparison

With the hidden labour force, we have a very broad concept of underemployment (cf. Chapter 2), because the hidden labour force includes the discouraged workers, people in short-term "on-hold" situations in the educational system, older employees in early retirement and disabled people who are in early retirement because they are unable to work due to circumstances on the labour market.

The problem that the official unemployment figures only partially describe the underemployment is generally known. Not least because of this, various methods have been developed as alternatives to the (official) unemployment figures. This paper will therefore conclude by comparing how these alternatives document unemployment in the United Kingdom, and what results they yield.

The OECD calculates, on the basis of Labour Force Surveys, a standardised unemployment rate which is suitable for international comparisons. Over and above this, the OECD also publishes figures on the "discouraged workers", obtained from national sources. Up until a few years ago, figures on the discouraged workers were also contained in the "Monthly Labour Review" journal, as part of the Concept U-7.¹⁶

The pure discouragement effect, taken from the figures in the Monthly Labor Review, constitute at maximum somewhat less than 1 percentage point of the labour force (cf. Sorrentino 1995, p. 35). As is also assumed for Germany, the discouragement effect fluctuates in cycles with the respective situation on the labour market. Nevertheless, the hidden labour force goes far beyond the discouragement effect and includes other groups of persons close to the labour market (e.g. early retirement).

Another way of measuring underemployment used by the OECD, the "broad unemployment", also goes in this direction. It includes all people of working age who receive social benefits or work in government-assisted employment relationships. Underemployment defined in this manner thus includes the unemployed, people on early retirement, people receiving disability benefits, social assistance etc. Since broad unemployment also includes the (government) assisted employment, this must be taken out of the calculations for a comparison with the hidden labour force.

¹⁶ The American Office of Labor Statistics published, in its Monthly Labor Review for the period from 1983 to 1993, seven indicators of underemployment, known as U-1 to U-7, for ten key industrial countries. These indicators measure the trend of underemployment with the aid of figures on long-term unemployment (U-1), new inflow of unemployed onto the register (as a proportion of the labour force, U-2), etc. U-7 includes the "discouraged workers", U-6 covers the same group of people without the discouraged workers. From these figures, the number of discouraged workers can be extracted.

The extent of underemployment depends on how comprehensively underemployment is defined. The following table, which compares a few measurements of underemployment, should give an overall impression. For a better comparison, the table also includes figures for the Netherlands (estimates for the Netherlands were made as part of the work on which this report is based, see Schmidt/Fuchs 1999).

The official unemployment rate for Germany is higher than for the United Kingdom and also higher than in the Netherlands, both according to the national statistics and according to the standardised rates (Table 2). On the other hand, the estimates for Germany show a lower hidden labour force rate than in both the other countries. Taking into account the (certainly large) estimation error, the hidden labour force in the UK could, however, perhaps just about conform with that of Germany. In terms of the broad unemployment rate, the UK comes out well. According to this concept, underemployment in the UK is lower than in Germany and the Netherlands.

All in all, the total underemployment in the UK is probably larger than is given in the official unemployment statistics. This becomes evident as soon as we use underemployment concepts that go beyond official unemployment. In particular, a large hidden labour force has also been built up in the UK. In 1995, the hidden labour force in relative terms, calculated against the potential labour force, was even higher than in Germany. Whether or not this relativises the British success story or not will be left to the reader to judge.

Despite many limitations, it has been possible to successfully apply the concept of a 'hidden labour force' to the labour market in the UK. The estimates of the hidden labour force for the United Kingdom (and also for the Netherlands) should naturally be interpreted with the necessary caution, because they are merely initial attempts at a quantification. They should also illustrate that, for each problem, the "right" measurement of underemployment must be used – no measurement will be able to comprehensively and unambiguously answer all questions.

Table 2: Underemployment in the United Kingdom, the Netherlands and Germany

	Registered unemployed (national statistics) as a percentage of the civilian labour force ^{1,2)} 1995 (1996)	Standardized unemployment rate (according to ILO, i.e. people out of work) as a percentage of the civilian labour force ²⁾ 1995 (1996)	Hidden labour force in % of the potential labour force ^{3,4)} 1995	Broad unemployment (in analogy to the OECD definition of „broad unemployment“) in % of the „broad unemployment rate“, excl. subsidized employment ^{4), 5)} 1996
Germany	9.4 (10.5) %	8.2 (9.0) %	6.7 %	15.0 %
Netherlands	7.1 (6.7) %	6.9 (6.3) %	8.1 %	15.6 %
UK	8.9 (8.5) %	8.8 (8.2) %	7.2 %	12.9 %

Sources: Own calculations and

- 1) OECD, Economic Surveys 1997-1998, Netherlands, p. 167; United Kingdom, p. 184
- 2) OECD, Employment Outlook 1997, Stille 1998, p. 5
- 3) Autorentgemeinschaft 1999
- 4) Schmidt/Fuchs 1999
- 5) Stille 1998, p. 7 and (same issue) Peters 1998, p. 68

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