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The dynamics of combining self-employment and employment

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The dynamics of combining self-employment and employment

by

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Abstract

This study examines the extent to which wage-earning workers are simultaneously self-employed, a phenomenon not thoroughly investigated in earlier studies. We use matched employee-employer databases to present a detailed investigation of self-employment patterns within the post industrial sectors in Sweden from 1990 to 2002. We find that persons that combine self-employment with waged work constitute a majority of the total number of self-employed, and that most people enter self-employment by engaging first in combinatory work, indicating that the decision to move to self-employment is more complex than characterized in earlier research.

Keywords: Self-employment, income dynamics, entrepreneurship
JEL-codes: J24, J60

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1 Introduction

This study examines the extent to which wage-earning workers are simultaneously self-employed. We seek to provide an empirical characterization of people combining self-employment and wage work and to provide arguments why the decision to combine self-employment and wage work may be different from the decision to go from wage work to fully self-employed.

Interest in this subject is motivated by several factors. First, there are reasons to believe that individuals combining self-employment with wage earning employment (hereafter labelled "combiners") may be an economically important class of workers previously ignored in the literature. The abundance of research which has examined self-employment has generally classified workers as either self-employed or wage earners, leaving it ambiguous to what extent they do both. Yet, some recent research indicates that combiners are both common and rapidly growing. The Global Entrepreneurship Monitor – a yearly study that measures the level of entrepreneurship in a number of countries – shows that many entrepreneurs engaged in creating a new venture simultaneously hold an outside job (Reynolds et al., 2003). Data from the Panel Study of Entrepreneurial Dynamics shows that in a representative sample of people that are in the process of starting a business in the U.S., 20 percent combine wage work with being self-employed (Petrova, 2005). Burke and colleagues (2008) followed 11,361 men and women from the British National Child Development Study and found that 'pure' self-employed are outnumbered by individuals who mix their time with periods in both self-employment and wage work (Burke, FitzRoy, and Nolan, 2008). Evidence from the European Labor Force Survey indicates that a large proportion of the self-employed consider themselves as 'part-time self-employed', combining this with some type of other work (11 percent in Greece, 18 percent in France, 32 percent in Sweden, and 68 percent in the Netherlands, Strohmeyer and Tonoyan. 2006).

With very little prior evidence of combiners, we lack theoretical appreciation for why individuals choose such arrangements. Even the though literatures in career development or history (Sullivan, 1999), job mobility (Lazear, 1995), or self-employment (e.g. Carroll and Mosakowski, 1987; Evans and Leighton, 1989) have investigated switches

between wage earning positions and self-employment, we do not have an understanding of the factors that influence when individuals might choose to experience both simultaneously. We can think of many such factors: It may be that combiners are trying to keep their employment options open if one of them is lost. The answer may be as simple as allowing employees to also earn extra income, just as they would if they were to work a second wage-earning position. Yet, combiners may be less interested in dual income sources or job security if there are unique social or psychological benefits of self-employment that they cannot achieve in wage-earning positions. The prospect of attaining those beneficial aspects in self-employment, while retaining the security of wage work may be attractive for many. Alternatively, combining might be a way for a worker to increase her flexibility, learning her potential and market attractiveness relative to traditional employment (Sullivan, 1999). Also, combiners may be in the midst of a transition to full-time self-employment. The reasons for engaging in both types of employment simultaneously may be unique from the reasons to engage only in self-employment. Potential explanations of this phenomenon deserve greater theoretical and empirical attention.

Studying individuals combining both wage work and self-employment might have implications on how we interpret prior work that has studied switches into self-employment and how we should examine such switches in the future. The literature tends to classify combiners as self-employed, as wage earners, or ignoring them completely. Such an approach may obfuscate the true determinants of switching into self-employment and the factors that impact individual's choice to engage in combining. Our results do in fact suggest that studies of transitions into self-employment should consider combination as an important category of employment. A final reason to explore the dynamics of combining is that there is little previous work to guide us in our assessment on the economic significance of this category.

Our analysis is based on matched employee-employer data from Statistics Sweden and covers over 3,300,000 individuals active in the post-industrial sectors (see data sources and Appendix 1 for definition) from 1990 to 2002. The sample represents over 70 percent of the Swedish active labor market. For each individual and year, we are able to observe the amount of income received from wage work versus self-employ-

ment. These data allows us to observe over time the extent to which each individual was involved in wage work, self-employment, or both.

Section 2 draws upon relevant literature in economics, sociology, and management to suggest theoretical reasons why individuals might combine self-employment with employment. Section 3 outlines the data, describing the unique opportunities of matched employee-employer databases to further our understanding of the income dynamics among self-employed. Section 4 presents the results, focusing on descriptive and bivariate analyses that compare different groups of self-employed and combiners. We also show the dynamic patterns by which individuals move from wage to combining or self-employed, from combining to self-employed, and vice versa. Section 5 discusses the results and their implications for future research.

2 Reasons for initiating self-employment while employed

In this section we consider that individuals engaged in wage-earning positions have three alternatives: (i) they might stay in a wage-earning position; (ii) they might move to self-employment in lieu of a wage-earning position; or (iii) they might initiate self-employment while maintaining a wage-earning position. Individuals in this third category we classify as "combiners" (See the methods section for further definitions). We outline a systematic overview of different motivations to become combiners.

2.1 Raise economic, social, or psychological utility

A rationale for combining might be to increase economic or psychological utility that supersedes that which an individual can achieve by focusing solely on wage-earning positions or self-employment. We call this the *Supplemental Utility Motivation*. One obvious explanation why individuals might combine self-employment with a wage position is to gain a new source of income. Since self-employed earn considerably less than a person with a similar background and a similar job as an employee (Hamilton, 2000), there are reasons to doubt that extra income is an important explanation why a person would prefer a second income through self-employment over another wage earning position. A possible exception might be that the lower average income from

self-employment is offset by the possibility to evade taxes, which could tempt individuals to combine wage work and self-employment (Henrekson, 2005; Schuetze, 2002). Self-employed have often worse work conditions, work on average longer hours, and have a socially fragile position (Blanchflower, 2004).

Perhaps a more compelling rationale for why individuals choose self-employment alongside a wage position is to attain the unique non-economic utility that self-employment generates for them, while retaining the stability of a wage position. One of the most robust findings in the literature is that self-employment and entrepreneurship provides individuals with non-pecuniary rewards – i.e. psychological utility (Hamilton, 2000). Specifically, a number of studies show that self-employed in various countries report higher job satisfaction than wage-earners (Blanchflower, 2004; Hundley, 2001). Thus, it may be that self-employment is an attractive "second" job because it offers a more flexible employment alternative, e.g. by allowing individuals to determine the timing, the extent, and the direction of effort they deliver. People that combine self-employment with wage work might be trying to 'get the best of both worlds': They are able to offset some of the risks associated with self-employment by maintaining an outside job, while able to enjoy some of the non-economic benefits of being self-employment.

2.2 Provide a hedge against the potential for unemployment

A second motivation to combine is to hedge against the potential for unemployment, specifically the risk for unemployment due to firm- or industry- specific causes. We call this the *Unemployment Hedge Motivation*.

Individuals may be at risk of losing their wage position due to risks at the firm-level, the industry-level, or the macro-economic level. When employment risk is due to macro-economic downturns or uncertainty the prospects for finding wage work is poor across all sectors of the economy. When employment risk is due to industry specific fluctuations, the possibility to sell one's labor as self-employed might be easier that the possibility to find a second paid job. Gimeno, Folta, Cooper, and Woo (1997) showed that entrepreneurial persistence is determined by both economic performance and individuals' unique threshold for performance. We might expect individuals to lower their performance thresholds and engage in combinatory work even if they are earning less

than before, in order to assure them of some economic stability. Further, Individuals may be drawn to either a second wage-earning position or self-employment as a means to reduce their risk exposure to a single job. In such occasions, combination is likely to offer a refuge where individuals can earn some financial returns while retaining the flexibility to choose whether they want to persist in self-employment or the current paid job.

2.3 Reduce uncertainty associated with entry or exit

A third motivation for wage-earners to initiate self-employment alongside wage work is to consciously facilitate a transition into self-employment. Combination may provide a way for individuals to experiment with self-employment without committing all of their human capital. This strategy would be especially useful if entrepreneurs experience uncertainty about their prospects in self-employment and they can reduce some of this uncertainty by testing their skills. We call this the *Transitional Motivation.*

Specifically, engaging in self-employment while maintaining a wage earning position may provide an individual a real option that takes on considerable value when there is uncertainty surrounding value of the self-employment opportunity. Individuals with industry-specific skills may opt to use self-employment as a means to retrain in another industry. They may lower entry and exit thresholds to gain access to and persist in the new industry so as to assure adequate training. Thus, we might expect combiners who seek to hedge their human capital against industry uncertainty to frequently enter different industries.

Wage earners might also choose to enter in self-employment as a combiner to offset problems associated with the possibility that they will fail as self-employed. Failure is still stigmatized in Europe, and to some degree also in the U.S. (Landier, 2002, Lambrecht and Beens, 2005). Self-employed that have failed often report isolating themselves as they feel that their surrounding have little or no sympathy or understanding for their position (Shepherd, 2003). They might therefore choose to combine in order to insure themselves against a risk of stigmatization. Engaging in waged-work before potentially failing might facilitate their re-entry into the labor market as just former self-employed, rather than as failed self-employed. To conclude: different strand of the literature suggests a number of reasons why combining might an attractive alter-

native and that it may have different determinants than moving directly into self-employment or stay in wage work. Yet, empirical evidence distinguishing these motives is lacking.

3 Data

This study uses matched employee-employer data constructed by Statistics Sweden. The data were provided by Statistics Sweden as part of a large longitudinal study of entrepreneurship between 1989 and 2002 and comes with several benefits: We are able to cover all types of combiners and self-employment independent of the legal form of their business. The long period of observation allows us to reconstruct the labor market history of individuals. Since the data comes from official tax records and have undergone cleaning and updating by Statistics Sweden there are no inferential problems common in survey data.

To decrease heterogeneity we limited the analysis to a restricted number of industries. The sample consists of all individuals that during at least one of the years 1990-2002 were employed or self-employed in the post-industrial sector of Sweden. We focus on the post-industrial sector since prior research indicates that this sector is attributable to much of the rise in self-employment levels since the mid-1970s (Steinmetz and Wright, 1989). The advantage with this design is that we avoid results being overly dependent on the patterns of self-employment found in the agriculture and retail trade industries, which would happen if we would select a random sample of all self-employed (Blanchflower, 2000). Self-employment is a predominant employment form in agriculture and retail trade, and furthermore these sectors are distinct from other industries in that they are characterized by family firms. A complete list of industries is found in appendix 1. In 2002, the post-industrial sector constituted roughly one third of all firms in Sweden and produced 40 percent of the value added in production. We use matched employee-employer databases to sample all *individuals* that during at least one of the years 1990-2002 were employed or self-employed in this sector. We follow these over the whole period 1990-2002. The sample covers over 3,300,000 individuals, representing over 70 percent of the active Swedish active labor market.

3.1 Defining self-employment

Recent work on self-employment highlight the difficulties in comparing previous findings because of the divergent and often inconsistent definitions of self-employment used to categorize individuals (Kim, Aldrich, and Keister, 2006). According to the OECD Economic Outlook (2000), classification of the self-employed varies throughout the OECD countries. In most countries, no separate identification procedure of *incorporated* self-employed takes place. In Belgium, Canada, Hungary, Spain and Switzerland, they are always classified as self-employed. In most other countries, they are 'mainly' classified as self-employed. Three important exceptions exist: In Japan, Australia and the United States, incorporated self-employed are classified as *employees*. Since much of the well cited work on self-employment has been conducted in the United States (Steinmetz and Wright, 1989; Hamilton, 2000), this indicates a reason for the difficulties in comparing studies of self-employment across nations.

Less than 1/3 of the self-employed conduct their business in incorporated firms, yet they are highly overrepresented in terms of earnings, firm survival and growth (Delmar, Hellerstedt and Wennberg, 2006; Holtz-Eakin et al., 1994). Hence it is necessary to investigate to what extent earlier studies distinguish between self-employed with incorporations and those without. A literature review shows that among the 119 most cited studies of self-employment, only the four studies by Bruce (2000), Rees and Shah (1986), Blanchflower (2000), and Hanley (2000) distinguished between the wholly self-employed and the self-employed that also received wages from an employer, and in these cases by excluding the latter group.[1] In other words: no study has of yet investigated people that combine self-employment with employment as a specific group. Further, only 60 studies included small capitalist-entrepreneurs with employees in their definition of self-employed. We also found that several studies coded individuals according to their often self-perceived 'main occupation'. Some studies excluded all persons, both employees and self-employed, that were working part-time. Some studies

[1] The literature review is based on all empirical articles with the key words "self employment" with ten+ citations in the Social Science Citation Index or Google Scholar. We carefully read the sections on data sources and definitions used in the articles, noting whether the study (i) included self-employed with employees, (ii) included self-employed with incorporated firms, and (iii) distinguished between self-employed and persons that combine wage work and self-employment.

excluded self-employed whose income fell below a certain threshold. It is likely that these inconsistent definitions have led to different conclusions in the literature on self-employment (Kim et al., 2006). The detailed information in our database allowed us to use Steinmetz and Wright's (1989) definition of the self-employed as "individuals whose income wholly or partly depends on their own labor, but not by selling that labor for wages" (1989: 979). Thus we exclude passive capitalists, i.e. shareholders that do not participate in the works or management of a firm.

3.2 Identification and measurement of the self-employed

Similarly to Holtz-Eakin and colleagues (1994) in the United States and Giannetti and Simonov (2004) in Sweden, we used tax sheets to identify self-employed entrepreneurs. We identify self-employed or combiners as individuals with taxable income – positive as well as negative – from a firm in which they work and own a significant share (defined by the tax authorities as working more than 300 hours per year). The individual can thus be concurrently employed by another company and simultaneously be running a firm making profit or at a deficit. Including self-employed with firms reporting losses has rarely been done in previous studies, although empirical evidence shows that many entrepreneurs, especially in post-industrial sectors, often accrue expenses during the first period in self-employment before they are able to get orders and receive any income. We differentiate between (i) employees – those receiving 100% of their income from employment, (ii) self-employed, employees – those receiving 100% of their income from self-employment, and (iii) combiners – those with a mixed income, by comparing data on their entrepreneurial earnings with earning from an outside job. Following Statistics Sweden official guide for classifying people as mainly self-employed or employees, we multiplied the income of the unincorporated self-employed with 1.6. The reason for this is that due to higher taxation rates, self-employed tend to underreport their income (See Pissarides and Weber, 1989, for Great Britain, Johansson, 2000, for Finland, Schuetze, 2002, for Canada, and Engström and Holmlund, 2006 for Sweden). Note that we do not distinguish between the *effort* that individuals put in any of these categories. Rather, our categories consider the amount of *income* earned. For example, we consider *wage-earners* as individuals who earn all of their income in wage-earning positions; *self-employed* as those who earn all of their income in self-

employment; and *combiners* as anyone earning income in both wage positions and self-employment.

4 Results

In this section we first describing the relative frequencies of combiners during the period of investigation and compare this with earlier studies. Second, we try to establish the characteristics of people that combines and compare this with wage workers and the fully self-employment. Third, we show the dynamics by which individuals move from wage work to combining or full self-employment, from combining to full self-employment, and vice versa. Fourth, we describe the heterogeneity within the overall group of combiners. Finally, we explore the economic significance of employees, self-employed, and combiners in terms of wages paid to them or drawn from their businesses.

4.1 Establishing the importance of combination

In Table 1 we compare our sample with other data on self-employment. The comparisons range from the beginning of our sample period in 1992, to the end in 2002. What can be noted from this comparison is that rates of self-employment in the Sweden, as well as in the U.S., are relative low compared to the OECD average. It also seems that a large share of self-employed – at least 20 percent – have additional employment. While this is a substantial number, it should be noted that both GEM and PSED figures characterize individuals as fully self-employed if they work 30+ hours a week. As a result, we believe this number under-represents the number of individuals engaged in both wage work and self-employment.

Table 1 Rates of self-employment relative to wage work.

Overall figures on self-employment	1992	2002
Rate of self-employment in OECD Countries (OECD)	11.20%	14.10%
Rate of self-employment in the United States (OECD)	8.60%	7.20%
Rate of self-employment in Swedish Population (Statistics Sweden)	7.40%	6.95%
Rate of self-employment in Swedish Population (OECD)	8.80%	9.70%
Rate of self-employment in Swedish Post-industrial Sectors	6.65%	9.66%
Available data on combining employment and self-employment		
Self-employed 'holding an outside job' (Global Entrepreneurship Monitor 2003)	N/A	20-30% *
Nascent entrepreneurs 'holding an outside job' (PSED 1998)	N/A	20% **
This study		
Reporting only wage-earning income	82.59%	83.32%
Not working (unemployed / retired / out of the labor force)	10.77%	8.61%
Reporting only self-employment income	1.77%	2.40%
- from proprietorships or partnerships	0.48%	1.37%
- from incorporations	1.29%	1.03%
Reporting income from both self-employment and wage work.	4.88%	5.65%
- self-employment in proprietorship / partnership and wage work	3.87%	4.98%
- self-employment in incorporation and wage work	1.01%	0.67%

Note: * Data from 2003, ** Data from 1998

The data displayed in Table 1 suggests that the Swedish post-industrial sector is overwhelmingly represented by individuals earning all their income in wage work, 83 percent of the population in 1992. Only 1.77(2.40) percent of Swedes working in the post-industrial sectors earned all of their income from self-employment in 1992(2002). This compares to 4.88(4.65) percent of all people who report income from both self-employment and wage work in 1992(2002). Thus, combiners are 2.75(2.35) times more common than the fully self-employment in 1992(2002). We should note that prior literature would tend to treat these combiners as either self-employed or wage earners. Table 1 also indicates that the majority of combiners earn their income in partnerships or proprietorships whereas income from incorporations is more frequent for the pure self-employed. Finally, it seems that 2002 offered better economic conditions than 1992, with a 2 percent reduction in the number of persons outside the work force. The combiners and self-employed group thus grew more than the wage earning group in the period.

4.2 Establishing the characteristics of combiners

Table 2 shows frequencies of persons that are employed, self employed, or combiners. Some results are worth highlighting: A little more than two-thirds of all fully self-employed are men, consistent with prior research. This should be compared to combiners where half of the group is women.

Table 2 Description of employees, combiners and self-employed.

	Employees	Combiners	Self-employed	Sign. diff
Gender				
Male	45.57%	50.39%	68.09%	P < 0.001
Female	54.43%	49.61%	31.91%	
Age				
18-24 yrs	10.31%	2.03%	1.12%	P < 0.001
25-34 yrs	26.06%	16.20%	10.29%	
35-44 yrs	25.07%	29.11%	25.40%	
45-54 yrs	25.00%	35.33%	39.14%	
< 55 yrs	13.56%	17.34%	24.06%	
Education				
Primary	13.43%	9.99%	13.08%	P < 0.001
Secondary	39.64%	31.46%	23.28%	
Some college	25.15%	23.86%	30.31%	
College degree	21.78%	34.70%	33.33%	
Marital status				
Single	38.92%	26.98%	25.95%	P < 0.001
Co-habitation/ Married	61.08%	73.02%	74.05%	
Mean (s.d.) number of children in household				
-6 yrs	0.30(0.63)	0.28(0.61)	0.24(0.60)	Not Appl.
7-15 yrs	0.40(0.74)	0.50(0.82)	0.43(0.86)	
15- yrs	0.32(0.62)	0.39(0.67)	0.36(0.64)	
Regional affiliation				
Stockholm	35,46%	34,69%	44,53%	P < 0.001
Greater cities	17,33%	16,36%	13,19%	
Rest of Sweden	47,20%	48,95%	42,28%	
Some unemployment during the past year				
	13.01%	7.95%	4.61%	P < 0.001
Tenure at main workplace				
1 yr	20.79%	25.79%	15.04%	P 0.001
2-3 yrs	20.58%	20.35%	22.74%	
4-5 yrs	14.97%	14.50%	16.28%	
6-7 yrs	9.85%	11.26%	12.31%	
8 yrs or more	33.81%	28.10%	33.62%	

Note: Frequencies refer to proportion of persons in each category (i.e. column), and are averaged across the years 1997-2001. Chi-2 tests of likelihood-ratio type, group differences are significant in all years. Yearly sample varies somewhat as people switch to and from combiner status in post-industrial sectors, average yearly sample size: 61,976.

Thus, it seems that combining self-employment with wage work is a more attractive alternative for women in the post-industrial sector than engaging only in self-employment. There are also significant differences in the ages of individuals choosing among these categories. Combiners are on average significantly younger than the fully self-employed. 63.20 percent of all self-employed are over forty-four years of age, whereas

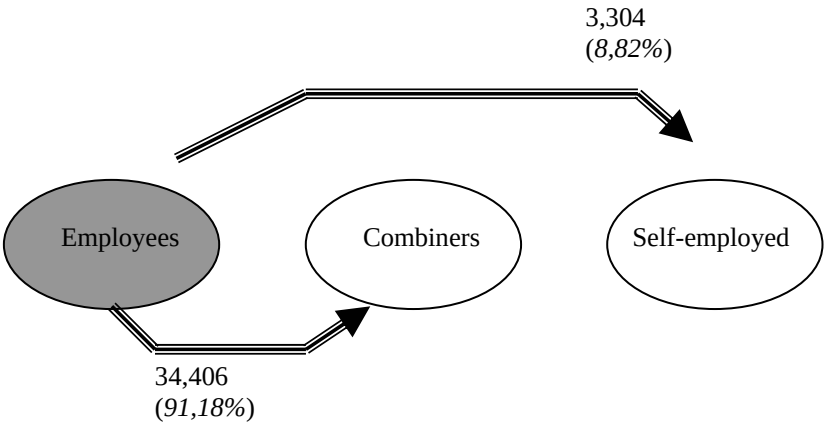
only 52.76 percent of combiners are over this age. The largest differences seem to be in the 25-34 age range, where combiners are far more common, and the 55+ age category, where self-employed are more common. Despite their relative youth, combiners tend to have more children than either wage workers or self-employed. There does not seem to be meaningful differences between the marital status of the self-employed and the combiners, and both of these categories are less likely to be single than wage workers. Examining regional affiliation, we observe some differences. Fully self-employed are over-represented in the Greater Stockholm area (44.53 percent self-employed compared to 35.46 percent of employees), while combiners are to a certain over-represented in the areas outside the large cities (48.95 percent compared 47.20 percent for employees and 42.28 percent for the fully self-employed). Unemployment is much lower among combiners or self-employed, indicating that escaping unemployment conditions may not be a main reason for entering into combination or self-employment. However, prior research suggest that there might be non-linear effects in that both people with disadvantaged or a strong labor market position might be more prone to engage in self-employment. Finally, both combiners and self-employed seem to have short tenure at the same workplace, suggesting that these two groups can be characterized as "job-hoppers". Women, individuals with children, people living outside the large cities, and recently started a work, but have not been to large degree unemployed seem to characterize the combiners.

4.3 Establishing the dynamics of combiners

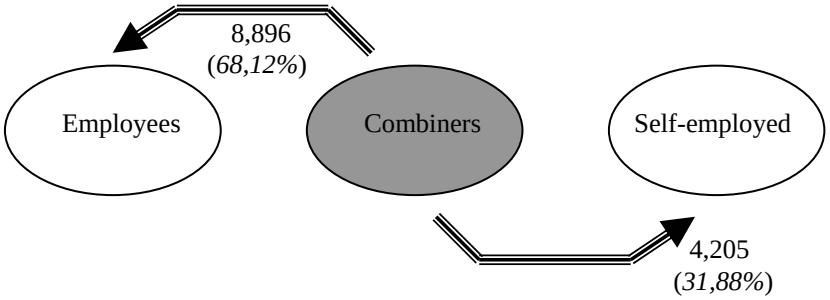
To better understand the dynamics of self-employment decisions we tracked movements across these various categories. Figure 1 display the average transitions over the course of two years between the three different labor market statuses: wage work, combination, or full self-employment. We focus on the three questions: (i) What happens with those who leave wage work? (ii) Where do those who enter full self-employment come from? and (iii) What happens with those who leave combination?

Figure 1 Transitions between employment categories

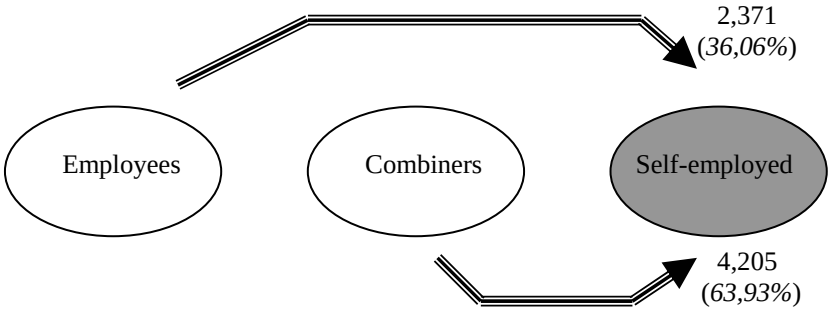
1a The destination of people leaving employment



1b The destination of people leaving combination



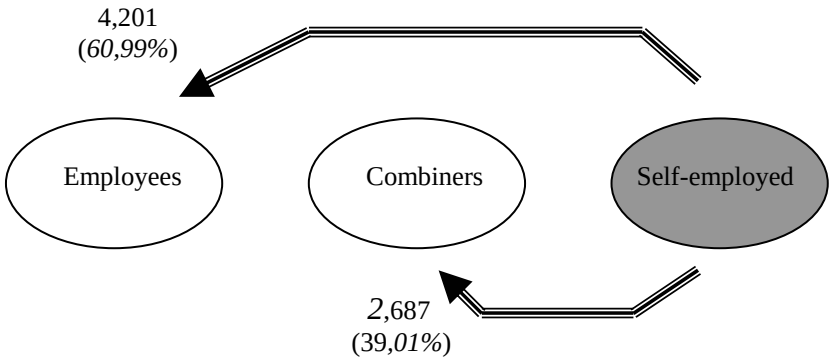
1c The origin of people entering self-employment



Note: We use two-year transitions since most individuals transfer during the calendar year and using yearly transitions would thus overestimate the figure for combiners. Instead we count the number of persons who moves from employment in, for instance, 1997 to combination in 1998 *and* throughout 1999. We compare this number to the number of persons who move from employment in 1997 to combination in 1998 and then to full self-employment in 1999. One-year transitions show similar results

Figure 1 Cont'ed Transitions between employment categories

1d The destination of people leaving self-employment



Section (**a**) in Figure 1 show the destination of those that leave paid employment. We find that the overwhelming majority (91.18 percent) transfer to combination rather than to full self-employment. This is a substantial figure, clearly indicating that the decision to move from employment to self-employment is more complex than it has been characterized in earlier research. One could believe from a glance at section (**a**) that only a trickle of those entering self-employment do so directly from employment. This is not necessarily the case if most combiners move back and forth from employment rather than using it as a transitory stage between employment and full self-employment.

Section (**b**) in Figure 1 shows the destination of all people leaving combination. More than two-thirds (68.12 percent) leaves back to employment rather than to full self-employment, indicating that combiners are a very dynamic labor market group. Section (**c**) in Figure 1 shows the origin of those that enter into full self-employment. Somewhat less than two thirds (63.93 percent) enter from combination while one third enters directly from employment. The large flows from employment to combination (1a) and from combination to self-employment (1b) indicate a logic for the proposed transitional reasons to enter as combiners to reduce the uncertainty associated with entering self-employment. However, we also discussed the possibility that self-employed might prefer transition from self-employment to combination in order to offset negative impacts from self-employment such as a failing firm. Section (**d**) in Figure 1 shows that among those leaving self-employment, 61 percent leave to employment whereas 39

percent leave to combiner status. These figures indicate that also the decision to leave self-employment is more complex than it has been characterized in earlier research.

4.4 The distribution of self-employment income

Figure 2 shows the distribution of people having a mix of income from employment and from self-employment. We observe an S-shaped curve of the distribution of individuals that have positive self-employment income. Most combiners have a low *or* a very high percentage of income from self-employment.

Figure 2 Points of transition from employment to combination to self-employment.

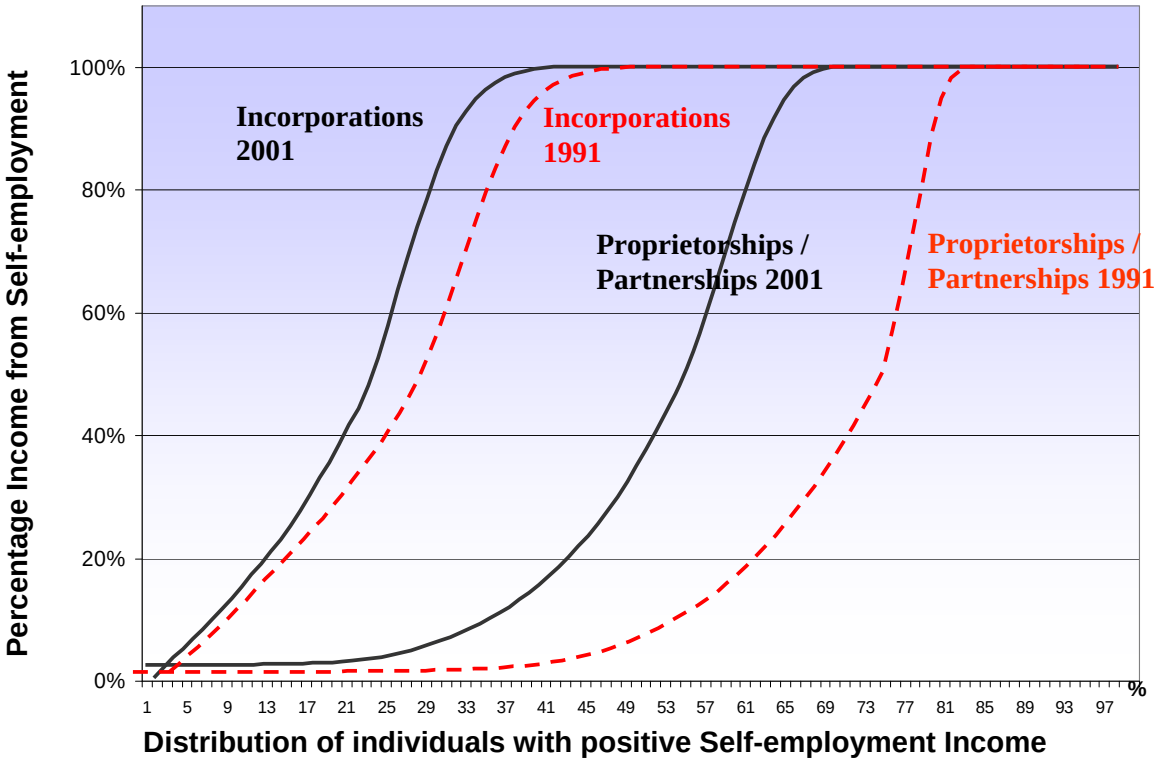


Figure 2 show that roughly a third of all combiners only have a miniscule income from self-employment. We do not know of these are some type of tax shelters or very early attempts to enter self-employment. However, prior research have suggested that individuals do not pursue self-employment solely for potential tax incentives but that other non-pecuniary reasons are at least as important (Parker, 2003). Roughly a third of all combiners have something between 10 and 90 percent income from self-

employment, but there is tremendous variation within then income distribution of this group. This is probably the most important group of combiners. Specifically, the percentage of combiners with income from both sources is lowest when self-employment income ranges between 45 and 65 percent. This may suggest that either few persons has the skills and interest required to have equal shares of income from both sources, or that there might be legal or economic incentives encouraging a person to rely primarily on income from either employment or self-employment.

The last third of all combiners have almost all of their income in self-employment. Since there might be different behavior and motivations of persons that combine employment with self-employment to different extents, we will now specifically focus on the combiners and describe the extent to which they are combining the two different sources of income, and the patterns associated with persons combining at different degrees.

Figure 2 also reveals that the levels where people choose level of combination have changed over the years of study. The distance between the bold lines (denoting 1991) and the dotted lines (denoting 2001) show that the proportion of combiners with a low level of self-employment income increased during the period, especially among combiners in proprietorships or partnerships (the two lines to the right). This indicate that the income distribution are clearly also dependent on the legal form of self-employment used. Perhaps one explanation for the increase in 'meager combiners' in proprietorships or partnerships can be that the amount required for incorporating a firm increased from 50,000 Swedish krona to 100,000 in 1994.

In Table 3 we investigate all combiners based on the relative extent to which they are combining income from employment and self-employment. Figure 2 indicted that there seem to exist three main groups of combiners, one with very little income from self-employment, one very heterogeneous group with between 10 and 90 percent income from self-employment, and one group with more than 90 percent income from self-employment. We divide all combiners into four sub-groups based on the income distribution indicated in Figure 2, splitting the large "middle group" into two equally large groups in terms of relative income.

Table 3 Level of combination.

	1 to 10%	11 to 50%	51 to 90%	91 to 99%	Sign. diff
Share	51.20%	27.00%	11.15%	10.65%	Not Appl.
Gender					P < 0.001
Male	47.66%	38.76%	58.50%	68.63%	
Female	52.34%	61.24%	41.50%	31.37%	
Age					P < 0.001
18-24 yrs	1.98%	2.00%	2.88%	1.50%	
25-34 yrs	15.75%	14.72%	18.03%	12.74%	
35-44 yrs	28.54%	30.74%	27.89%	24.99%	
45-54 yrs	35.65%	36.58%	33.10%	39.15%	
< 55 yrs	18.08%	15.95%	18.09%	21.61%	
Education					P < 0.001
Primary	9.00%	10.81%	9.93%	9.03%	
Secondary	30.83%	35.82%	26.20%	22.90%	
Some college	22.72%	20.35%	26.57%	25.72%	
College / University degree	37.45%	33.02%	37.30%	42.35%	
Marital status					P < 0.001
Single	26.95%	21.52%	29.93%	28.75%	
Co-habitation/ Married	73.05%	78.48%	70.07%	71.25%	
Mean (s.d.) number of children in household					Not Appl.
-6 yrs	0.27 (0.60)	0.28 (0.60)	0.29 (0.64)	0.24 (0.47)	
7-15 yrs	0.49 (0.81)	0.54 (0.84)	0.46 (0.81)	0.46 (0.80)	
15- yrs	0.40 (0.67)	0.43 (0.69)	0.37 (0.66)	0.37 (0.65)	
Some unemployment during the past year	5.94%	7.60%	12.58%	6.26%	P < 0.001
Tenure at main workplace					P < 0.001
1 yr	19.56%	33.07%	55.28%	22.48%	
2-3 yrs	19.76%	19.91%	19.93%	23.95%	
4-5 yrs	14.82%	12.56%	8.41%	15.68%	
6-7 yrs	11.94%	12.52%	5.79%	11.48%	
8 yrs or more	33.92%	21.94%	10.59%	26.42%	

Note: Frequencies refer to proportion of persons in each category (i.e. column) and are averaged across 1997-2001. Chi-2 tests of likelihood-ratio type for group differences. Yearly sample varies somewhat as people switch to and from combiner status in post-industrial sectors, average yearly sample size: 61,976.

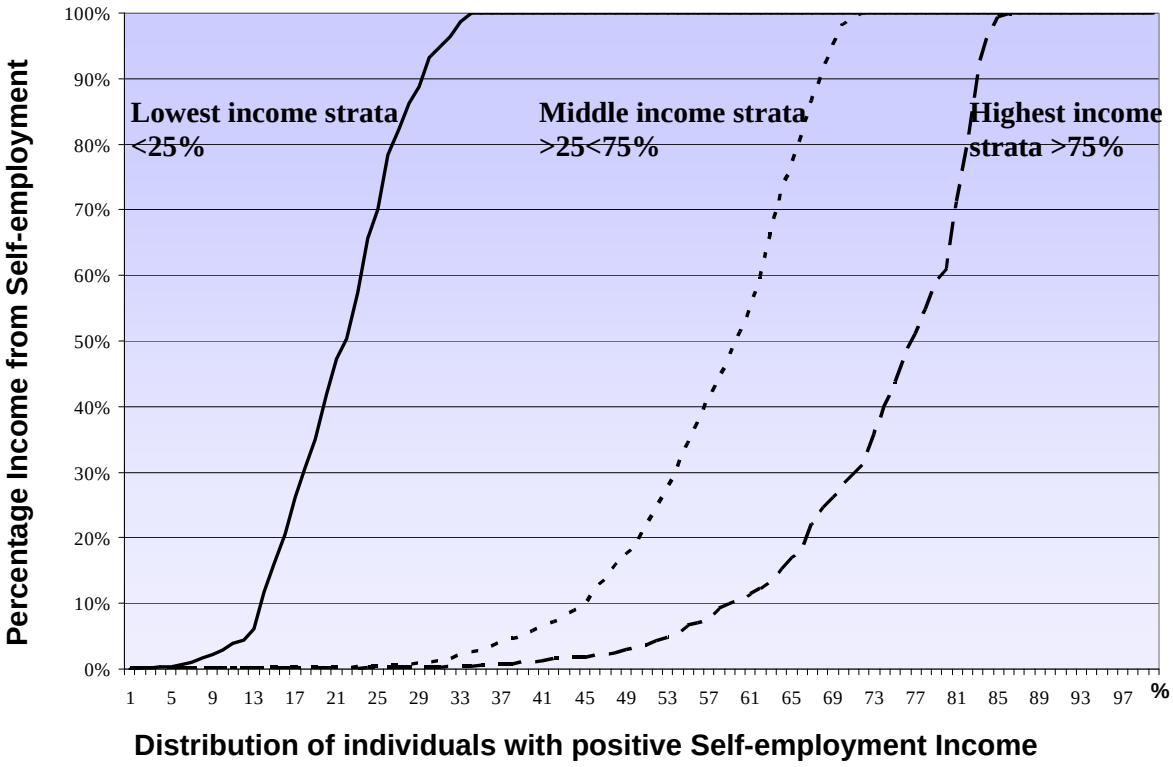
Table 3 reveals that men are over-represented in the two categories that receive between 51 and 99 percent of their earning from self-employment. Similarly, women are over-represented in the lower two of the four categories. This might indicate two things. First, since men are also more likely to be fully self-employed, they may use combinatory work as a pathway into self-employment. Second, many women combine employment with a small proportion of self-employment. Perhaps this allows them to gain some of the flexibility and other non-pecuniary benefits of self-employment. In regards to age cohort, marriage status or number of children, there are only small differences between the four groups of combiners. Also in educational terms there are small differ-

ences, except for the interesting fact that highly educated, persons are overrepresented in the "top" group of combiners whose total income consist of more than 90 percent of self-employment income. Shorter workplace tenure and recent unemployment is more common among the two "middle groups" of combiners, i.e. those who rely on both sources of income to a large extent. This indicates the dynamics of these two middle groups of combiners as they switch between workplaces, compared to those that combine to a large or a small degree.

4.5 Income class and combination

Our last analysis of the pathways that might lead people to combine wage work and self-employment concerns the role of class. Previous work on self-employment indicates that people with little income or top wage earners are more likely to enter self-employment. To ascertain if this is also the case among combiners we again plot the income distribution of combiners but now based on three income strata: (i) the low income group consisting of people at or below the 25^{th} percentile of total earnings, (ii) the middle group between the 25^{th} and 75^{th} percentile of total earnings (iii) the high income group above the 75^{th} percentile of total earnings. The distance between the three lines denoting low, middle, and high income stratum in this plot (Figure 3) shows that proportion of combiners in the low income strata who rely predominantly on income from self-employment is much higher than in the middle or higher income stratum. While more than two-thirds of the low income combiners rely primarily on self-employment income, only a third of the middle income stratum and less than one-fifth of the high income stratum receive most of their income from self-employment. Further, we can see that the slope of the line is steeper for the low income strata compared to the middle and high income stratum. This means that fewer low income persons rely on *both* wage income to a significant degree compared to combiners in the middle and high income stratum. This indicates that the possibility to combine increases with income, perhaps due to socio-economic or legal structures.

Figure 3 Income Strata and transition employment to combination to self-employment.



4.6 Economic significance

In Table 4 we display the income generated by wage employees, combiners and the fully self-employed. We use income as an indicator of economic significance for a very simple reason. The more a person earn, the higher is her ability to save money or to consume. Total earning in a society is a strong indicator of contribution to economic output.

Table 4 Economic significance of combiners.

	Employees	Combiners	Full Self-employed	Test of sign. diff.
Income(Swedish krona)				
Mean	181,111	205,285	191,555	Pr < F: 0.001
Median	170,098	186,457	180,988	
Standard deviation	143,868	243,396	179,636	
Total income levels				Pr< Chi2: 0.001
0-20%	20,29%	13,77%	23,46%	
21-40%	20,15%	18,46%	17,19%	
41-60%	20,43%	15,90%	11,85%	
61-80%	19,99%	20,51%	19,26%	
81-100%	19,14%	31,37%	28,23%	
Some unemployment during past year				
	13.01%	7.95%	4.61%	Pr< Chi2: 0.001
Under poverty line				Pr< Chi2: 0.001
Yes	20.00%	17.07%	23.41%	
Wealth (individual)				Pr< Chi2: 0.001
Yes	6.16%	13.68%	17.37%	
Wealth (household)				Pr< Chi2: 0.001
Yes	6.34%	14.08%	18.17%	

Note: F-tests from one-way ANOVA based on unequal variance, Chi-2 tests of likelihood-ratio type. Frequencies are averaged across 1997-2001. Yearly sample varies somewhat as people transition to and from the active labor market in postindustrial sectors. Average yearly sample size: 1,565,367. "Under poverty line" refers to individual income, while official classifications are based on household income.

From Table 4, we can conclude that on average combiners earn more (but with a high standard deviation) than the two other groups. The median is also higher. Combiners earn on average 7.2% more than self-employed and 12.9% per cent more than employees. Under the paragraph "total income levels" we show the proportion of employees, combiners, and self-employed within five equally large income stratum in the population of people working in the post-industrial sector. It is clear from this paragraph that the fully self-employed are overrepresented both among the lowest earners and among the highest earners. This is consistent with prior research on self-employment. However, we find that combiners are underrepresented among the lowest earners, but even more common among high income earners than the fully self-employed. As a group, combiners generally have less unemployment than employees, but we know from the

prior Table 3 that the variation in unemployment is high among combiners. Finally, we show in Table 4 wealth and poverty levels, finding that combiners are less likely than employees or self-employed to be under the poverty level. Self-employed are more likely to be found among the poor and among the wealthy.

5 Discussion

In this paper we have investigated the combination of employment and self-employment. We believe this to be an important but overlooked subject in economics and other social sciences and that the possibility for people to combine wage work with self-employment offers a number of important advantages, including the ability to offset risks associated with potential unemployment, to increase personal utility, and to ease the transition between wage work and self-employment. We have demonstrated that combination plays an important economic role. We believe that theories of self-employment are incomplete if they do not bring in the role of combination into their arguments.

In this report we investigated the differences among employees, combiners and self-employed. We found that men are more likely to be found among combiners that rely primarily on self-employment income while women are primarily found among combiners that rely primarily on income from wage employment. In addition, women with children are heavily overrepresented among combiners compared to the self-employed. This indicates that different mechanisms may be at work among men who combine wage employment with self-employment than among women who do the same: For men, combinatory work might work as an uncertainty reducing strategy to facilitate transition into self-employment. For women, combinatory work might offer a way for to gain the non-pecuniary of self-employment such as flexibility, while also maintaining some of the security that comes with wage employment.

In this report we also investigated to what level people are able to combine employment with self-employment. We found that combination has become increasingly present on the Swedish labor market that we investigate, and that combiners have increased their relative share of self-employment income. In general, few people have a

high share of both wage and self-employment income. We could also see that combiners in the lowest income strata were more likely to rely primarily on self-employment income than those in the higher strata. The figures describing transitions between the employment, combiner, and self-employment status showed that most people enter self-employment by transferring first to combination, indicating that the decision to move to self-employment is more complex than characterized in earlier research.

Finally, the report explored the economic significance of combiners. They represent 5.65 percent of our population compared to the 2.40 percent fully self-employed. We found that as a group, combiners have higher incomes than both self-employed and employees (7.2 and 12.9 percent, respectively), and that they are less likely to be under the poverty line than both employees and self-employed. They are also somewhat younger and less likely to be wealthy than the self-employed. Hence, as a group they are relatively large and they have on average a strong earning potential. In itself, the empirical frequency of this type of work indicate that the exclusion of combiners from the literature is as important for research on self-employment and entrepreneurship as Rotchford and Roberts (1982) claim that part-time workers were "missing" from organization research. The exploratory results in this paper should indicate that this group is worthy further investigation from a number of perspectives.

5.1 Conclusions and limitations

In this paper we have investigated how people combine wage employment and self-employment, and how such processes evolve over time. We have proposed three rationales that may facilitate our understanding of the role of combiners in society and in the economy. We have proposed that combination might be interesting because it allows individuals to increase economic or psychic income to a level which supersedes that which an individual can achieve by focusing on only either employment or self-employment. We have also proposed that combination provides a hedge against potential unemployment. Finally, we have proposed that combination can reduce the uncertainty associated with a transition to or from self-employment. More work is needed to test the validity of each of these rationales, including the use of multivariate analysis,

and to carefully discern among them. Moreover, theorists might consider additional rationales for engaging in combinatory work.

Given the lack of earlier evidence on combining self-employment and employment, this study is explorative in nature. Our conclusions are by nature therefore tentative, while also hinting at interesting pathways for future research. We have put forward some theoretical motivations that might be important reasons for people the combine. The explorative analyses indicate that explanations may not to be mutually exclusive, as different groups use the tool of combination in different ways. Combination could be a way to supplement an employment wage, especially for women or for people with a weaker-than-average or stronger-than-average labor market position. Combination could also be a way to reduce the uncertainty of transitioning into full self-employment, especially for men or for those with a relatively stronger labor market position. Combining can also be used for the fully self-employed to transit out from that position, perhaps to avoid the stigma associated with entrepreneurial failure. The empirical findings suggest that theoretically motivated hypotheses related to e.g. occupational theories of work and gender, economical theories of personal income optimization, or managerial theories of choice under uncertainty might be used to generate testable theoretical propositions based on the empirical patterns discovered in this study.

The main limitation is that we cannot generalize beyond that of the post-industrial sector. While we believe that the strong patterns of combinatory work discovered in this study of over 3,300,000 Swedes should be evident also in other countries and sectors, it is possible that the nature of combinatory work is particularly suitable for the post-industrial sectors that we investigate, but less suitable in traditional sectors. Furthermore, we have not yet investigated the more fine-grained patterns that might emerge when looking at combiners in different particular industries within the post-industrial sector, such as technology intensive versus service intensive industries. One additional limitation is that when defining different types of combiners we consider actual income from wage employment and self-employment, respectively. It is of course plausible that two persons with equal share of income from both sources should rather be identified as belonging to one or the other based on working hours or their personal work identity. In further studies we therefore plan to collect information on actual working hours. This

will shed light on whether our conceptualization of combiners based on relative earning is indicative of where people spend their actual effort.

On a general note, the patterns of combinatory work and self-employment outlined in this paper support the conclusions of recent studies in different countries that self-employment as a phenomenon is becoming much more heterogeneous than just a few decades ago (Arum and Muller, 2004; Parker, 1997). This study suggests that one explanation of this increasing heterogeneity might be the fact that people combine employment and self-employment much more frequently than before. The increasing availability of high-quality longitudinal databases in various countries offers important opportunities to unearth if and how the processes of self-employment might have changed during past years.

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Appendix 1: Industries in the post-industrial sector

SIC-Equivalent code	Description
24410	Manufacturing of pharmaceutical base products
24420	Manufacturing of pharmaceuticals and drugs
24650	Manufacturing of recording material
29402	Manufacturing of welding and soldering equipment
29600	Manufacturing of weapons and ammunition
30010	Manufacturing of office equipment
30020	Manufacturing of computers and other information processing equipment
31100	Manufacturing of electric motors, generators and transformers
31200	Manufacturing of electricity distribution and control apparatus
31300	Manufacturing of insulated wire and cable
31400	Manufacturing of accumulators, primary cells and primary batteries
31610	Manufacturing of electrical equipment for engines and vehicles n.e.c.
31620	Manufacturing of other electrical equipment n.e.c.
32100	Manufacturing of electronic valves and tubes and other electronic components
32200	Manufacturing of television and radio transmitters and apparatus for telephony
32300	Manufacturing of television and radio receivers, sound or video recording
33101	Manufacturing of medical and surgical equipment and orthopedic appliances
33102	Manufacturing of artificial teeth, dentures, dental plates etc.
33200	Manufacturing of instruments and appliances for measuring, testing, navigating
33300	Manufacturing of industrial process control equipment
33400	Manufacturing of optical instruments and photographic equipment
33500	Watch manufacturing
35300	Manufacturing of aircraft and spacecraft
64201	Network operation
64202	Radio and television broadcast operation
64203	Cable television operation
65110	Banking
65120	Other monetary intermediation
65210	Financial leasing
65220	Other credit granting
65231	Investment trust activities
65232	Unit trust activities
66011	Unit link insurance
66012	Other life insurance
66020	Pension funding
66030	Non-life insurance
67110	Administration of financial markets
67120	Security broking and fund management
67130	Activities auxiliary to financial intermediation n.e.c.
67201	Insurance broking
67202	Other activities auxiliary to insurance and pension funding
70110	Development and selling of real estate
70120	Buying and selling of own real estate
70202	Letting of industrial premises
70203	Letting of other premises
70204	Property management of tenant-ownership association

70209 Letting of other property
70321 Management activities of national cooperative building societies
70329 Other management of real estate on a fee or contract basis
72100 Hardware consultancy
72201 Other software consultancy and supply
72202 Publishing of software
72300 Data processing
72400 Data base activities
72600 Other computer related activities
73101 Research and development on natural sciences
73102 Research and development on engineering and technology
73103 Research and development on medical and pharmaceutical sciences
73104 Research and development on agricultural sciences
73105 Interdisciplinary research and development, natural sciences / engineering
73201 Research and development on social sciences
73202 Research and development on humanities
73203 Interdisciplinary research and development, social sciences / humanities
74111 Legal advisory and representation activities
74112 Advisory activities concerning patents and copyrights
74120 Accounting, book-keeping and auditing activities; tax consultancy
74130 Market research and public opinion polling
74140 Business and management consultancy activities
74150 Management activities of holding companies
74201 Architectural activities
74202 Construction and other engineering activities
74300 Technical testing and analysis
74401 Advertisement agency activities
74402 Advertisement placement activities
74403 Delivery of advertising material
74409 Other advertising activities
74841 Graphical design
74842 Other design activities
74843 Debt collecting and credit rating activities
74844 Exhibition, trade fair, congress and day conference activities
74849 Various other business activities
80309 Education services
85110 Closed health care institutions
85120 Open health care institutions
85130 Dental care
85140 Other human health activities
85200 Veterinary activities
92110 Motion picture and video production
92120 Motion picture and video distribution
92130 Motion picture projection
92200 Radio and television activities
92310 Artistic and literary creation and interpretation
92320 Operation of arts facilities
92340 Other entertainment activities n.e.c.
92400 News agency activities

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