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Did Economic Globalization
Destabilize Careers?
Evidence from Germany

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Abstract

In this article, we analyze the impact of economic globalization on the turbulence of early work careers in Germany. We conceptualize turbulence as the absolute number of employer changes, the predictability of the order of jobs, and the variability of the durations spent in different employment states. Results from empirical analyses based on the German Life History Study (N = 5,432) show that – contrary to what is often implicitly assumed in careers research – there has been only a small increase in the turbulence of work careers over the last decades. Early work careers became slightly more dynamic for individuals born in the 1930s and 1940s, but for individuals born in the 1950s onwards, there are no significant differences in the turbulence across the cohorts. Additionally, we find no evidence that industry-specific economic globalization influences the turbulence of work careers. We conclude that researchers should consider the relative stability of careers and that the impact of globalization on work careers might be overestimated.

Key words: careers research, globalization, sequence analysis, turbulence

The last decades were characterized by a substantial globalization of the world economy (United Nations 2008). Worldwide competition and a growing need for corporations to internationalize production and sales activities led to new strategies and organizational forms to meet the demands of the rapidly changing environment (e.g. Miles & Snow 1986; Romanelli 1991). At the same time, there has been an increase in labor market flexibility and non-standardized work (Brodsky 1994), the impact of internal labor markets to shape work careers has diminished (O'Mahony & Bechky 2006), and new career concepts emerged that consider the individual – and no longer the organization – as the director of work careers (Arthur & Rousseau 1996). Very often, a link between these two developments is implicitly assumed in that a globalized economy inevitably impacts the dynamic of work careers (Smith 1997; Spilerman 2008). However, until now there is no persuasive empirical evidence that economic globalization causes the potentially increasing turbulence in work careers.

The objective of this study is to empirically analyze the impact of economic globalization in different industries on work careers of individuals. By following this approach, this paper makes several contributions to the careers literature. First, we directly link the degree of turbulence in careers to the extent of economic globalization in the industries in which these careers unfold. Second, we apply methodological innovations in sequence analysis by assessing the turbulence of careers with a newly developed measurement approach (Elzinga & Liefbroer 2007).

Gaining knowledge on the impact of economic globalization on work careers is important for several reasons. On the individual level, this relationship has to be considered in career planning, for example to assess the usefulness of international experience in the industry in which the individual is currently working (Ng et al. 2007).

For organizations, changes in the competitive environment and their effect on organization's human resource planning and skill development must be integrated in a sound strategic human resource management (e.g. Anderson et al. 1981). On a societal level, a better understanding of the effects of economic globalization on careers is important for policy makers to adjust economic and labor market policies (Boyer & Drache 1996).

The remainder of this article is organized as follows. In the next section, we integrate globalization into a broader framework of careers research and discuss changes in employment settings towards more turbulent careers. Subsequently, we establish a link between industry-specific globalization and its impact on work careers. Then, we describe the methods and results of the empirical study with a focus on measuring the turbulence of work careers. Finally, we discuss the implications of the empirical analyses and specify limitations to our research.

Micro- and Macro-Frame of Reference in Careers Research

Careers, defined as the evolving sequence of a person's work experiences over time (Arthur et al. 1989; Higgins 2001), have been studied by scholars from various disciplines, including psychology, sociology, anthropology, labor economics, and organizational behavior (e.g. Hall 1976; Van Maanen 1977; Arthur et al. 1989). These disciplines all share the perspective that careers are evolving “[a]t the intersection of societal history and individual biography” (Grandjean 1981:1057). This intertwined relationship between individual (micro-frame) and context (macro-frame) grounds the two levels at which careers can be studied (Anderson et al. 1981; Gunz 1989; O’Mahony & Bechky 2006). Micro-level research rests upon the assumption that individual

differences account for diverging job choices and career success. A vast amount of literature has investigated how variables such as career anchors (Schein 1978), career orientations (e.g. Derr 1988), social capital (e.g. Seibert et al. 2001), work values (e.g. Judge & Bretz 1992), personality (e.g. Zimmermann 2008), and gender (e.g. Lyness & Thompson 2000) influence career decision making, individuals' careers, and career success (Rosenfeld 1992).

The macro-level domain, in contrast, puts a focus on context or structural variables describing the environment in which careers unfold. Structural determinants of careers can be broadly categorized into societal, industry, and economical factors (see Ng et al. 2007). Examples of *societal characteristics* that can impact career trajectories are public policies (e.g. DiPrete et al. 1997), governmental constraints (e.g. Abbott & Smith 1984), culture (e.g. Schein 1984), technological developments (e.g. Coovert 1995), and the legal environment (e.g. Anderson et al. 1981). *Industry differences* can affect career ladders, job rewards, or employment relationships (Rosenfeld 1992). Influential variables at the industry level are gender composition of the industry, wage level, labor intensity, and industry growth (Ng et al. 2007). *Economic conditions* partly determine the environment in which organizations compete. In growing economies, for example, organizations can expand and various new career opportunities emerge (Blossfeld 1986). Economic globalization also belongs to this category and is generally seen as a major environmental factor that might shape work careers.

Overall, careers researchers recognize the high relevance of environmental factors. However, there has been a heavy emphasis on individual determinants, although macroeconomic factors very often implicitly constitute the basis of contemporary career theories without being explicitly modeled (Arthur & Lawrence 1984; Arthur et al. 2005).

Basically, there are several underlying assumptions in traditional career theory that are no longer reflected in today's environment – i.e., large, stable organizations in stable environments with a focus on intraorganizational and upward mobility (Arthur & Rousseau 1996; O'Mahony & Bechky 2006). Globalization, technological advancements, and new organizational structures and forms are assumed to be the main forces of change that have altered work careers since the early 1980's (Smith 1997; Sullivan 1999). In order to account theoretically for the new setting in which careers proceed, a *boundaryless* model of the work environment has been introduced. This model is characterized by discontinuous job sequences in several organizations, with individual actors becoming the managers of their own career (Arthur & Rousseau 1996; Sullivan 1999; Higgins 2001). Besides the boundaryless career, other new concepts, such as the protean career (e.g. Hall & Moss 1998), post-corporate careers (Peiperl & Baruch 1997), career resilient work force (Waterman et al. 1984), and career fields (Iellatchitch et al. 2003) were developed in response to environmental changes and their impact on work careers. There are two underlying premises in virtually all new career concepts. First, the concepts assume that the dynamic of careers has increased during the last decades. Second, globalization is seen as one of the macro-level trends that led to significant changes towards new career forms. Empirical evidence, however, has lagged behind the proliferation of these arguments in the theoretical debate on careers. In the following, we provide an assessment of the trend towards more dynamic, turbulent careers in general and then turn towards economic globalization as one of the major forces of career turbulence.

Changes in Employment Settings towards More Turbulent Careers

There is a widespread perception that environmental changes have had significant consequences for individuals' work careers (Mills et al. 2006). These arguments mostly center on an increase in nonstandard employment settings and eroding job stability. *Nonstandard employment* refers to "employment relations that depart from standard work arrangements in which it was generally expected that work was done full-time, would continue indefinitely, and was performed at the employer's place of business under the employer's direction" (Kalleberg 2000:341). The amount of part-time work and short-term employment, as the most important examples of nonstandard employment relations, grew in most industrialized countries, accompanied by the expansion of the service sector and an increasing percentage of women in the work force (e.g. Schömann et al. 1998; Connelly & Gallagher 2004). However, *job stability* and organizational tenure decreased only slightly during the last decades in most industrialized countries (Auer & Cazes 2003). In Germany, for example, Winkelmann and Zimmermann (1998) did not find any evidence that job stability was decreasing at all in the period between 1974 and 1994.

In sum, there has been a shift in the structure of labor markets, but these changes have apparently not been as radical as is often perceived (Jacoby 1999). Conceptually, these findings were derived in job mobility studies, which look at transition rates from one job (or firm) to the next. These studies therefore center on a single employment setting at a time, in which single job spells represent the unit of analysis. Careers, on the contrary, are defined as *sequences* of work positions. Consequently, the study of careers requires a broader perspective that includes several work positions (Rosenfeld 1992). It is important to note that the overall dynamic of work careers can increase, although the average organizational tenure and the ratio of nonstandard employment remain the same.

In other words, although the set of job opportunities can remain relatively stable (e.g. ratio of part-time employment), the moves of individuals between these opportunities may become less predictable.

The abovementioned findings should therefore be accompanied by an analysis in which sequences of jobs, not single jobs, represent the unit of analysis. Our approach addresses this research gap. We analyze the turbulence (or dynamic) of sequences of jobs, thereby assessing career instability from a new perspective. Turbulence is defined as an “increasing number of transitions and/or an increasing number of distinct states and/or increasing variation in the timing/duration of events” (Elzinga & Liefbroer 2007:232).

Several shifts in employment settings and the employer-employee relationship support the assumption of increasing turbulence. First, the boundaryless model of the work environment emphasizes a shift of career responsibility from the organization to the individual (Arthur & Rousseau 1996). As a consequence, work careers become less predictable from an objective point of view, because each individual subjectively decides on the further course of the career. This may not directly impact turnover decisions, but instead changes the regularity of subsequent positions. The result would be more chaotic and turbulent careers. Second, changes in work and family values bring traditional forms of labor division between men and women to an end (Lück 2006). This opens new career pathways for women and, at the same time, also influences the stability of men’s careers (Blossfeld and Drobnič 2001). Evidence suggests that younger cohorts of men and women are concerned more by increasing employment insecurity as is most importantly indicated by a higher unemployment risk and weakened re-employment chances (Grunow 2006). In sum, there are several forces that can ultimately lead to more turbulent career patterns. Thus, we assume:

Hypothesis 1: The turbulence of work careers has increased in the last decades.

Industry-Specific Economic Globalization

In the following, we explore the potential impact of economic globalization on work careers in different industries. Organizations are assumed to mediate this relationship. We argue that global industries shape the rules of competition, corporations must adapt to these rules, and this, in turn, results in specific staffing practices and forms of employment in global industries. Ultimately, this translates into changes of work careers (Brodsky 1994; Smith 1997; Kalleberg 2000; O'Mahony & Bechky 2006).

Globalization, broadly defined as increasing cross-border flows of goods, services, money, people, information, and culture (Guillén 2001), is a central argument for a variety of changes in contemporary societies (Mills et al. 2006). It has become one of the most widely used terms to describe the current state of the world (Arnett 2002). For example, sociological research has explored the impact of globalization on youth, family formation, and transitions to retirement from a cross-national perspective (Blossfeld et al. 2006a; Blossfeld et al. 2005), and discussed the (socio-)technological, cultural and political aspects of globalization in general (Raab et al. 2008). However, the debate on the extent and consequences of globalization still continues in many domains (Guillén 2001; Held & McGrew 2003). Among the many facets of globalization, we will focus in this paper on economic processes and only marginally discuss cultural and political aspects, as economic globalization is the protagonist in our central research question regarding work careers.

Economic globalization is characterized by an increasing integration of different countries' economies (Makhija et al. 1997). Generally, there is an upwards trend towards

a globally more integrated economy (e.g. United Nations 2008). The reason for the increasing integration of the world economy is a competitive advantage of cross-border activities for corporations that stems from three main sources (Kogut 1984). First, economies of scale, scope, and learning can be utilized within a global environment. Second, differences in national resource endowment and the differentiation of products can be exploited to adapt to national markets. Third, the flexibility and bargaining strength of multinational networks is greater, compared to networks that only operate nationally.

These advantages of multinational operations on the firm level constitute the basis of the competition on the industry level (Kobrin 1991). However, industries differ with regard to the potential that arises from global competition (Hout et al. 1982). Thus, different industries can be perceived as different competitive environments (Porter 1986; Prahalad & Doz 1987): Global industries are environments where competitive rivalry crosses national boundaries and a high interdependency of domestic markets in different countries prevails (Porter 1986:12). A global industry is, therefore, the sum of domestic industries that have strong linkages among countries (Makhija et al. 1997). As a result of these interdependencies, a different set of adequate strategic behavior is needed for corporations in global industries (Prahalad & Doz 1987; Morrison & Roth 1992).

This view on global industries has two implications for the linkages between economic globalization and work careers. First, industries vary in their extent of globalization, depending on the importance of international linkages. Makhija and colleagues (1997), for example, develop a globalization index of industries based on the level of international interdependencies and show empirically that there is a significant amount of variance between different industries and countries with regard to the level of

globalization. Second, *all* corporations within an industry are affected by the potential of global competition in their sector. Competition is not restricted to corporations that operate internationally, but also affects firms that only market their goods or services in their home country.

In sum, there is between-industry variance in globalization which results in different sets of rules for intra-industry competition. In the next section, we will first discuss the impact of economic globalization on work careers in general and subsequently explore the link between the degree of globalization in different industries and careers.

Impact of Economic Globalization on Work Careers

In the literature, two complementary arguments are found regarding the way in which economic globalization impacts work careers. First, there is a direct effect of globalization on the international mobility of employees. Economic globalization is equivalent to an increase in cross-border corporate activities (see Sullivan 1994). This entails a growing need for international coordination of firm activities and simultaneously offers possibilities for know-how transfer between countries as well as global personnel development and flexible global staffing (Edström & Galbraith 1977; Harzing 2001). As a consequence, expatriation is gaining in importance for corporations and international careers have become a highly relevant topic for both scholars and practitioners (Sullivan 1999; Yan et al. 2002; Cappellen & Janssens 2005).

Second, and more importantly, it is often assumed that there is an indirect effect of economic globalization on work careers via adoptions of organizations to the changing global environment. There is a consensus in the literature that economic globalization led

to more environmental uncertainty and higher competition among firms, which means that organizations have to adapt more speedily to environmental changes and, therefore, need more flexibility in their human resource management (Kalleberg 2000; Mills et al. 2006). Examples of higher flexibility are limitations to protections from dismissal, an increasing amount of fixed-term or part-time employees, and wage and salary negotiations on the organizational rather than the national level (Spilerman 2008). On the individual level, these adjustments change the conditions on the labor market towards more temporary work and higher risks of short-term unemployment, which results in more turbulent careers (Kalmijn & Luijkx 2006). However, employees in different industries are not affected by globalization pressures in the same manner, as some industries inherently have a higher potential of globalization than others. The IT industry, for example, is much more economically globalized than the dairy products industry (Kobrin 1991). Hence, we argue that, for example, the impact of economic globalization on the work careers within the IT sector is greater than for employees working in corporations producing dairy products. In more general terms it follows:

Hypothesis 2: There is a positive relationship between the degree of economic globalization within an industry and the turbulence of work careers within this industry.

Methods

Sample

To examine our hypotheses of increasing turbulence in work careers we rely on a longitudinal data set of individual employment trajectories which covers a comparatively long historical time frame. Since this kind of data is only available in very few developed countries and existing national studies cannot sufficiently be harmonized to capture

detailed individual careers within industries over the whole period since the 1950s, we analyze data for a single country, namely West Germany. West Germany is a particularly interesting case to study economic globalization of industries, as it has been one of the world's great trading nations and the period studied in this paper covers a key phase of economic globalization in terms of increase in foreign trade.

To determine turbulence in individual careers we use data from the West-German surveys of the German Life History Study (GLHS). The GLHS is a unique dataset following individual life courses through this period of structural and economic change. Documentation on the GLHS surveys used in this paper is found in Mayer and Brückner (1989), Brückner and Mayer (1995), and Hillmert et al. (2004). A public-use file of the dataset can be requested from the Center for Research on Inequalities and the Life Course at Yale University (www.yale.edu/ciqle). The GLHS provides detailed retrospective information on employment histories and time-varying demographic information for male and female respondents on a monthly basis. It covers a comparatively long time frame and consists of a set of singular retrospective interviews with persons belonging to specific birth cohorts. We compare career turbulence of seven cohorts, born between 1929 and 1971. The interviews were conducted in 1981-83 (cohorts 1929-31, 1939-41, and 1949-51), in 1989 (cohorts 1954-56 and 1959-60) and in 1998-99 (cohorts 1964 and 1971). Cohort 1971 was interviewed once more in 2005.

To concentrate on the impact of employment settings on career turbulence, we examine instability in early careers after first employment entrance, not frictions in the school to work transition process. All career trajectories are defined as beginning at the first full time employment and ending eight years after. We remain with a total number of

5,453 persons (2,722 women and 2,731 men) for whom we can reconstruct 8 year early career trajectories.

Measures

Career turbulence. To capture the sequential nature of careers, we measure career turbulence using sequence analysis. More specifically, we apply a recently developed measure of turbulence (Elzinga & Liefbroer 2007) to assess changes in early careers across cohorts. This measure of sequence turbulence is part of a broader development of technical innovations in sequence analysis (Aisenbrey & Fasang 2007). Contrary to previous measures of career stability, e.g. simple count measures such as the number of job moves, the turbulence measure takes into account the *order* of career states as well as *duration variation* in different career states. In its simplest form, turbulence increases with the number of distinct subsequences in a career trajectory. Subsequences consist of states, e.g. employment or unemployment, in a particular order, thereby accounting for the order of states within career trajectories. In addition, turbulence includes duration variation, i.e. different amounts of time spent in each career state are taken into account. This enables the distinction of career trajectories with short term frictions from career trajectories of ongoing instability. Consider as an example two persons A and B who experience career trajectories of an equal number of subsequences. Person A experiences several changes within a short period of time and remains in only one career state, e.g. employment with the second employer, for most of the time. This is a career trajectory of short intermediary frictions, but high overall stability. In contrast, person B spends similar amounts of time in various career states and therefore experiences ongoing changes and discontinuity. The turbulence measure enables to take into account that the career trajectory of A is less turbulent than person B's career trajectory, even though A

and B experiences the same number of career states. Formally, turbulence including duration variation $T(x, t)$ is defined as (Elzinga 2007: 33):

$$0 \leq T(x, t) = \log_2 \left(\phi(x) \cdot \frac{s_{t, \max}^2 + 1}{s_t^2 + 1} \right),$$

with $\phi(x)$ denoting the number of distinct subsequences, s_t^2 denoting the variance of state durations and $s_{t, \max}^2$ the maximum of that variance given the total duration of the sequence. By using the turbulence measure for the study of career changes under globalization, we can capture two key aspects of career dynamics simultaneously, namely the order and duration variation of career states, thereby completing the picture derived from earlier career studies.

Globalization of Industries. To quantify the globalization of an industry, we apply a measure of the Level of International Linkages (LIT) (Morrison & Roth 1992; Makhija et al. 1997), which distinguishes industries with less and more international linkages. The LIT index was developed to assess the degree of globalization in industries. For a single country it is defined as:

$$LIT_{it} = \frac{X_{it} + M_{it}}{P_{it} + M_{it} - X_{it}},$$

where X_{it} are exports, M_{it} imports, and P_{it} the level of production in industry i in year t . To ensure comparability, we only include manufacturing firms and the primary sector (agriculture, forestry, and fishery) in the industry-specific analyses (hypothesis 2), although globalization of industries also applies to the tertiary sector (Kobrin 1991). Based on the coding scheme of the GLHS surveys, we group manufacturing firms into seven categories: (1) food products, (2) primary metal industries, (3) wood products,

paper, printing, and allied products, (4) electronic and other electrical equipment, (5) chemicals, petroleum, rubber, and allied products (6) energy and water, and (7) machinery and computing equipment. Additionally, the primary sector builds an eighth category. We obtained data on industry-specific imports, exports, and production in Germany from the German Federal Statistical Office and aggregate the data to the eight broader industry categories. We calculate LIT indices for each year between 1952 and 2004 for each of the eight industries. For example, the index varies between 0.07 (energy and water) and 0.44 (machinery and computing equipment) in 1952 and between 0.17 (energy and water) and 1.13 (electronic and other electrical equipment) in 2000. Overall, the LIT index exhibits sufficient variance across industries as well as over time.

Control Variables. We use data from the German Federal Statistical Office to include economic growth and unemployment rates as control variables, because labor market conditions significantly impact turnover rates (Terborg & Lee 1984). Economic growth is measured in terms of annual increase in the gross domestic product. On the individual level, gender, education, and age at first job are taken from the GLHS surveys and introduced as control variables in the model. Our measure of education is based on a simplified version of the Casmin scheme (Braun & Müller 1997).

Results

Career Turbulence since the 1950s

The state space of the early career sequences and the mean duration spent in each state are shown in Table 1. Please note that these estimates refer to the first 8 years after entering the first full time job. Career sequences consist of external moves between employers as well as of non-employment states that occur after the first job. In order to

grasp external career mobility, we distinguish up to five employer changes, each as separate career states. Moves between more than five employers are rare and are therefore summarized in the category 5+ employers. Among the non-employment states we distinguish phases of unemployment, a return to education, a side job, unpaid care giving, a gap between two employment spells in which we do not know exactly what a person did, and basic military service. Most time was spent in employment with the first employer, on average 52.4 months, followed by employment with a second employer, and unpaid care giving. Phases of unpaid care giving are almost exclusively restricted to women.

- Table 1 -

Mean cohort turbulences including duration variation are shown in Table 2. We find that career turbulence continuously increases across the cohorts born 1930-1955, but remains on a similar level with a slightly decreasing tendency for the cohorts born after 1955. We calculate 90% confidence intervals for mean turbulence (values given in parentheses), taking 5000 bootstrap samples per cohort (Efron & Tibshirani 1993; Elzinga & Liefbroer 2007). The confidence intervals were calculated with the bias corrected and accelerated method (*BCa*), which is known to be particularly robust (Efron & Tibshirani 1993). The bootstrap confidence intervals allow us to assess whether increases in career turbulence for the cohorts born 1930-1955 are statistically significant. Non-overlapping confidence intervals indicate significant differences between mean cohort turbulences. For example, the confidence interval of 4.46 - 4.84 around the mean turbulence of 4.65 for the cohort born around 1930 slightly overlaps with the confidence interval of 4.82 - 5.20 for the mean turbulence of 5.01 for the cohort born around 1940. Therefore, the increase in career turbulence for cohort 1940, compared to cohort 1930, is

not significant. The confidence intervals for mean career turbulence for the cohorts 1930 and 1950 however do not overlap, suggesting that persons born around 1950 did experience significantly more turbulent early careers compared to persons born around 1930. We also find a significant increase in career turbulence between the cohorts 1940 and 1955.

- Table 2 -

Taken together, our findings support a gradual and moderate increase in mean career turbulence for both men and women born 1929 to 1956. This suggests that careers did indeed become less stable and more turbulent during the period between 1950 and the early 1980s when these cohorts experienced their early careers. However, for the cohorts born 1960 and after, mean career turbulence is relatively stable at a higher level and even shows a declining tendency. Overall, hypothesis 1 is partly supported, as there is a small, gradual increase of career turbulence for the cohorts born 1930 to 1955, but no definite trend for younger cohorts.

- Figure 1 -

Globalization of Industries and Career Turbulence

To address *hypothesis 2*, which states a positive relationship between career turbulence and the degree of economic globalization, we enter turbulences, calculated as described above, as a dependent variable in an OLS regression. For this part of the analysis, we restrict our sample in two ways. First, cohort 1929-31 is excluded, because comparable data on the globalization of industries in Germany is available only from 1952 onwards and many individuals from the 1929-31 cohort started their work careers earlier. Second, only persons working in manufacturing firms and the primary sector are analyzed, because the LIT index that we apply to measure globalization of industries only

captures these industry sectors in a meaningful way. This results in a sample size of 1,736 individual career sequences. For each individual remaining in the sample, every month during the eight-year interval is supplemented with time-variant information on unemployment rate, industry growth, and LIT index for that specific period. Since turbulence summarizes a career sequence, i.e. in our study the first eight years of the work career, the time-variant variables (globalization of industries, economic growth, and unemployment rates) are aggregated to mean values across this temporal period.

Table 3 reports the means, standard deviations, and correlations among the study variables. Note that there is no significant direct relationship between turbulence and globalization, which is assumed in hypothesis 2 ($r = 0.00$, $p > .50$). The results from OLS regressions are shown in Table 4. Model 1 comprises all control variables, including dummy variables for the industry, to control for unique industry effects. The unemployment rate is the only significant predictor of career turbulence ($b = -0.17$; $p < .01$), which means that a lower unemployment rate is related to higher turbulence in work careers. However, there is no significant impact of globalization of industries and the total variance explained is also relatively low ($R^2 = 0.024$, $F = 3.01$, $p < 0.001$).

-Table 3-

-Table 4-

There are high correlations between unemployment rate, industry growth, date of birth, and globalization of industries ($r = 0.50$, $r = -0.58$, and $r = 0.65$, respectively, $p < .001$; see Table 3). Therefore, model 1 exhibits high levels of multicollinearity for these variables (e.g. $VIF_{\text{Globalization}} = 10.2$). To decrease problems of multicollinearity, we additionally estimate reduced models that only analyze single cohorts and therefore do not contain the time-variant control variables (date of birth, unemployment rate, and economic

growth). Model 2₁₉₄₀, for example, is constrained to individuals from cohort 1940. In these additional models from four different decades, there are also no significant patterns regarding the impact of industry and globalization of industries.

All models reported in Table 4 have a low explanatory power. To test if a lack of validity is the reason for these results, i.e. turbulence may simply not be a meaningful concept to measure the dynamic of careers, we estimate additional models with organizational tenure as the dependent variable. Organizational tenure is measured with the number of different organizations a person was employed at during the eight-year period. This can be interpreted as a simpler conceptualization of career dynamics, as it, for example, does not consider duration variation or phases of unemployment. A high correlation between turbulence and number of organizations ($r = 0.54$, $p < .001$; see Table 3) indicates that turbulence and organizational tenure are related, yet distinct constructs. However, in a regression model with the same independent variables as model 1 in Table 4 and with number of organizations as dependent variable, globalization of industries also is not a significant predictor ($b = 0.05$, $p > .50$) and the model's explanatory power is only slightly higher ($R^2 = 0.051$, $F = 6.56$, $p < 0.001$). Summing up, hypothesis 2 cannot be supported, since globalization of industries is not a significant predictor for the turbulence of individuals' work careers.

Discussion

In this article, we assess the impact of economic globalization on career stability by analyzing turbulence of early work careers in Germany. Going beyond previous studies, which mainly focused on job durations or firm tenure, our concept of increasing turbulence addresses several dimensions important for work careers simultaneously. Turbulence not only refers to more frequent employer changes in an individual career. It

may also rise, when the order of career sequences becomes less predictable or when the variability of the durations spent in different states increases. We find a small, gradual and apparently non linear trend of increasing career turbulence across cohorts born between 1929 and 1956, but this trend flattens out for younger cohorts, born in 1964 and 1971. Increase in turbulence is not driven by economic globalization, measured as the degree of international linkages within industries.

Thus far, the impact of economic globalization on the turbulence of work careers has never been explicitly addressed in empirical careers research, although it is implicit in much of the literature on new career forms. Our main contribution therefore lies in demonstrating that the turbulence of work careers increased only slightly over the last decades and that economic globalization does not seem to play a role in this process. In addition, we could show that turbulence is a useful measure of stability in work careers. It yields meaningful results which are comparable to organizational tenure, but allows for a broader conceptualization of career stability beyond single employment transitions.

In the following, we first discuss our results regarding changes in turbulence over time. Second, we analyze the (missing) link between economic globalization and stability of work careers and outline opportunities for further research. We end with discussing the limitations of our research and concluding remarks.

Turbulence of Work Careers

Several notable changes of turbulence in early work careers become evident in the empirical analyses (see Figure 1). First, there is, as hypothesized, an overall increase in turbulence across cohorts born between 1929 and 1971. This trend is significant for the earlier cohorts but does not continue for younger cohorts. In fact, there is a peak in turbulence for the cohorts 1955 and 1960 and afterwards a slight drop in the overall

turbulence of work careers. An explanation for this curvilinear evolution might be the “Wirtschaftswunder” in Germany, a period of sustainable economic growth after the monetary reform in 1948, followed by a legislation that strongly supported economic interests (Carlin 1996). Individuals from older cohorts in our sample started their work careers during this period, which offered employment security in growing organizations within a flourishing economy.

Second, Figure 1 shows a lower variability in turbulence for women’s careers across cohorts. Although the tendencies are the same for men and women, the inverted-U is less pronounced for the female sample. Men have a lower average turbulence in the cohorts 1930 and 1940, then show a stronger increase and have higher turbulences in cohorts 1950, 1955, and 1960, and lastly settle down at a comparable level for men and women. These findings are in line with earlier studies of career mobility, which have explored the underlying complex gendered dynamics in more detail (Grunow & Mayer 2007). Women strongly increased their labor market attachment across cohorts and on average entered the workforce in better positions; a trend that resulted in a more heterogeneous female workforce. At the same time, extended phases of unpaid care giving 'stabilize' women's careers for the turbulence measure applied here. So the dip we see for cohort 1964 and 1971 might to some extent reflect the introduction and extension of parental leave since the mid-1980s (Aisenbrey et al. 2008).

Overall, the differences across cohorts in the turbulence of early work careers are small. In terms of effect sizes, there is much more variance between individuals within a cohort than variance between different cohorts, which, for example, results in a small effect size when comparing the oldest cohort from 1930 to the youngest cohort from 1971 ($d=0.21$; Cohen 1988). Elzinga and Liefbroer (2007) come to a similar conclusion in their

analysis of family-life trajectories amongst women born between 1945 and 1964 in Western societies, as they could not find more turbulent trajectories of young adults across cohorts. Overall, our result is in line with other empirical work that showed only small changes in the dynamic of careers over the last decades (Winkelmann & Zimmermann 1998; Grunow & Mayer 2007).

Impact of Economic Globalization on Work Careers

Contrary to what was hypothesized, economic globalization was no significant predictor of turbulence in work careers or organizational tenure. We also could not find unique industry effects, i.e. there was no industry with a significantly higher or lower average career turbulence compared to the others. It seems that work careers are much more stable over time and industries than is often assumed. This has important implications on various levels. For *careers research*, our findings challenge one of the central tenets in many conceptualizations of new careers. At least from a macro-level perspective, there is no evidence for the emergence of boundaryless careers, as there has not been much change in the dynamic of work careers due to globalization of the world economy. This is, however, not contradictory with the assumption of changes in the relationship between employers and employees (Arthur & Rousseau 1996). In other words, there may have been changes in the employer-employee relationship over the last decades, although career pathways remained stable. The growing body of literature on specificity and shape of new career forms can help to shed light on this relationship (e.g. Arthur et al. 2005; O'Mahony & Bechky 2006).

On the *individual level*, the empirical results suggest that there are no industries in which individuals consistently exhibit more turbulent careers. This finding does not disprove the emergence of specific occupations or labor markets that are characterized by

an unconventionally high dynamic, for example the IT sector in Silicon Valley (Saxenian 1996) or the film industry (Jones 1996). But for individuals, economic globalization is not a good marker to identify industries that might create more turbulent work careers.

For *organizations*, a general discussion about the impact of economic globalization on firm strategy and structure is beyond the scope of this paper. The aforementioned increase of expatriates and the growing linkages between subsidiaries in different countries undoubtedly call for an integrated international human resource management, but for basic human resource planning and career development, general trends of economic globalization seem to play a minor role. In further research, a micro-level perspective might reveal additional insights on correlates of career turbulence, for example differences in psychological contracts, job embeddedness (Mitchell et al. 2001), career anchors, organizational commitment, and objective and subjective career success.

On a *societal level*, our results do not imply an urgent need to adjust labor market policy to counter changes in career dynamics. However, other studies have pointed out that environmental developments might have led to a spread in unemployment rather than to more turbulent careers, i.e. an increase in extended phases of stable unemployment (Grunow 2006; Blossfeld et al. 2006b). This question cannot be answered in the current study. Analyzing changes in career patterns over time might therefore be a fruitful avenue for future research, as it could further improve our understanding of whether career turbulence is mainly positive or a negative for individuals, organizations and societies, above the pure assessment of the extent of career turbulence over time.

Limitations

Our research is subject to several limitations. First, data from the GLHS covers work careers in Germany. Although Germany is a major Western economy and a good

example for economic globalization, cultural, societal, and political differences might cause differing results in other countries. For example, Germany has rigid and protective employment policies compared to other OECD countries, which might result in more stable careers in Germany (Spilerman 2008). Second, we only analyze the effects of economic globalization on work careers. Social and political globalization can be seen as additional drivers towards more unstable work careers. Third, our industry-specific analyses focus exclusively on the primary sector and manufacturing industries. We exclude the service sector for reasons of comparability, as service firms follow different paths towards globalization and therefore require different measurement approaches (Campbell & Verbeke 1994). At the same time, the growing importance of service industry and growth in transnational migration of service workers call for an inclusion of services in a study of industry specific globalization and careers. Fourth, industries were aggregated to a relatively high level. The data for the earlier GLHS cohorts did not allow a finer-grained categorization, but one might argue that effects are weakened on this level of aggregation. However, we found large variance in the LIT indices, our measure of economic globalization in different industries over time, which supports this approach. Fifth, partly for reasons of practicability, our analyses were restricted to the first eight years in work careers, but mid and late careers of individuals might to some extent follow different patterns over time. Ultimately, this could result in an increased turbulence and a higher impact of globalization especially in these later career stages.

Conclusion

Contrary to what is often implicitly assumed in careers research, we do not find a strong increase in the turbulence of work careers over the last decades. Careers became slightly more dynamic for individuals born in the 1930s and 1940s, but for individuals

born in the 1950s onwards, there are no significant differences in the turbulence of their early work careers. Additionally, economic globalization could not be identified as a driving force behind the dynamic of individuals' careers. Overall, we do not normatively claim that turbulent careers are inherently good or bad for individuals and society at large. Instead, we want to point out that researchers should consider the relative stability of careers when investigating persons' work experiences over time.

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Tables and Figures

Table 1. State Space of Career Sequences

no.	career state	mean duration (months)
1	unemployment	6.2
2	education	1.3
3	gap	1.7
4	military service	2.0
5	side job	.25
6	unpaid care giving	6.8
7	1 st employer	50.3
8	2 nd employer	17.9
9	3 rd employer	6.4
10	4 th employer	1.9
11	5 th + employer	.9

Source: GLHS, West Germany

Table 2. Turbulence Including Duration by Gender and Cohort

	Total	Men	Women
Total	5,19 (5,13 - 5,26)	5,15 (5,06 - 5,25)	5,23 (5,14 - 5,34)
Cohort 1930	4,65 (4,46 - 4,84)	4,36 (4,10 - 4,63)	4,94 (4,66 - 5,21)
Cohort 1940	5,01 (4,82 - 5,20)	4,91 (4,63 - 5,18)	5,13 (4,85 - 5,38)
Cohort 1950	5,34 (5,15 - 5,54)	5,42 (5,12 - 5,69)	5,27(4,99 - 5,54)
Cohort 1955	5,42 (5,26 - 5,58)	5,50 (5,28 - 5,71)	5,34(5,09 - 5,58)
Cohort 1960	5,42 (5,21 - 5,62)	5,44 (5,15 - 5,71)	5,40 (5,09 - 5,70)
Cohort 1964	5,21 (5,06 - 5,34)	5,10 (4,90 - 5,29)	5,32 (5,11 - 5,52)
Cohort 1971	5,28 (5,10 - 5,49)	5,43 (5,12 - 5,69)	5,15 (4,87 - 5,44)

Source: GLHS, West Germany, Note: bootstrap confidence intervals in parentheses

Table 3. Means, Standard Deviations, and Correlations

Variable	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.
1. Career turbulence	5.19	3.06	-							
2. Number of organizations	1.93	1.19	.54	-						
3. Gender ^a	0.50	0.50	-.01	.06	-					
4. Date of birth ^b	652.5	152.2	.06	-.08	-.02	-				
5. Age at first job (months)	228.1	31.2	-.06	-.06	.07	.30	-			
6. Education	2.58	1.12	-.03	-.06	-.03	.34	.63	-		
7. Unemployment rate	5.91	2.81	-.01	-.10	.00	.49	.18	.20	-	
8. Economic growth	3.70	2.22	-.06	.03	.01	-.86	-.37	-.34	-.14	-
9. Globalization of industries	0.53	0.24	.00	-.07	.17	.65	.32	.28	.50	-.58

Notes. N≥5415 for rows 1-8 (p<.05 for |r|≥.03; p<.001 for |r|≥.06); N=1876 for row 9 (p<.01 for |r|≥.07; p<.001 for |r|≥.17)

^a female=0, male=1

^b in months after 1900

Table 4. Results of the Regression Analyses

Variable	Turbulence				
	Model 1	Model 2 ₁₉₄₀	Model 2 ₁₉₅₀	Model 2 ₁₉₆₀	Model 2 ₁₉₇₁
Gender ^a	.03	-.02	.01	.00	.01
Age at first job (in months)	-.06	-.07	.12	-.06	-.08
Education	-.03	.04	-.09	-.04	-.13
Time-variants					
Date of birth ^b	.07	-	-	-	-
Unemployment rate	-.17**	-	-	-	-
Economic growth	-.05	-	-	-	-
Industries					
Food products ^c	.06	.11	.00	-.04	.14
Primary metal industries ^c	-.04	-.02	.16	.03	-.08
Electronic equipment ^c	-.03	.13	.06	-.06	-.05
Chemicals ^c	-.05	.08	-.04	-.03	-.10
Energy and water ^c	-.04	-.08	-.01	-.09	.04
Machinery and computing ^c	-.09	.12	.27	.09	-.19
Primary sector ^c	-.04	.02	-.03	-.05	-.10
Globalization of industries	.09	-.08	-.31	-.14	.11
R ²	.024***	.036	.025	.029	.079
df	(14, 1722)	(11, 371)	(11, 243)	(11, 198)	(11, 179)

Notes. Standardized betas; *p<0.05; **p<0.01; ***p<0.001

^a female=0, male=1

^b in months after 1900

^c Dummy coding of industry; reference category: wood products, paper, and printing

Figure 1. Turbulences across Cohorts

