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Self-employment and the Distribution of Income – Increasing Divergence?

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Abstract

Working conditions have changed over the last decades due to new technologies, increasing demand for flexibilisation, new and rapidly changing market situations combined with globalisation, worldwide dynamics and liberalisation of labour markets. As a result a divers forms of self-employed work has developed. Self-employment can be characterised by four aspects: a) heterogeneity and differentiation, b) precarisation, c) hybridisation, as well as d) de-standardisation and mobility. This can be seen as an indication for successful labour market policy fostering the flexibility of labour, but it may also reflect the poor economic situation of households.

In this paper, it is asked if rising income inequality can be observed for self-employed people. The situation will be discussed exemplarily for Germany on the basis of the Microcensus of the Federal Statistical Office of Germany with data covering the period 1991 to 2011.

First results indicate that we have to distinguish between at least two processes: On the one hand, there is an increasing number of people, which became solo self-employed out of the need to earn a living – especially in the case of solo self-employment. On the other hand, self-employment is the result of the possibility to use specific human capital to work independently and to fulfil one's dream of a lifetime. Additionally, there are the classic occupations – especially the free or independent professions such as health professionals, pharmacists, tax advisers, or solicitors. For these occupations the structure of the income distribution remains homogeneous over time.

Keywords

Self-employment, income distribution

Zusammenfassung

Die Arbeitsbedingungen haben sich in den letzten Jahrzehnten aufgrund neuer Technologien, steigender Nachfrage nach Flexibilisierung, neue und sich schnell ändernde Marktsituationen kombiniert mit der Globalisierung, der weltweiten Dynamik und der Liberalisierung der Arbeitsmärkte verändert. Infolgedessen entwickelten sich diverse Formen der selbstständigen Arbeit. Selbstständigkeit kann mittlerweile durch vier Aspekte charakterisiert werden: a) Heterogenität und Differenzierung, b) Prekarisierung, c) Hybridisierung sowie d) Destandardisierung und Mobilität. Diese Entwicklung kann einerseits als Indiz für eine erfolgreiche Arbeitsmarktpolitik gesehen

werden, welche die Flexibilität der Arbeit fördert, andererseits kann es auch die prekäre wirtschaftliche Situation der Haushalte widerspiegeln.

In diesem Zusammenhang beschäftigt sich der Beitrag mit der Frage, ob eine steigende Einkommensungleichheit für Selbständige zu beobachten ist. Die Situation wird exemplarisch für Deutschland auf der Grundlage des Mikrozensus des Statistischen Bundesamtes anhand der Daten für den Zeitraum 1991 bis 2011 diskutiert.

Erste Ergebnisse zeigen, dass zwischen mindestens zwei Prozessen zu unterscheiden ist: Auf der einen Seite gibt es eine wachsende Zahl von Menschen, die selbstständig wurden, um ihren Lebensunterhalt zu verdienen - vor allem im Fall der Solo-Selbstständigen. Auf der anderen Seite ist die Selbstständigkeit das Ergebnis der Möglichkeit, spezifisches Humankapital zu verwenden, unabhängig zu arbeiten und sich einen Lebensraum zu erfüllen. Zusätzlich gibt es die klassischen Tätigkeiten - vor allem die Freien Berufe wie Mediziner, Apotheker, Steuerberater oder Rechtsanwälte. Für diese Tätigkeiten bleibt die Struktur der Einkommensverteilung im Laufe der Zeit homogen.

Stichwörter

Selbständige Erwerbstätigkeit, Einkommensverteilung

Table of Content

1	Background.....	1
2	Data	2
3	Empirical Analysis	3
4	Conclusions.....	10
5	References.....	12

1 Background

During the last decades three global trends have been observed. First, a general process of globalisation took place driven by ICT and the internet. Second, a fundamental rise in the service sector especially in the western welfare states occurred, which is often called tertiarisation.¹ Third, a secular trend towards an information society becomes more and more noticeable. Against this background, working conditions have generally changed as a result of new technologies, increased demand for flexibility, as well as new and rapidly changing market situations combined with worldwide dynamics. Therefore, the analysis of self-employment has to acknowledge a bundle of influencing factors, e.g. labour market trends towards flexibilisation and individualisation, sectoral changes as well as rationales by households and individuals based on the idea of rational choices to maximize individual or household wealth.²

The development during the last decades has led to more heterogeneity and differentiation, de-standardisation and mobility, hybridization, and precarisation of work and working conditions with respect to the self-employed.³

Heterogeneity and differentiation:

The number of self-employed people has risen during the last decades. The differentiation of the self-employed reveals a large heterogeneity with respect i. a. to working conditions and working hours. An indication for that is e.g. the strong increase in the number of solo self-employed women.

De-standardization and mobility:

An increase of unsteadiness of employment with frequent changes between dependent employment, self-employment and unemployment took place. As a result, de-standardization of normal work careers in form of significant differences and unsteadiness of economic and social positions occurred.

Hybridization of work:

A new form of segmentation in the labour force has occurred and new forms of casualization have resulted from below-average incomes and instable economic positions in short-term contracts as well as risky market positions. One phenomenon of hybridisation is the parallelism of work having two or even more occupations at the same time.

¹ See e.g. Wölfl (2005), Castells (2010).

² For a short review of the literature see Davidsson (2016), Norn et al. (2011), Álvarez et al. (2014).

³ Bögenhold/Fachinger (2016), p. 20 ff., International Labour Office (2015), Bögenhold/Fachinger (2013), p. 44 ff., Kalleberg (2011), Koch/Fritz (2013),

Precarisation:

Precarisation of work refers to the circumstance that income from gainful occupation is close to the minimum subsistence level. Self-employed people are sometimes directly linked with the phenomenon of the working poor, so that the question arises inter alia, to what extent does self-employment exhibit analogue forms of a modern day labourer.

Because of these developments that occurred during the last decades, the careers of self-employed people have become even more heterogeneous. On the one hand, this is seen as positive from an economic point of view, especially with respect to the mobility of labour as a production factor. On the other hand, the situation may be problematic regarding the income situation and the potential rise of the “new poor”.

However, within this context the overall effect of those factors on the income distribution of self-employed people is more or less unclear. It is undecided whether the distribution remained the same over a longer period of time – with a lot of income mobility under the surface. Therefore it is asked in the paper if rising income inequality can be observed for self-employed people.

2 Data

For the empirical analysis scientific use files of the Microcensus data (MZ) from the Statistical Office Germany are used which are available from 1991 until 2011. It is a representative and continuous household sample survey where all households within the territory of Germany have the same probability of selection. 1 % of the population are enclosed in the data. For example in 2011 the number of households participating in the survey was about 370,000 (820,000 persons). The participation is compulsory, but a quarter of households in the sample is substituted every year. The annual standard questionnaire includes personal characteristics (age, sex, citizenship, profession, employment etc.) and information about the family and household context.

However, the reliability of the MZ is giving cause for concern, because the survey comprises self-reported data on e.g. occupational status⁴ or own net income. It is well known that those self-reported data especially on net income deviate sometimes considerably from other data sets, for example from the income and expenditure survey of the Statistical Office Germany.⁵ Therefore major concerns exist about the credibility of the income data. But as no satisfactory information concerning the

⁴ Occupational status is defined as the main work activity.

⁵ Münnich (2000): 689; another example is the unreliable information about the social security status Dräther et al. (2001); in general Euler (1985), Euler (1983).

incomes of self-employed people is elsewhere available the MZ is the only data base which at least gives some insight in the distribution of income of the self-employed.

3 Empirical Analysis

To get an idea of the development of self-employment in Germany, the number of self-employed people for the time period 1991 to 2013 is shown in Figure 1, stratified by gender. Additionally, the development of the number of solo self-employed people is stated. Based on the data it can be assumed, that the overall trend of self-employment is mainly influenced by the development of solo self-employment.

Figure 1: Number of self-employed people, 1991 to 2013, Germany



Source: Own calculations on the basis of Piorkowsky/Petermann (2015).

Overall, the number of self-employed people has increased, which is a reflection of the structural changes of the labour force. More and more people have become self-employed. It becomes obvious, that the development of total self-employment is mainly due to the change in solo self-employment. Therefore the overall increase in self-employment is primarily the result of the increase in solo self-employment.

The aforementioned processes which led to the increase of self-employment affect also its structure. For example, one can distinguish between full-time and part-time work as well as between first or only gainful employment and second gainful employment and its specific combinations. As it is not possible to have a second gainful

employment as a full-time job, three cases can be distinguished, which are named as follows and which are shown in Figure 2:

- Regular, if self-employment is the first or only gainful employment as full-time
- Additional, if self-employment is the first or only gainful employment which is done as a part-time job, it is referred as additional because in a household context, the money out of such an activity is not the main income source, but contributes to the household income

Sideline, if self-employment is the second gainful employment which only can be done on a part-time basis.

Figure 2: Heterogeneity of self-employment

	First or only gainful employ- ment	Second gainful employ- ment
Full-time	Regular	
Part-time	Additional	Sideline

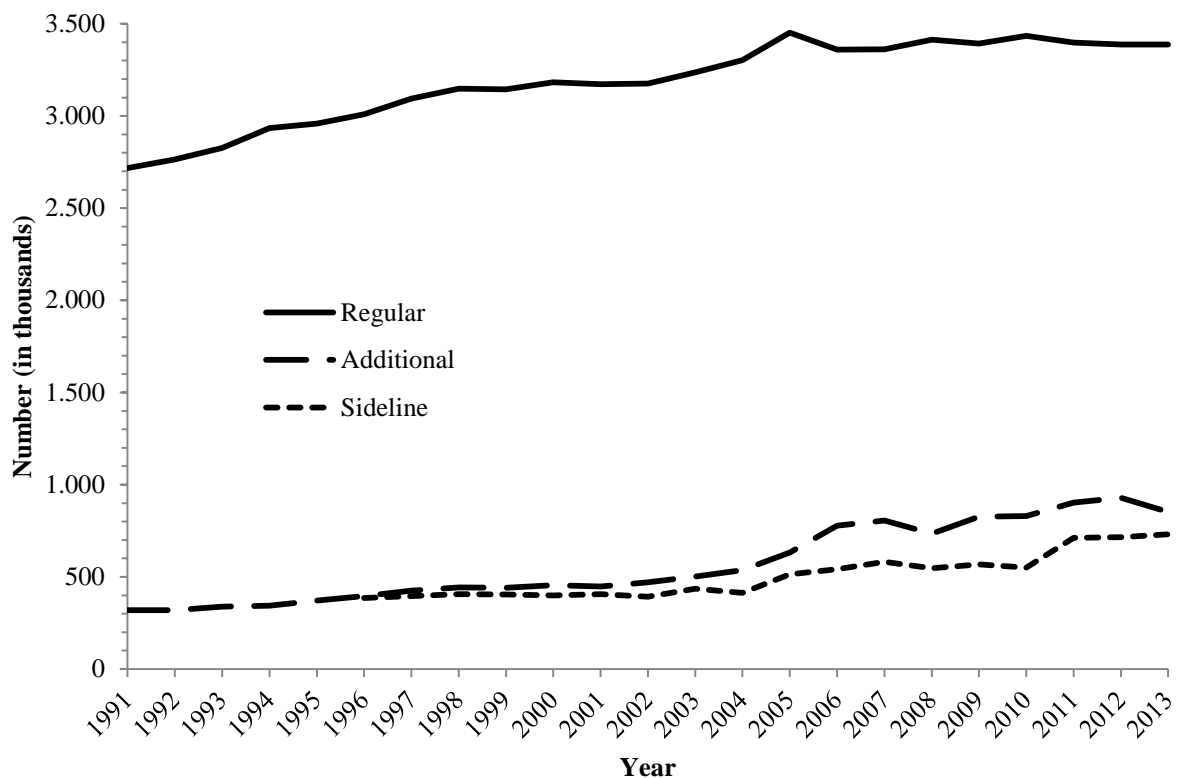
If self-employed people are divided into these categories it becomes obvious in Figure 3, that an increase in additional and sideline self-employment took place since 2004/2005 whereas the number of regular employment stayed nearly the same. However, the percentage of regular self-employment declined between 1996 and 2013 from 79.4 % to 68.1 % whereas the percentage of additional gainful employment grew from 10.4 % to 17.1 % and of sideline self-employment from 10.2 % to 14.7 %.⁶

The increase in additional and sideline employment is indicative for a growing heterogeneity and hybridisation within the group of the self-employed. However, the reasons for the increase are manifold and not necessary coupled with aspects of precarisation and increasing divergence of income. For example people may have to care for children or disabled persons, may not want to work full-time, may have private or family commitments, or full-time employment may not be available.⁷ The development shown in Figure 3 is one reason, why it is expected that overall, the inequality of the income distribution of self-employed people has grown.

⁶ Own calculations on the basis of Piorkowsky/Petermann (2015).

⁷ Bögenhold/Fachinger (2016): 27.

Figure 3: Growing heterogeneity of self-employment



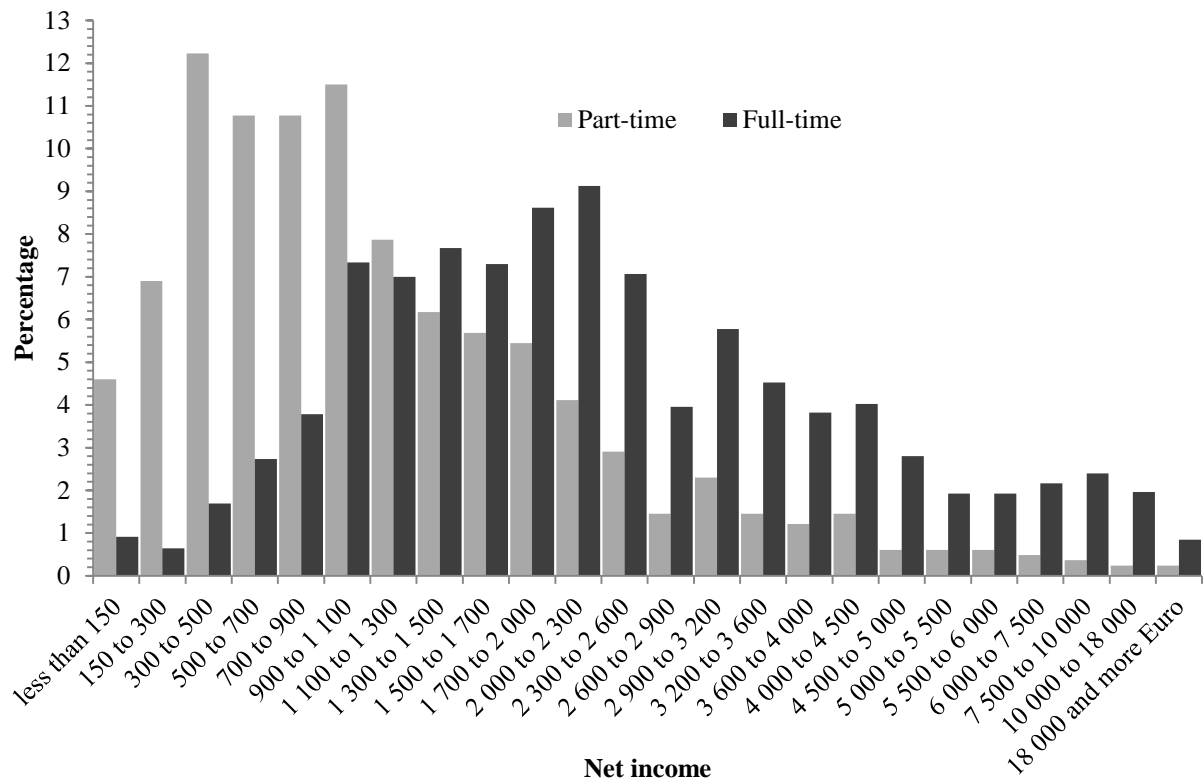
Source: Own calculations on the basis of Piorkowsky/Petermann (2015).

The mere number of working hours alone result in lower income for part-time self-employed people compared to full-time employment as can be seen exemplarily in Figure 4. The increase of the number of part-time self-employment leads to a more unequal income distribution. Therefore an increase in divergence can be stated as caused by an increase in additional and sideline employment.

An increase in part-time self-employment does not necessarily reflect an increase in precarious living conditions. To identify increasing divergence one has to take a look at the specific groups as precarisation will result e.g. in lower income by the same amount of working hours. Therefore in the following the focus is on the within-group inequality of income.

To find out whether the income became more unequal, a comparison of the income distributions over time could yield some insights. The analysis focuses on regular self-employed people i.e. on those people for whom income out of self-employment is the main income source. If these people working on a regular basis earn less than before would be a reflection of a precarisation process.

Figure 4: Net income of self-employed people, part-time and full-time 2011, in Euro, nominal

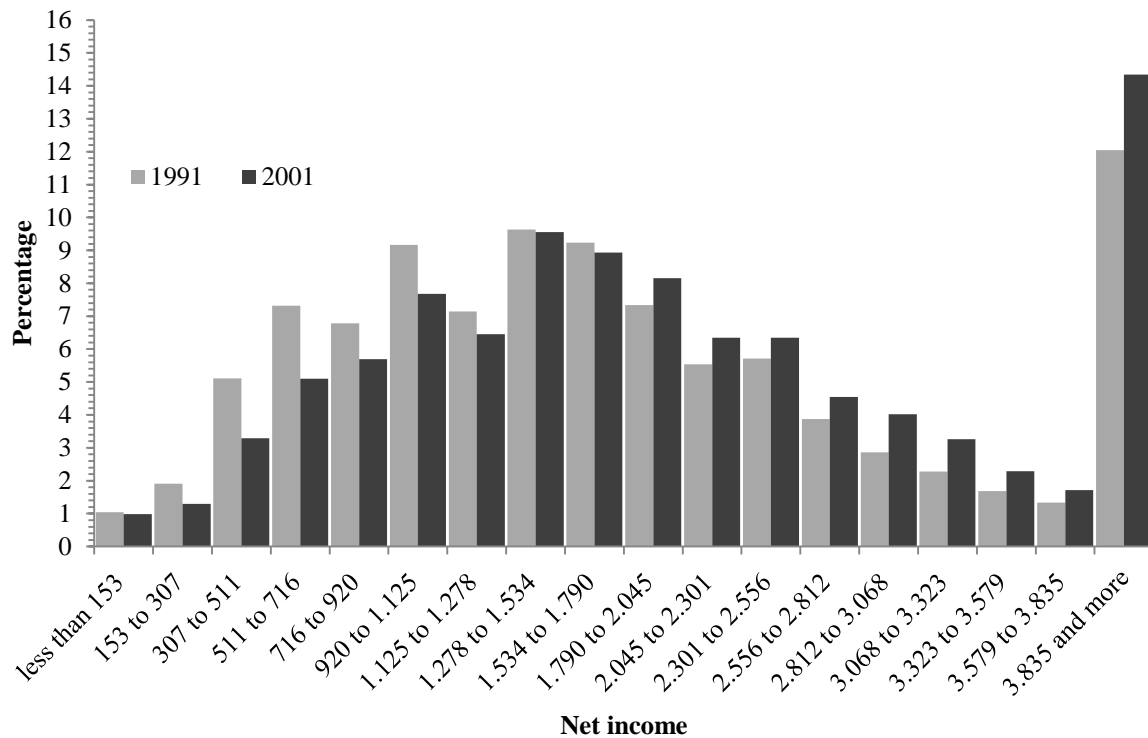


Source: Own calculations on the basis of Microcensus data (MZ) from the Statistical Office Germany.

However, the comparison presents some problems: First an adjustment for the price development is necessary for the comparison of income data as the purchasing power changes over time. This is problematic as the data are interval-scaled. Second, the unit of account was changed in 2001 from DM to Euro (1.0 Euro is equivalent to 1.95583 DM).⁸ Third, the lower and upper interval limits are constant over time – with the only change coming by the adjustment from DM to Euro and setting the interval limits in scale units of 100 Euros. Therefore a conversion in purchasing power has not been carried out and the investigation period has been divided in two periods. Fourth, the highest classes have no upper limits and are different: in 1991 it is 3,835 and more Euro and in 2001 the highest class is 17,895 and more Euro. To calculate statistics such as the arithmetic mean or the standard deviation, a single value has to be chosen for the highest income class. The distributions of the nominal income for the time period of 1991 and 2001 as well as 2003 and 2011 are shown in Figure 5 and Figure 6.

⁸ 0.511292 Euro = 1.0 DM.

Figure 5: Net income of regular self-employed people, 1991 and 2001, in Euro, nominal



Source: Own calculations on the basis of Microcensus data (MZ) from the Statistical Office Germany.

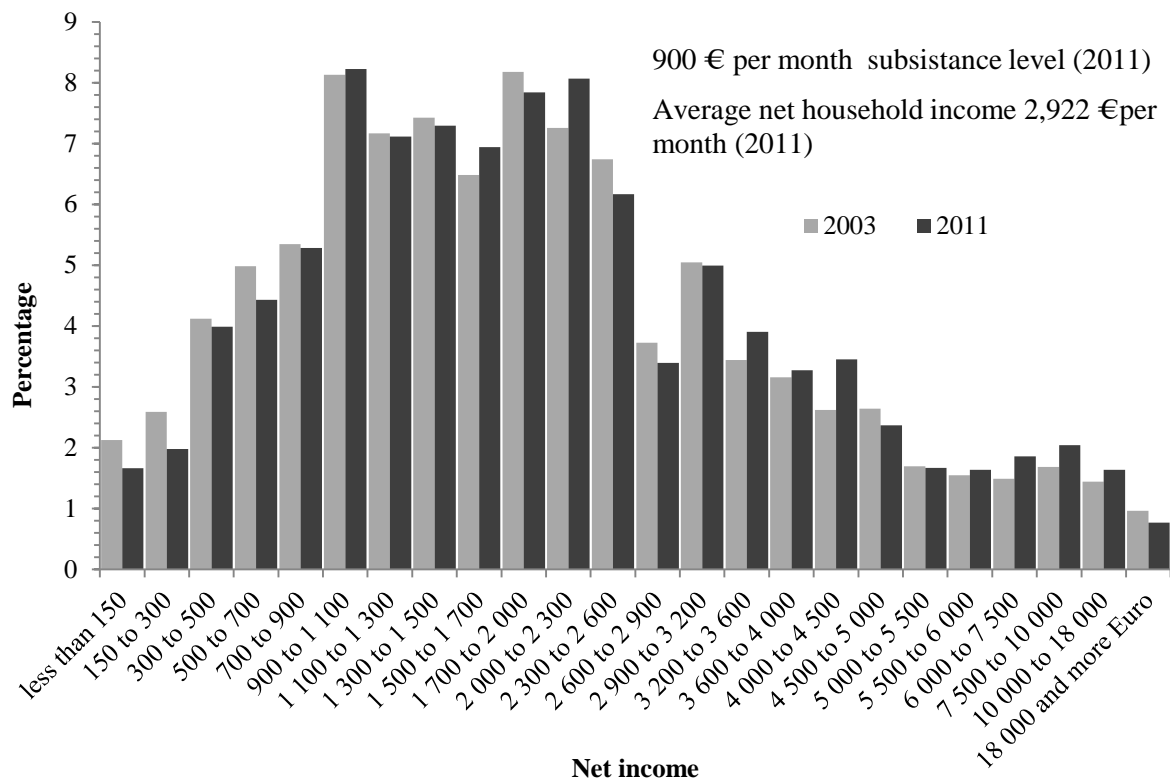
The eye-test reveals that the distribution has slightly shifted to the right for the time period 1991 to 2001 but the shape of the profile remains more or less the same. The shift could be the reflection of the price effect. The index of gross individual income in 2010 prices increases from 70.2 to 87.4⁹.

However, the highest category has no upper limit and therefore values have to be chosen for 1991 and 2001 to calculate the arithmetic means, standard deviations or the coefficients of variation. As the distribution is generally positive or right-skewed, the middle of the next lower class is added to the lower class limit of the highest category to calculate the arithmetic mean.

Additionally it is assumed that for 1991 and 2001 the distribution within the upper class is the same. Therefore, the number of people in 1991 is distributed over the income classes as in 2001 and the arithmetic mean is calculated for each of those classes. For the upper limit of 17,895 and more Euro in 1991 the arithmetic mean is used from 2001 with the remaining percentage of 1991.

⁹ Deutsche Rentenversicherung Bund (2015): 272.

Figure 6: Net income of regular self-employed people, 2003 and 2011, in Euro, nominal



Source: Own calculations on the basis of Microcensus data (MZ) from the Statistical Office Germany.

With those assumptions the arithmetic mean (\bar{x}), the variance and the coefficient of variation (CV) was calculated. In 1991 \bar{x} is 2,104.66 and the CV is 1.34 and in 2001 the statistics are $\bar{x} = 2,542.09$ and $CV = 1.27$. Overall it seemed as if the distribution got more equal and the arithmetic mean increases.

As is well known, the statistics are strongly influenced by the assumptions about the distribution in the upper class. To avoid this, the median of the income distribution could be calculated. A look at the median of both distributions reveals that for 1991 the value falls in the interval of 1,278 to 1,534 and in 2001 in the interval of 1,790 to 2,045, which is a difference of 511 Euro. This indicates an overall increase of the income of regular self-employed people. Therefore neither an increase of inequality nor a rise in precarisation could be identified for the time period 1991 to 2001.

A look at the distribution in 2003 and in 2011 reveals more or less the same result. The shapes of the distributions are nearly identical for the two years. The statistics also do not exhibit large differences between the two distributions. In 2003 \bar{x} is 2,610.64 and CV is 1.39 and in 2011 the statistics are $\bar{x} = 2,664.50$ and $CV = 1.29$.

The values are in nominal terms. But for comparisons of income over time, the changes of the price level should be taken into account. In the following table, the price index, nominal and real values as well as the CV are shown.

Table 1: Price index, nominal, and real values of arithmetic means \bar{x} , and CV

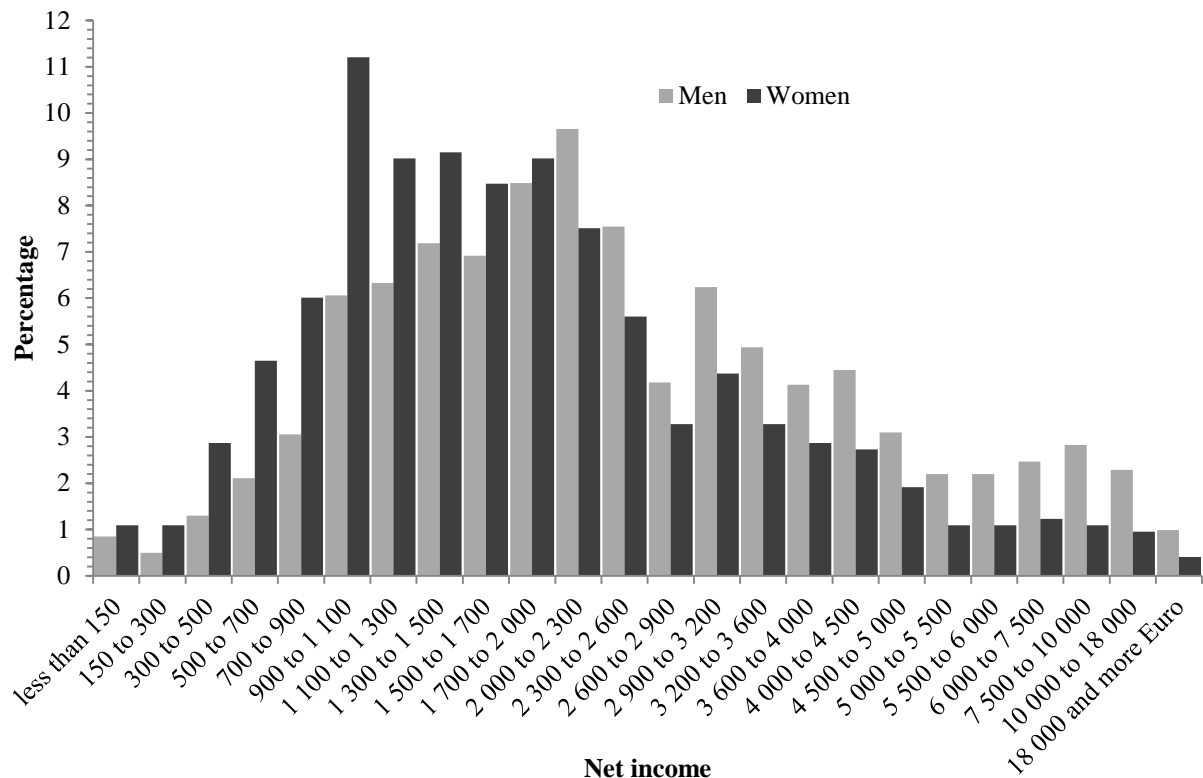
Year	Price index (basis 2010)	Nominal value \bar{x}	Real value	Coefficient of variation
1991	70.2	2,104.66	2,998.09	1.34
2001	87.4	2,542.09	2,908.57	1.27
2003	89.6	2,610.64	2,913.66	1.39
2011	102.1	2,664.50	2,609.70	1.29

Source: Deutsche Rentenversicherung Bund (2015): 272, and own calculations.

A decrease in real income took place between 1991 and 2011, indicating a decline of around 13 % in purchasing power or overall welfare. The decline in average real income of regular self-employed people can be interpreted as an indication of a rise in precarious living conditions. The average net household income in 2011 is around 2,862 Euro in real terms. Whereas in 1991, 2001 and 2003 the income from regular self-employment was above the real average income, in 2011 income from full-time self-employment is on average around 11 % lower than the average household income. The decline in average income of self-employed people may be also the reason that an increase in income inequality cannot be constituted. The value of the CV is not higher in 2011 than in the previous years.

But that does not mean, that self-employed people are well off and precarisation is marginal. Taking a look at Figure 7 shows that the percentage of regular self-employed people with an income below the subsistence level of 900 Euro especially for self-employed women is quite high. 15.7 % of self-employed women earn income below the subsistence level whereas 7.8 % of self-employed men have an income below this threshold. 79.0 % of women and 64.2 % of men have an income below the average net household income of 2,922 Euro per month.

Figure 7: Net income of regular self-employed people, men and women, 2011, in Euro, nominal



Source: Own calculations on the basis of Microcensus data (MZ) from the Statistical Office Germany.

4 Conclusions

Regarding the question whether an increase of divergence in self-employment could be observed, a growth in the heterogeneity of self-employment was identified. Whereas the development of regular self-employment was more or less stagnant since 2005, an increase of sideline employment and of additional (part-time regular) employment can be observed. The last development leads *ceteris paribus* to more people with low income.

One indication for precarisation is that people doing work on a regular basis are becoming more and more vulnerable concerning their economic situation. The results of the descriptive analysis are a little ambiguous. On the one hand between 1991 and 2011, a decline of average real income out of regular (full-time) self-employment can be observed and therefore a decline in purchasing power took place. On the other hand there is no evidence for rising income inequality as a result of the increasing divergence. Overall the analysis delivers only a first glimpse at the changing income distribution of self-employed people between 1991 and 2011 and the maintenance of income inequality.

Further work is called for to address the reasons behind the stability of the income distribution. For example decomposition analysis for groups of persons, for economic sectors, or occupations could be the next step.

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