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Karl Polanyi and Economics:
Polanyi's Pendulum in Economic
Science

Diskurs 2019 - 4

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Abstract

Since the crisis of 2008 the liberal market order has been challenged by several (populist) social movements and has become object of political regulation. Whereas in the late 70s and early 80s politics tend to deregulate the market, nowadays deregulation seem to be a synonym for the negative externalities of a free global market.

Following Polanyi (The Great Transformation, 1944), societies with market market economies tend to experience a double movement – the Polanyi's Pendulum - between phases in which the policies are designed to restrict the markets or liberalize them. This paper raises the question if these indicated changes have an impact on the economic research topics.

Referring to modern Varieties-of-Capitalism literature bibliometric data of the period between 1950 and 2015 are used to analyze if there is a Polanyi's Pendulum within the economic literature. Looking for specific key words, e.g. liberalization, and using correlation analyses and time-series regressions it is possible to determine changes of the topics economists worked on and to identify those economic macro-forces that have been driven these changes.

The political development in recent years can be considered as a new swing of Polanyi's pendulum. Economics itself is part of the double movement. A second look at Polanyi`s might be fruitful to face present challenges better equipped.

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Introduction

The end of the so-called neo-liberalism has been covered across the media with reports of excessive financial industrial greed and rising inequality since the financial and economic crisis between 2007 and 2009.With his book Capital in the 21st century the French Economist Thomas Piketty achieved a huge success and gained a lot of attention. In June 2016 the IMF economists Ostry, Loungani und Furcersi asked the question: *Neoliberalism: Oversold?.* Interpreted as a sharp criticism with the so-called neoliberalism, their treatise was covered in leading European newspapers, e.g. the British Guardian and the German Süddeutsche Zeitung as well as in non-European papers, as the Israeli Haaretz. In November 2017 the Harvard economist Dani Rodrik published an essay in the us-based Boston Review in which he asked to *rescue Economics from Neoliberalism*[1]. Just looking at the very surface, it seems that economic liberalism got under societal pressure.

In 1944 two books with no genuine academic approach were/Have been published, which shaped discussions in the following centuries in whole range of topics though. Friedrich August von Hayek published his book *The road to serfdom* in British exile. He warmed of the danger of tyranny, which will follow inevitable from the control of economic decisions through the government via central planning. Karl Polanyi wrote his book *The Great Transformation* in exile too, but in the USA. Polanyi claimed to describe the emergence of marked societies and the subsequent developments (in his book). The institutions of the self-regulation markets can be sustained over longer periods of time, without eroding the substance of the society. That is why societies will react with counter measures, which will interfere the self-regulating functions of markets (Polanyi 2011[1944]: 3f.).

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[1] Rescuing Economics from Neoliberalism, Dani Rodik, 6th November 2017.

The authors' theses are as partisan as their political affiliations were. Hayek is known as a convinced and outspoken liberal. Polanyi was a socialist. The antipode of both and their respective opinions will arise in this paper.

Karl Polanyi's *The Great Transformation* is the basis of this paper. An important part of Polanyi's book is the theory of double movement and Polanyi's pendulum respectively. The exact interpretation of the theory differs between the authors of secondary literature but it possible to identify the theory's essential element: Economic orders swing between liberal and organized stages. The reason for this is the extremes of both arrangements of the economic system. Societal pressure leads to changes in both cases. A couple of authors claim that the pendulum swings back to a stronger organization of the economic system after the crisis of 2007, 2008 and 2009.[2]

The purpose of this paper is to research a pattern similar to the Polanyi's pendulum within economic research. This consideration is based upon the hypothesis, that those societal changes Polanyi described can also be found in the economic sciences. In a second analytical step this paper tries to explain changes in the publication pattern through variables which are contextualised/ located in the economy. The exact research question is: Is there a Polanyi's pendulum in economics publications and whereof is it depended on?

In the literature Polanyi and Polanyi's pendulum received some attention but the work published is attached to a theoretical treatment of the subject. No publication takes a quantitative approach. In this context Francis (2009), Dale (2012) May and Nölke (2014) as well as Kolev and Zweynert (2015) are to be mentioned.

The study of scientific publications with respect to a Polanyi's pendulum and the attempt to explain the supposed relationship within the economics literature quantitatively has not been done before. The object of investigation in this paper is the economic literature alone, neither is not the existence of the Polanyi's pendulum itself. To answer the research question bibliometric data has been collected and examined/explored/studied.

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[2] See Stewart (2009) or Dale (2012).

Using the database *Web of Science* of Thomson Reuters (now: Clarivate Analystics) data from a number of publications regarding these topics has been collected which will be developed in chapter 2.

Theoretical Background
Polanyi's pendulum

The concepts of the Polanyi's pendulum acquired its name through the reception of The Great Transformation in the scientific literature. Polanyi himself calls the process *„double movement"*. The spread of the market economy was met with refusal, which hindered it`s further spread in certain directions (2001[1944]: 136):

> For a century the dynamics of modern society was governed by a double movement: the market expended continuously but the movement was met by a countermovement checking the expansion in definite directions. Vital though such a countermovement was for the protection of society, in the last analysis it was incompatible with the self-regulation of the market, and thus with the market system itself.

This counter movement did not serve class interests but protected the societal substance which was threatened by the market (2001[1944]: 169). According to Polanyi it is typical for market societies, that the pendulum between movements of disembedding economic activity and embedding it swing back and forth persistently (Kolev und Zweynert 2015: 155). Stewart (2009: 766) interprets Polanyi differently, claiming there have been two swings of the pendulum so far. The first describes the development from pre-market economy societies to the market dominated societies of the 19th century.

> It is agreed that the liberal movements, intent on the spreading of the market system, was met by a protective countermovement tending toward its restriction; such an assumption, indeed, underlies our own thesis of the double movement. (Polanyi 2001[1944]: 151)

Polanyi's pendulum can be understood as an oscillating movement between two poles (May and Nölke 2013: 52). Dale (2012: 7) describes the *double movement* as a process, in which a market-generated oppression of social relationships leads to a political

reaction, by tariffs, labour laws and subsidies. This in turn leads to inelastic markets, sluggish growth and instability. The realisation of capitalism's function, the efficient supply of consumer goods (Polanyi 2001[1944]: 307) is restraint by this development. Subsequently the long-term attractiveness of liberal economic orders (May and Nölke 2013: 60), which is reflected in politics.

The theory of *Varieties of Capitalism* in the political science subfield International Political Economy is heavily influenced by Karl Polanyi and his theory of the double movement. The model for the time series regression this paper is based on this theory.

Varieties of Capitalism

The theory, of *Varieties of Capitalism* (following: *VoC*) has a strong connection to Polanyi. The idea of different characteristics of capitalism and market economies respectively is part of the double movement thesis. Therefore, Polanyi is referred to as a precursor of the *VoC* theory. (Kolev and Zweynert 2015: 166). The *VoC* is a theory of comparatively categorising of national characteristic variants of capitalism (Beck and Scherrer 2013: 152). *Liberal Market Economies* are to be distinguished from *Coordinated Market Economies* (Hall and Soskice 2001). The classification of a national economy is possible using six institutional spheres. To test this hypothesis Hall und Gingerich (2004: 35) conducted quantitative research using the categories *industrial relations*, *social protection*, *labor market flexibility*, *firm structure*, *corporate governance* und *earnings and employment*. Those categories reflect the different possible arrangements of capitalistic economic orders, between their respective borders the double movement happens.

Periodization

Polanyi himself wrote about the possibility to describe different periods of the double movement: „It would be easy to produce a regular calendar setting out the years in which analogous changes occurred in the various countries" (2001[1944]: 153).

May and Nölke (2013: 65) propose a calendar of liberal and organised phases of capitalism using the example of the USA:

1860	Laissez-faire capitalism crisis: Long Depression (1878-1879)	liberal
1880er-1890	Gilded Age (Trusts) crisis: Panic of 1893	organised
1900-1920	Progressive era / Antitrust crisis: Great Depression (1929-1933)	liberal
1940-1960	New Deal/ Fordism crisis: break down of Bretton Woods/ oil shock (1973)	organised
1980-2010	Financialization	liberal

Table 1: Alternation between liberalen und organised phases of capitalism in the USA USA. Quelle: May and Nölke (2013: 65).

Each phase ends in a crisis, just as described in the Polanyian theory. The following analysis is geared to the classification by May and Nölke (2013). In the following graphics the times of organised capitalism up to 1960 are coloured red, the liberal phase between 1980 and 2010 are coloured blue (got hachures?). The non-categorized time between 1960 and 1980 is not coloured.

Identification of keywords

Polanyi was beyond doubt that a market economy has to incorporate every factor of production. This includes labour, land money (2001[1944]: 74). From a Polanyian perspective this instance can be called commodification. Polanyi himself states that the treatment of labour, land and money as factors of production is a fiction (2001[1944]: 71f., 76.).

> The crucial point is this: labor, land, and money are essential elements of industry; they also must be organized in markets; in fact, these markets form an absolutely vital part of the economic system. But labor, land, and money are obviously *not* commodities; the pos-

tulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. In other words, according to the empirical definition of a commodity they are not commodities. (Polanyi 2001[1944]: 75; emphasis in original)

Polanyi concedes that labour, land and money are essential in a market economy and therefore have to be organised on markets, but he claims that no society is able to resist the effects of such a system of fictions. (2001[1944]: 76).

The first three keywords on which the analysis is based on are *Labor Market[3], Land* und *Money*. The second set of key words is *Liberalization* and *Regulation*. Polanyi explains the double movement with phenomena that are closely related to those two keywords.

The Liberalization leads to a crisis, which results in a push-back against the logic of markets. Polanyi calls this process social and national protectionism (2001[1944]: 152) and is a comprehensive regulation of the economy. This in turn results in a crisis and liberal ideas gain momentum again.

Empirics I – The pendulum and scientific publications

In the first part of the analysis the topics of the publications in economic sciences are examined for the Polanyi's pendulum. This analysis is a quantitative analysis of bibliometric data. Important bibliometric databases are *Web of Science* von *Thompson Reuters[4]* und *Scopus* von *Elvesier*. Contrary to popular believes Google Scholar is no valid database, as the criteria to include publications in the database are unknown (Ball 2015: 81).

The databases Web of Science and Scopus differ in one important aspect. To be included in the search universe of Web of Science the Impact factor of a publication is

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[3] The keyword *Labor Market* includes the British spelling Labour and the single words Labor and Labour. This is due to the search algorithm of *Web of Science.*

[4] Now Clarivate Analytics.

crucial, whether Scopus uses a specialized board to choose high quality publications instead of achieving high coverage. (ibidem.: 80).

Given this paper researches topics within economics a broad coverage of the publications in the field of economics is the appropriate basis for the empirical work. According to the Bradford-Law most of the relevant and influential articles are published in a small fraction of the publications (Frey 2015: 22-2). Therefore, a database that looks for the impact factor of publications should provide a solid basis for the empirics.

In addition to that, Baccini and Barabesi (2014:15) state that a homogenous group of editors influences almost a quarter of all relevant scientific periodicals. Nevertheless, it has to be stated that social sciences and economics books, chapters of books, monographs and conference papers played a great role traditionally and those types of publications are not sufficiently included in the databases considered (Bornmann and Mutz 2015: 11). Taking that into consideration, the assumption of sufficient coverage of the publications is justified by the Bradford-Law.

Analysis

Using the search engine of Web of Science for each keyword and year from 1950 to 2015 a single search was conducted. The results are presented in appendix A.

To answer the research question

Is there a Polanyi's pendulum in economics publications and whereof is it depended on?

It is necessary to split the question into two sub questions.

In a first step the question if there is a Polanyi's pendulum in publication in economics is to be investigated. Chapter 4 turns to the second sub question, whereof the pendulum is depended on.

The calendar by May and Nölke (2013) provides indications to points in time where t turning point of any development related to the Polanyi's pendulum can be expected.

Changes in publication pattern are supposed to happen not continuously but in proximity to the transitions from liberal to organised phases. Structural breaks are expected near to the year 1960 and 1980.

Descriptive Analysis

The total number of recorded publications in the field of economics is 1.679.180. In 1951 just 462 publications have been recorded, which is the smallest number in the sample, whereas in 2015 the maximum with 66.868 publications has been reached. The average growth rate of the number of publications between 1950 and 1951 is 6.8%, between 1960 and 2015 the number grew by 3.75% per year.

A brief overview of the development in the field of economics and for each key world is given in figure 1:
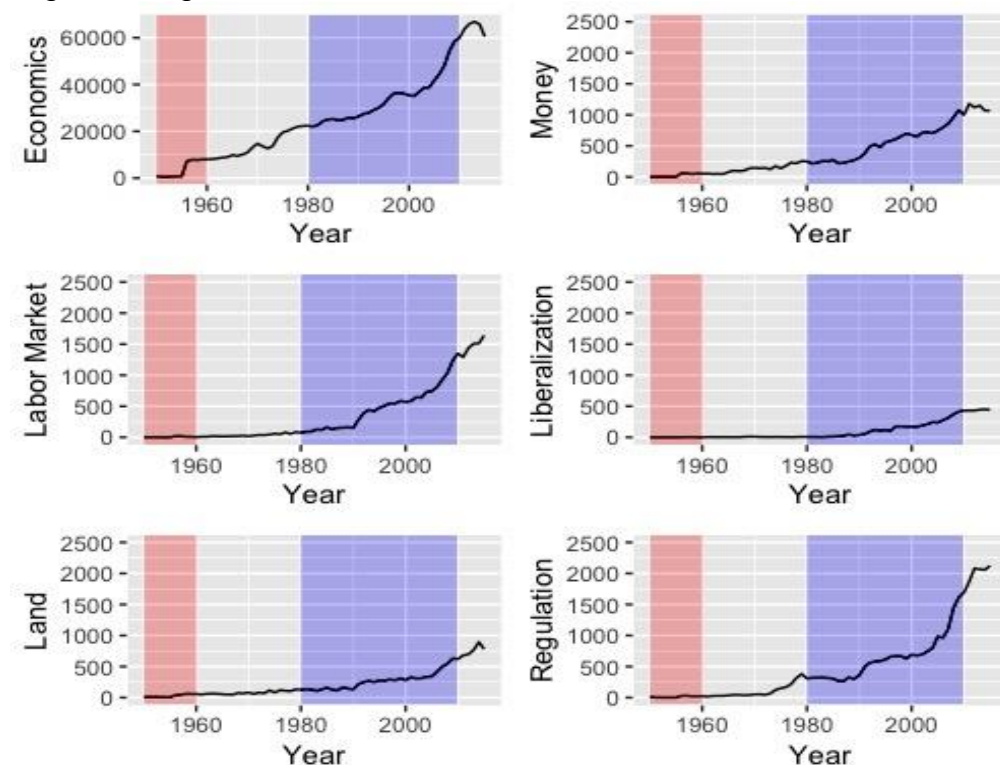

Figure 1: Development of publication numbers between 1950 and 2015 in comparison..

In the following ten years rolling growth rates are present for Economics and each key word. This approach serves the objective to better understand the underlying pattern of growth. The blue regression line indicated the trend.

Economics

One can see a decrease in the growth rates between 1980 and 2010. According to May and Nölke (2013) this in a liberal phase of the US-American capitalism.
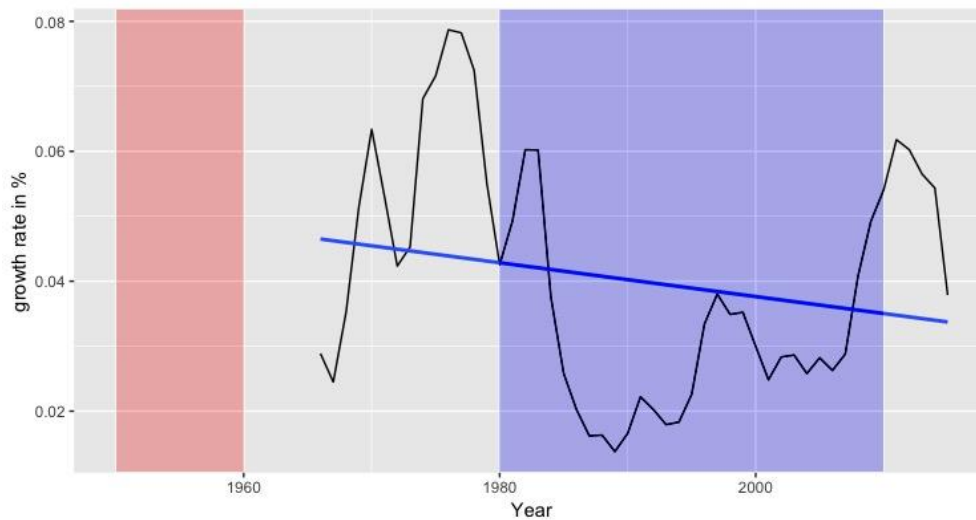

Figure 2: ten years rolling growth rate of publications numbers for Economics. Own calculations.

Labor Market

The publication for the keyword Labor Market show a similar pattern. The ten years rolling growth rates decrease until the mid-1980s and start to rise again around 2005.
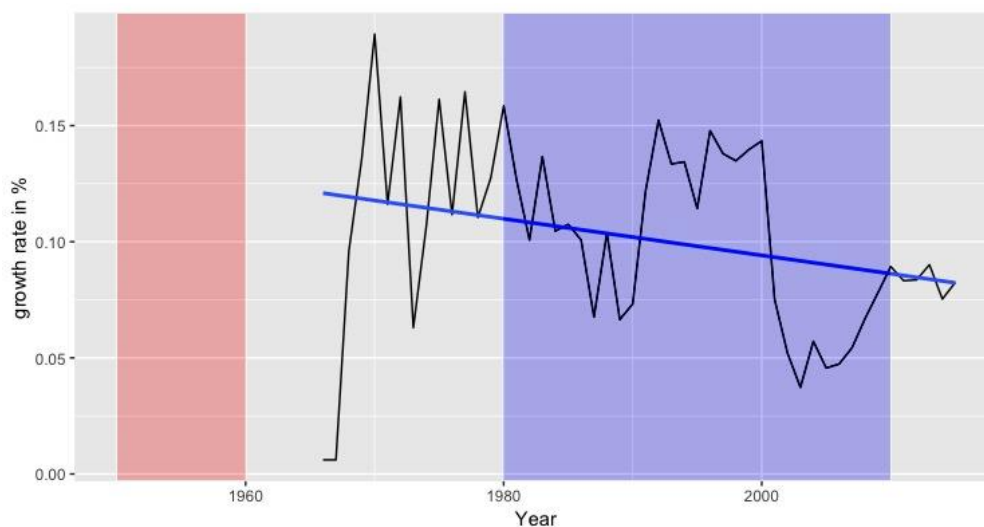

Figure 3: ten years rolling growth rate of publications numbers for Labor Market. Own calculations.

Land

For *Land* there is a different trend, comparing to the other key words and Economics, although there is a similar pattern.
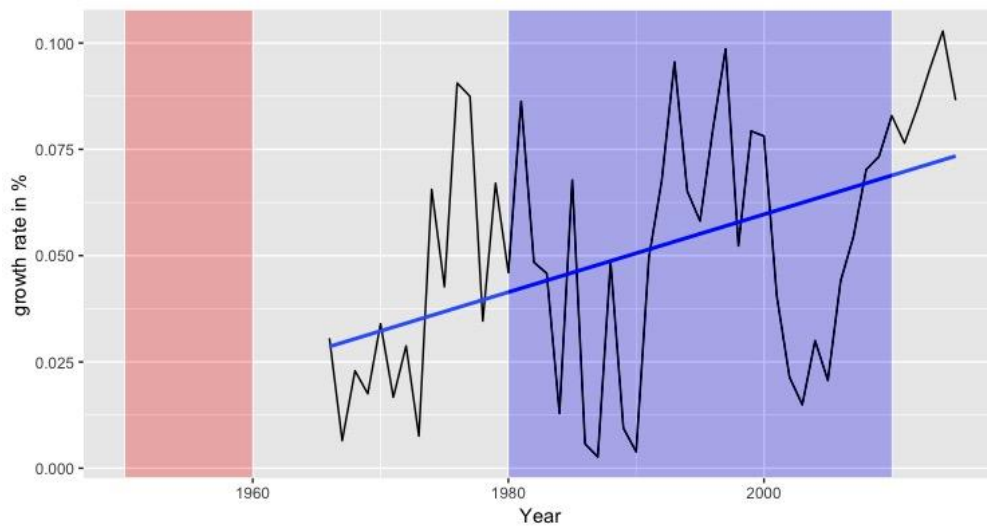

Abbildung 4 Figure 4: ten years rolling growth rate of publications numbers for Land. Own calculations.

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Money

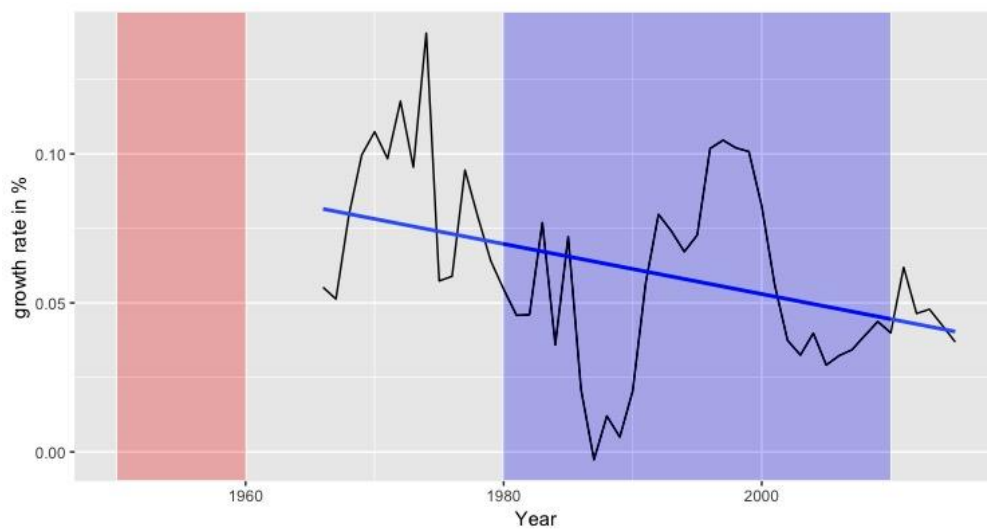The key world Money shows a similar pattern.

Figure 5: ten years rolling growth rate of publications numbers for Money. Own calculations.

Liberalization

The ten year rolling growth rates of Liberalization show a similar pattern. There is a slightly positive trend, but particular after 1980 the growth rates increased noticeable.

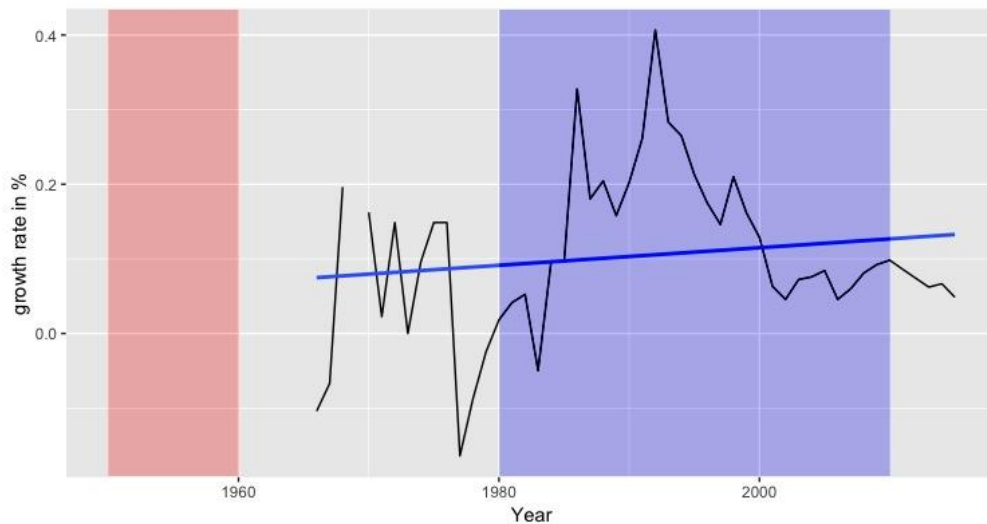Figure 6: ten years rolling growth rate of publications numbers for Liberalization. Own calculations.

Regulation

For Regulation the pattern is almost converse to the pattern of liberalization. The ten year rolling growth rates decreased between 1980 and 2010, notably after 1980 the growth rates collapsed.
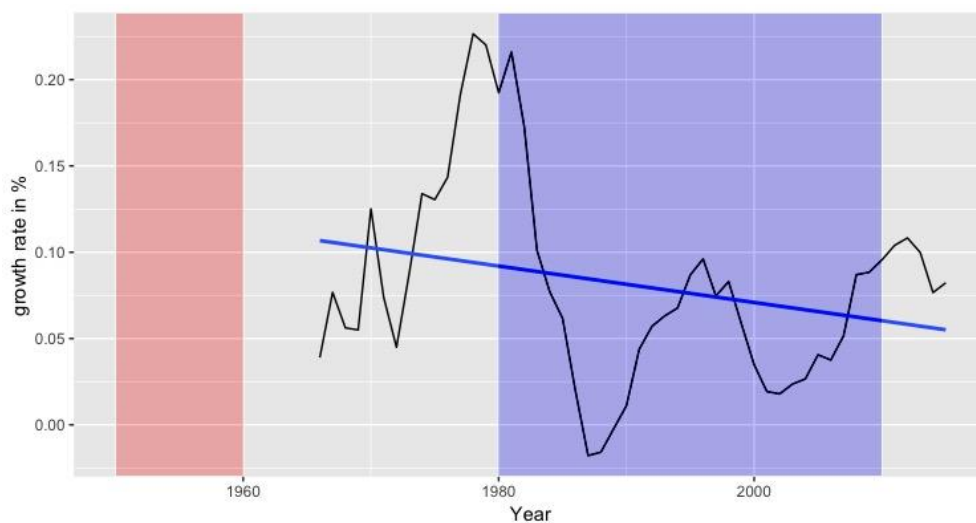

Figure 7: ten years rolling growth rate of publications numbers for Regulation. Own calculations.

Summary

Looking at the development of the ten year rolling growth rates a pattern can be easily recognized. Particularly distinct in the pattern for Liberalization and Regulation. The graph's patterns indicate an opposing development. This development will be further investigated in the next chapter.

Correlation analysis

To answer the first sub question it is essential to know about the strength of the relationships between the development of the yearly publication numbers for Economics and the five key words. To answer this question the ten year rolling correlations between Economics and each keyword as well as Liberalization and Regulation have been calculated. The regression graphs have been calculated with the method of *Locally-Weighted Regression* (Cleveland und Devlin 1988). With this calculation method (*locally weighted scatterplot smoothing*) data points in proximity to the estimated point are weighted more heavily.

Labor Market

Figure 8: ten years rolling correlation between Economics and Labor Market. Own calculations.

Land

Figure 9: ten years rolling correlation between Economics and Land. Own calculations.
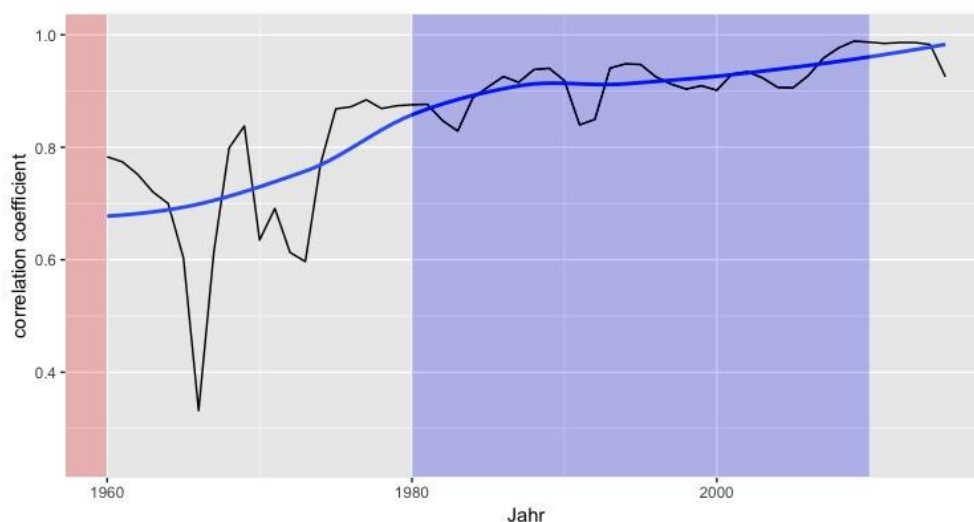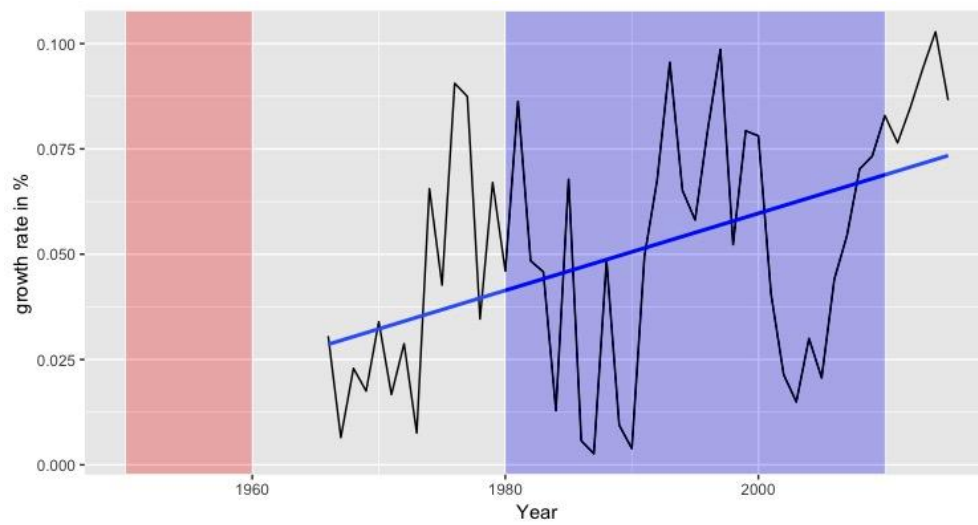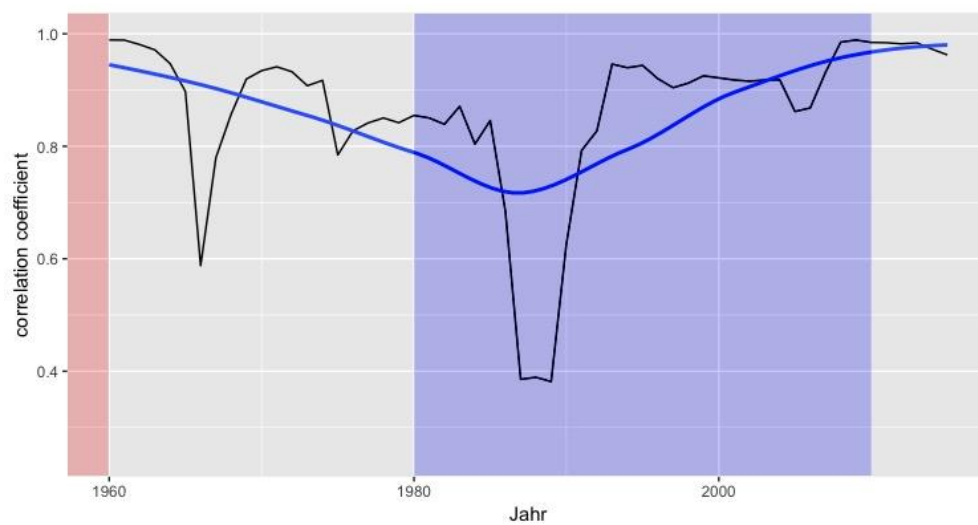
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Money

Figure 10: ten years rolling correlation between Economics and Money. Own calculations.
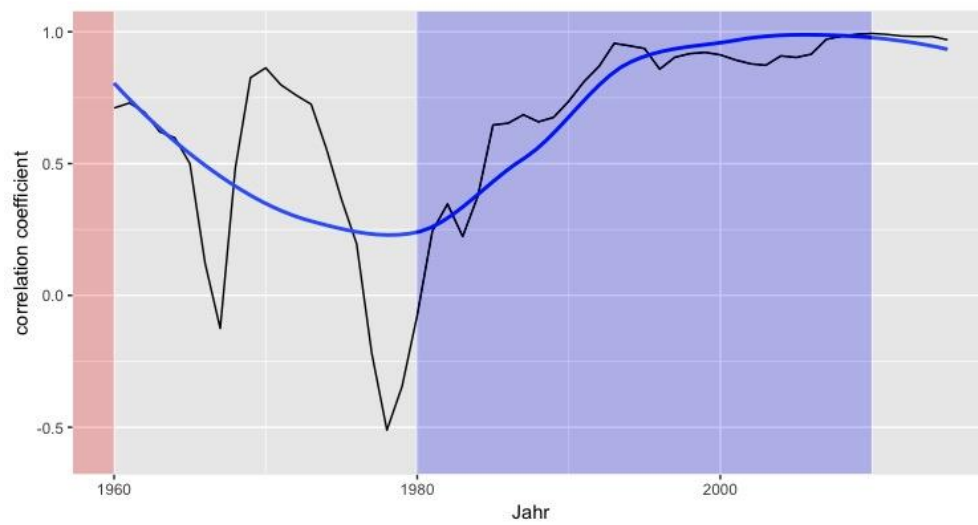
Liberalization

Figure 11: ten years rolling correlation between Economics and Liberalization. Own calculations.
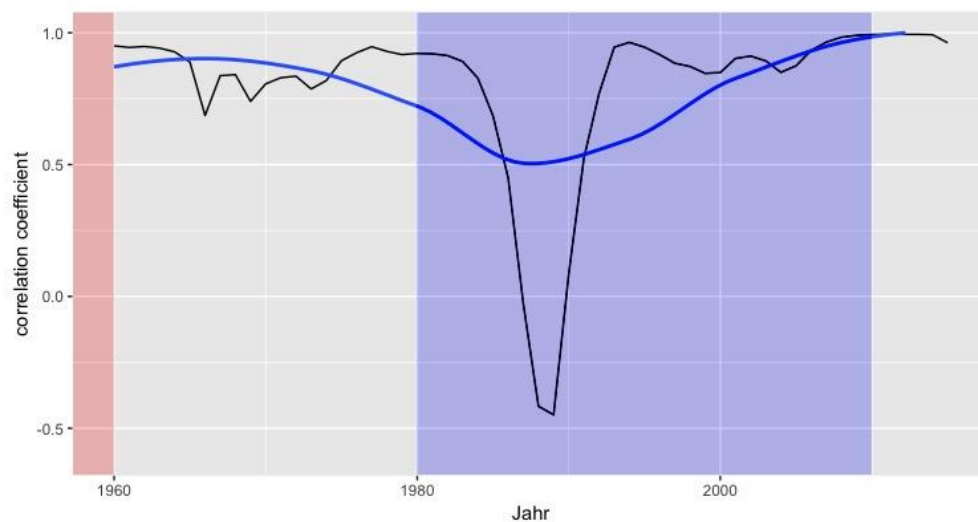
Regulation

Figure 12: ten years rolling correlation between Economics and Regulation. Own calculations.

Liberalization and Regulation

To answer the research question the relationship between the key words Liberalization and *Regulation* is of particular interest.
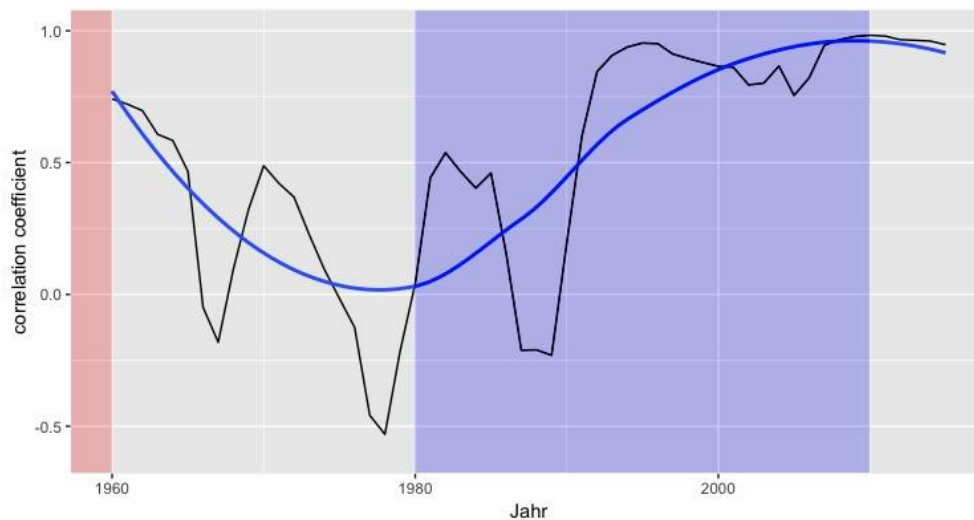
Figure 13: ten years rolling correlation between Liberalization and Regulation. Own calculations.

Summary and Conclusion

The relationship between the development of Economics and the key word *Labor Market* show a distinct change in the trend of the correlation coefficient. The increase in the value of the coefficient slows down after 1980. This point in time matched the assumed turning points according to the calendar by May and Nölke (2015). In 1980 the phase of liberal capitalism in the USA begins. The structural break at this point can be found in every relationship discussed. The regression graphs calculated using locally-weighted regression show clearly that for every key word the trend changes around 1980, except Labor Market which has is a minimum at that time. This implies that all correlation coefficients before 1980 decrease in trend and increase after 1980.

Problematic for this analysis is the fact that only one cycle, one period after May and Nölke (2013) respectively is covered. Hence it is not possible to check for repetitions of the pattern in history. Furthermore a trend to increasing correlation coefficients is

noticeable which could be explained by rising specialization within the field of economics. This development has a strong relation to the industrialisation and the growth of the world economy (Bornemann and Mutz 2015: 8). Researchers might not be prone to change their field of research due to external (societal) developments.

Empirics II – The pendulum in Economics and the economic development

To answer the second sub question, it necessary to identify factors that have an impact on the publication patterns. To achieve this a time-series regression is conducted. Using the USA the relation between the number of publications in Economics as well as every keyword and general, economic indicators is examined.

Conception

The setting is based on considerations out of the theory of Variets of Capitalism. Hall and Soskice (2001) categorized economies in *Liberal Market Economies* (LME) and *Coordinated Market Economies* (CME). The fundamental assumption of the analysis presented it, that the same characteristics that are used to the mention categorisation in MEW and CME can be just to measure changes of an economic system as the theory of Polanyi's pendulum describes.

Hall und Gingerich (2004) tested die *VoC*-approach empirically. Centre of their study is the question, how companies coordinate their action in an economy. To serve this objective they distinguish six spheres (2004: 34f.):

1. *Industrial Relations*
2. *Social Protection*
3. *Labor Market Flexibility*
4. *Firm Structure* (?
5. *Corporate Governance*
6. *Earings and Employment*

For each of those six sphere they name two or three variables that allow for a categorisation in CME, LME and Mixed Market Economies (MME). MME are those economies that cannot be categorised definitely. The choice of the variables for this analysis was restricted by the availability of data. For all spheres the variables used have to be taken as a proxy-variable. For an explanation of the chose variables see table 1.

Variable	Abbreviation	Explanation
Union Membership	UnionMemb	Share of union member of all employees
SocialSpendung/GDP	SocialS.GDP	Relation of public social spending and the gross domestic product
Income highest 1%	Income1.	Share of 1%-fractils of income. Exclusive capital income.
Job Tenure	Job.Tenure	Average tenure of employment relations.
trend(Y)		Trend variable of the respective

Table 2: Definition of exogenous variables.

The sixth sphere is omitted, because the underlying data does not show any significant differences between LME and CME.[5]

Scientific publications obviously are the result of a research process that needs some time. Therefore the exogenous variables are lagged by five years. This ensures that the responsiveness of publication behaviour of scientists of the economic and societal environment. The question that is asked is, if the responsiveness differs between the liberal phase between 1980 and 2015 and the unspecified phase between 1960 and 1980. To exclude the phase of change five years before and after the change of phases are excluded.

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[5] See Hall and Gingerich (2004: 35), Table 8.

Model

To estimate the relative change of the endogenous variable to changes in the exoge-
nous variables a Log-Log-model is used. For the three variables *Union Membership*,
Income highest 1% und *Job Tenure* a inverse relationship is present. The following
model is to be estimated:

$$\log(Y_t) = \beta_1 + \beta_2 \frac{1}{\log(Union\ Membership_{\ t-5})} + \beta_3 \log(SocialSpendung/GDP_{t-5})$$
$$+ \beta_4 \frac{1}{\log(Income\ highest\ 1\%_{t-5})} + \beta_5 \frac{1}{\log(Job\ Tenure_{t-5})} + trend(Y) \quad \textbf{(1)}$$
$$+ \varepsilon_{t-5}$$

With Y_t = *Economics, Labor Market, Land, Money* und Y = *Economics, Labor Market,
Land, Money*.

The endogenous variables *Liberalization* and *Regulation* and the exogenous variable
Income highest 1% lags a linear relationship. The model for both endogenous variables
is therefore estimated without *Income highest 1%*. The restricted model is:

$$\log(Y_t) = \beta_1 + \beta_2 \frac{1}{\log(Union\ Membership_{\ t-5})} + \beta_3 \log(SocialSpendung/GDP_{t-5})$$
$$+ \beta_4 \frac{1}{\log(Job\ Tenure_{t-5})} + trend(Y) + \varepsilon_{t-5} \quad \textbf{(2)}$$

with Y_t = *Liberalization, Regulation* and Y = *Liberalization und Regulation*.

Data collection

The data about the publications in the field of *Economics* and the keywords *Labor
Market*, *Land*, *Money*, *Liberalization* and *Regulation* have been collected through *Web
of Science*. For each search term single searches have been conducted for the years
between 1950 to 2015.

The data concerning the gross domestic product and social spending are *Federal Reserve Economic Data*. The ratio between both has been calculated. The time series on the share of union members of all employees is from Hirsch, Macpherson and Vroman (2016). The data on income distribution is from Saezl und Piketty (2015[2003]).

Data on job tenure is collated from different publications of the *U.S. Department of Labor, Bureau of Labor Statistics* (quoted after Copeland 2015). Stated is the median of each age cohort. The time series used is an average over all cohorts that Copeland (2015) states. Each cohort is weighted equally. Missing data has been filled with interpolation.

Results

From 1960 to 1975

For the first part of the analysis from 1960 to 1975 the first and most important assumption of liner regression analysis is violated. There is no linear or linearisable relationship. Figure 20 show that for the variable *Economics* as an example.
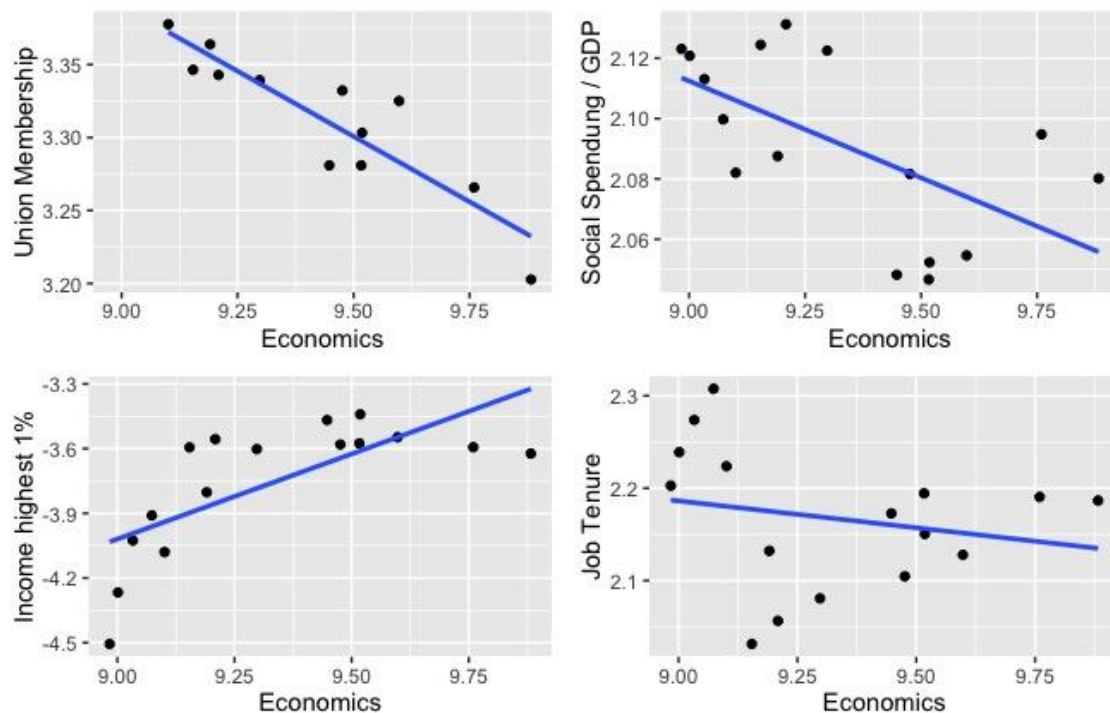
Figure 8: Visualisation of the relationship between the logarithms of the exogenous variables and the endogenous variable Economcis between 1960 and 1975.

From 1985 to 2005

Table 5 shows the estimated results for the first model.

	Dependent variable:				
	Log (Economics) (1)	Log (Labor ket) (2)	Mar-	Log (Land) (3)	Log (Money) (4)
L(1/(log(UnionMemb)), 5)	-8.0* (4.1)	-21.5 (29.1)		-12.4 (19.6)	-3.3 (19.1)
L(1/(log(SocialS.GDP)), 5)	-3.4 (2.1)	3.4 (11.7)		2.8 (9.6)	-4.9 (9.9)
L(log(Income1.), 5)	0.2** (0.1)	2.0* (1.1)		1.2* (0.6)	1.3** (0.5)
L(1/(log(JobTenure)), 5)	-3.4** (1.3)	-12.6 (9.5)		-7.4* (4.1)	-8.6 (6.0)
trend(Economics)	0.1*** (0.01)				
trend(Labor.Market)		0.1 (0.1)			
trend(Land)				0.1 (0.1)	
trend(Money)					0.1 (0.1)
Constant	12.3*** (2.2)	13.5 (12.9)		10.1 (8.9)	5.7 (10.2)
Observations	21	21		21	21
R^2	0.9807	0.9429		0.8804	0.933
Adjusted R^2	0.9743	0.9238		0.8406	0.9107
Residual Std. Error (df = 15)	0.03	0.2		0.1	0.1
F Statistic (df = 5; 15)	152.7***	49.5***		22.1***	41.8***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3: Results for Model 1. Newey-West standard errors are reported in parentheses

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A Log-Log-Model estimates the elasticities between the endogenous and exogenous variables. Noticeable in Model 1 is, that between the exogenous variables *UnionMemb*, *Income1.* and *JobTenure* and all endogenous variables a rectified relationship exists. For the variables *UnionMemb* and *Job.Tenure* this relationship is negative, but for *Income1.* positive. For the exogenous variables *SocialS.GDP* exists for the endogenous variables for *Economics* and *Money* a negative relationship, for *Labor Market* and *Land* a negative relationship.

The estimation of Model 2 shows the following results:

	Dependent variable:	
	Log (Liberalization) (1)	Log (Regulation) (2)
L(1/(log(UnionMemb)), 5)	-48.7* (27.2)	-14.6* (7.8)
L(1/(log(SocialS.GDP)), 5)	21.1 (12.7)	13.3* (7.6)
L(1/(log(JobTenure)), 5)	-45.5*** (8.8)	-9.0 (5.7)
trend(Liberalization)	0.4*** (0.1)	
trend(Regulation)		0.1** (0.03)
Constant	42.0*** (13.3)	17.4*** (4.3)
Observations	21	21
R^2	0.9658	0.9151
Adjusted R^2	0.9572	0.8938
Residual Std. Error (df = 16)	0.2	0.1
F Statistic (df = 4; 16)	112.9***	43.1***

Note: $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Table 4: Results for Model 2. Newyes-West standard errors are reported in parentheses

Only for the second part of the analysis between 1895 and 2005 both models could be estimated. Both models suffer heavily from multicollinearity. Therefore the estimators cannot be interpreted meaningful.

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Conclusion and discussion

The purpose of this paper was to investigate, if there is a Polanyi's pendulum in economics and, if there is one, to identify variables the pendulum depends on. Based on theoretical considerations keywords have been defined and bibliometric data on those keywords was been collected. For all keywords considered, a change in their development of the growth rates could be identified around 1980. This point in time matches the start of a liberal phase (see Nölke and May 2013).

In a second analytical step for all keyword ten year rolling correlations between Economics and the five key words have been calculated for the years between 1965 and 2015. A structural break around 1980 was shown for every key word. Again these findings match the theoretical considerations regarding the change in the phases of capitalism.

Additionally, the ten year rolling correlation between Liberalization and Regulation has been calculated. Up until 1978 the correlation coefficient declines noticeably. Shortly before the liberal phase from 1980 and 2010 the correlation clearly increases. Comparing this result to new yearly publication numbers one can see that the development of the correlation coefficient is explainable by the growth of the number of publications for the keyword *Regulation*. While the numbers of publications per year for Liberalization rose steadily, the development for Regulation is differently. In the 1970s the number of publications rose sharply, but ended abruptly and even turned negative. Even this observation corresponds to the by Nölke and May (2013) proposed calendar.

The analysis of growth and correlation behaviour provides indications, that a Polanyi's pendulum is present. Noticeable are the structural breaks, which are located at those points in time, where one would assume them to be from pure theoretical considerations. Nevertheless, it was not possible to support the thesis of a Polanyi's pendulum using a time-series regression. Based on the results of this paper it in neither appropriate to confirm nor dismiss the hypothesis of a pendulum. Further investigation and alternative research methods such as non-parametric regressions should be employed to resolve the puzzle.

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Appendix

A – raw data of the number of publications

Jahr	Economics	Labor Market	Land	Money	Liberalization	Regulation
1950	835	0	8	3	0	11
1951	462	1	10	1	0	4
1952	513	0	10	5	0	1
1953	612	1	8	3	0	1
1954	683	0	7	2	0	1
1955	721	0	5	1	0	1
1956	7112	16	37	59	1	26
1957	7840	16	45	57	3	30
1958	7718	8	59	48	2	21
1959	7897	7	58	53	1	22
1960	7971	3	58	53	0	24
1961	8114	9	50	54	2	16
1962	8375	8	61	48	4	26
1963	8722	19	64	49	1	29
1964	8962	16	62	47	3	28
1965	9807	13	54	79	2	35
1966	9453	17	50	101	1	44
1967	9986	17	48	94	1	44
1968	10912	20	74	103	6	38
1969	13041	25	69	137	10	41
1970	14737	17	81	147	9	52
1971	13605	27	59	138	5	53
1972	12678	36	81	146	4	45
1973	13581	35	69	122	3	65
1974	17320	44	117	175	5	123
1975	19585	58	82	138	4	150
1976	20164	49	119	179	4	168
1977	21208	78	111	232	1	219
1978	21968	57	104	220	4	316
1979	22284	83	132	255	7	380
1980	22357	74	127	250	6	308
1981	22010	89	135	216	6	318
1982	22755	94	130	229	5	320
1983	24363	126	108	256	3	322
1984	25046	119	133	249	10	315
1985	25267	161	158	277	10	306
1986	24641	128	126	220	17	267
1987	24907	150	114	226	21	264
1988	25828	153	167	248	45	324

1989	25552	158	145	268	26	301
1990	26354	150	132	306	38	355
1991	27418	281	219	374	51	491
1992	27815	388	250	493	91	561
1993	29101	441	269	523	121	581
1994	30029	420	250	477	105	589
1995	31589	475	278	559	117	614
1996	34234	508	271	580	105	661
1997	36175	546	292	611	176	666
1998	36398	542	278	655	175	668
1999	36118	584	311	699	170	627
2000	35416	573	280	676	171	691
2001	35040	580	326	646	168	679
2002	36784	644	309	712	189	694
2003	38597	636	312	720	211	744
2004	38737	732	336	705	243	798
2005	41725	742	341	745	236	984
2006	44369	807	417	797	275	963
2007	48052	927	496	856	313	1105
2008	54308	1035	548	961	370	1444
2009	58405	1237	631	1074	413	1612
2010	59952	1348	621	1000	429	1691
2011	63817	1290	681	1178	431	1867
2012	66025	1437	697	1121	431	2080
2013	66868	1507	767	1149	444	2067
2014	65753	1513	894	1068	450	2059
2015	60509	1639	782	1070	442	2124

Quelle: Web of Science

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