

A Bibliometrical Analysis of Thorstein Veblen's writings and ideas ♦

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Resumo

A obra de Thorstein Veblen foi um marco na ciência econômica norte americana no final do século XIX e início do século XX. Veblen é geralmente caracterizado como um dos fundadores do Institucionalismo Americano, corrente do pensamento econômico que competiu com a Economia Neoclássica no processo de *mainstreaming* da ciência econômica norte americana durante a primeira metade do século XX. Dado o enorme impacto dos escritos de Veblen na ciência econômica, é possível encontrar artigos econômicos *mainstream* que mencionam a contribuição de Veblen – portanto, ela não seria uma exclusividade da abordagem heterodoxa. O objetivo do nosso estudo é investigar como artigos publicados por periódicos heterodoxos e *mainstream* lidam com os escritos de Veblen. Nossa investigação é baseada em uma análise bibliométrica para identificar como as ideias econômicas de Veblen são mencionadas em artigos publicados pelos principais periódicos heterodoxos e *mainstream*. A bibliometria também é aplicada, em nosso artigo, para construir indicadores e analisar padrões.

Palavras-chave

Thorstein Veblen, Periódicos *mainstreaming*, Periódicos ortodoxos, Periódicos heterodoxos, Bibliometria

Abstract

Thorstein Veblen's work was a cornerstone in American economics during the late 19th and early 20th century. Veblen is usually characterized as a founding father of American Institutionalism, which competed with Neoclassical Economics in the mainstreaming process of American economics during the first half of the 20th century. Given the huge Veblen's writings impact on economics, it is possible to find mainstream economics papers that mention Veblen's contribution – hence, they would be not an exclusivity of the heterodox approach. The goal of our study is to investigate how papers published by heterodox and mainstream journals deal

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with Veblen's writings. Our investigation is based on a bibliometric analysis to identify Veblen's economics ideas as referenced in papers published by top heterodox and mainstream journals. Bibliometry is also applied in our paper to build indicators and analyze patterns.

Keywords

Thorstein Veblen, Mainstream journals, Orthodox journals, Heterodox journals, Bibliometry

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1. Introduction

Digital information has changed the world, and consequently, how economists deal with information. In the past, great universities were associated with majestic physical libraries. Today, these universities also provide digital platforms to their communities. Concerning academic journals, these digital platforms offer the same information as libraries, but in a different format. This leads to new possibilities of analyses in economics and other sciences. Among these analyses is bibliometrics. Bibliometrics relies on the quantitative study of digitally published documents such as scientific papers that allows generalizations of outcomes of scientific research, thereby providing a means to understand the evolution of science (see Shaer 2013). Bibliometric studies in the field of economics are currently in their early years.

Bibliometrics has been applied in economics to understand the discipline through research in the field. For instance, Fourcade, Ollion, and Algan (2015) relies on citation patterns to address findings about economics' insularity, dominant position in social sciences in the US, and changes in economics after the post-World War II period. Another illustration of economics' bibliometric studies that rely on citation patterns is Aistleitner, Kapeller, and Steinerberger's (2019) study on the disciplinary character of economics. It concludes that economics is a stratified discipline, in which economists show greater awareness for institutional incentives, and modern mainstream economics dominates the discipline.

Angrist et al. (2020) follows Fourcade, Ollion, and Algan (2015) and Aistleitner, Kapeller, and Steinerberger (2019) in dealing with citation patterns, and the relationship between economics and other sciences.

Angrist et al. (2020) concludes that economics is the most influential social science. In terms of extramural influence, empirical economics plays a key role (Angrist et al. 2020). Another bibliometric approach applied in economics that relies on patterns of mutual citations suggests two things: (1) influential references and (2) groups of authors influenced by the same references. An example of this approach is the study by Pieters and Baumgartner (2002). Claveau and Gingras (2016) goes further into the bibliometric method to understand the specialties in economics. While the other papers mentioned in this paragraph rely on citation patterns, Claveau and Gingras (2016) goes through the Web of Science relying on bibliographic coupling, algorithmic community detection, and text mining to identify changing specialty structures in economics from 1956 to 2014.

Within heterodox economics, there are two kinds of bibliometric studies. One deals with heterodox economics as a segmentation of a unit by place, group, subject or, and the other as a segmentation by heterodox literature itself. Glötzl and Aigner (2018) illustrates the segmentation by place in terms of the economic discourse in Austrian economics departments, two mainstream and one heterodox. The study by Zacchia (2021) is an example of segmentation by the subject of gender issues. To build a social network analysis of journal citations, Zacchia (2021) studies the Research Papers in Economics (RePEc) database using bibliometrics to analyze gender issues and gender differences in the socially-constructed nature of excellence. Another illustration of segmentation by subject is a study by Almeida and De Paula (2019). It studies the genealogy of different heterodox meanings of uncertainty in heterodox journals using bibliometrics for analysis. The other kind of bibliometric study in heterodox economics deals with a segmentation of heterodoxy according to the literature instead of offering a segmentation of a unit. For example, Teixeira (2014) studies the evolution of literature on the National Systems of Innovation. Another illustration is Hodgson and Lamberg (2018) that studies the path taken by evolutionary economics since Nelson and Winter's 1982 book. The current study falls under the category of studies that deal with the segmentation of heterodoxy by literature.

This study deals with how economics incorporated Thorstein Veblen's contributions. Veblen (1857–1929) is often characterized as a founding father of institutional economics, also known as original or old institutional economics and American institutionalism by institutionalists (Gruchy 1947: Chapter 2, Mayhew 1987, and Hodgson 2004). Although institutio-

nal economics is a heterodox approach, mentions to Veblen's writings in today's mainstream studies are not rare, examples of which are Arrow and Dasgupta (2009), Luttmer (2005), and Mandel (2009). Hence, the hypothesis of this paper is that there are two interpretations of Veblen's writings. One interpretation is the institutionalist or heterodoxy interpretation. The other interpretation is the mainstream interpretation.

The hypothesis tested in this study are justified based on the historiographical interpretation of the beginning of institutional economics. Recently, Kaufman (2017) argues that the institutional tradition was launched by Walton Hamilton in 1918 at the American Economic Association (AEA) Annual Meeting.¹ However, Rutherford (1997) provides a different perspective, but also affirmed that institutional economics became a self-identified movement in 1918. Rutherford (1997) stresses not only Hamilton's (1919) importance for this self-identification, but also the other papers presented at the "Economic Theory" session at the AEA Annual Meeting in 1918, including Clark (1919), Ogburn (1919), and Stewart (1919). Such a perspective would consider Veblen closer to an inspiring figure than a founding father of institutional economics, as usually argued by institutionalists (see also Rutherford 2011). Following such logic, Veblen could be understood as a thinker from an economic academia that was predominantly pluralistic and eclectic, not dominated by any one school of thought in the United States at the beginning of the 20th century as shown by Morgan and Rutherford (1998).²

This study analyzes whether Veblen's economics ideas have an impact only on heterodox economics – in this case Veblen's economics ideas would be strongly associated with institutional economics – or on both heterodox and mainstream economics. This study analyzes how heterodox and mainstream economics deals with Veblen's economics ideas by examining papers published by journals considered heterodox and mainstream. The investigation is based on a bibliometric analysis to identify papers from top heterodox and mainstream journals that use Veblen's economics ideas as a reference. Bibliometrics is also applied to build indicators and analyze

¹ Hamilton's paper was published by the American Economic Review (Hamilton 1919). Kaufman (2017) highlights that he borrowed Hodgson's (2001) affirmation that Hamilton (1919) inaugurated or launched original institutional economics.

² The idea that Veblen is a figure from a pluralistic economic academia is reinforced by his path. Veblen held positions at great universities including the University of Chicago, Stanford University, and The New School for Social Research (which Veblen helped found), and was editor of the Journal of Political Economy from 1895–1906. Clearly, those were not a dissenter's achievements. Veblen was not marginalized during his time as a considerable part of the heterodox community is today.

patterns. The next section introduces how the sample was built. Section 3 analyzes the most relevant papers published by heterodox and mainstream journals that contain the word “Veblen” in them. Section 4 highlights a co-citation cluster map of papers in heterodox and mainstream journals that contain the word “Veblen” to study the analytical structure of the papers. Finally, Section 5 concludes the paper.

2. Sampling Criteria

It is beyond the scope of this paper to provide inferences on every study or debate that included Thorstein Veblen’s writings or ideas. Therefore, the top economics journals were chosen as a proxy for studies regarding Veblen’s contribution to economics. To ensure that the top economics journals were considered, Lee and Cronin’s (2010) ranking was chosen because of its clear distinction between heterodox and mainstream journals. The top 20 journals of each type were chosen to build a representative sample that would allow relatively reasonable and reliable inferences from papers about Veblen’s economics approach. The metadata was obtained from the Journal Storage (JSTOR) digital library. JSTOR’s research platform provides access to bibliometric information, such as authors, source, title, abstract, bibliographic references, footnote, and others, from a significant set of scholarly journal articles, books, and others. There are two additional reasons that justify the use of JSTOR: (1) its historical range, providing access to the first volumes of the selected journals, and (2) its search capacity, allowing word searches from the entire text selected.³

Given that JSTOR provides the metadata for this study, the articles were selected from Lee and Cronin’s (2010) top 20 heterodox and mainstream journals that contain the word “Veblen” in any section.⁴ Assuming that the mention of the word “Veblen” at least once in the body of the text indicates that the paper deals with ideas developed by Veblen,

³ Other popular digital libraries for bibliometric studies are Web of Science and Scopus. Disadvantages associated with using these digital libraries are: (1) they do not provide searching by words through the full text; hence the title, keywords, abstract, and references are the only text available for search; and (2) the historical range of Web of Science and Scopus is more limited than JSTOR’s, as they only cover works from the second half of the 20th century onward.

⁴ Occasionally, different types of texts such as book reviews were identified as part of our sample using bibliometrics, even using the JSTOR-provided filter for research articles. Those texts were eventually manually removed from the sample.

the article becomes part of the sample. The bibliometric analysis used in this study sets the 20th century as its time period. Since Veblen's main contribution was published during the end of the 19th century until the beginning of the 20th century, the latter would be enough to perceive readings of Veblen's writings.

Some may argue that fixing mainstream journals would be problematic as mainstream economics changes over time, as pointed out by Colander, Holt, and Rosser (2004) and Dequech (2007). We agree that mainstream economics changes; however, we believe that changes in mainstream economics does not necessarily imply a modification in mainstream journals. The argument follows a sociological definition of mainstream, which refers to predominant social thoughts that are congregated by a large number of followers and is characterized by ideas that hold the largest influence and prestige in the profession (Colander, Holt, and Rosser 2004 and Dequech 2007).

As stated by Dequech (2007), the mainstream consists of ideas that an elite of a profession considers acceptable, which dominates the main associations, conferences, and journals. These associations, conferences, and journals are means to identify the mainstream, hence they cannot be too sensitive to change. Otherwise, it would not be possible to perceive it as mainstream. Once a journal becomes a top mainstream journal, it tends to preserve this status and makes it possible to perceive the evolution of the mainstream through its published papers (see Dequech 2007). From a sociological perspective of the mainstream, a sociological identification of heterodoxy can take place, despite its implication of a negative definition of heterodoxy that is contrary to the mainstream. However, according to Wrenn (2007), there is no clear or univocal definition of the meaning of heterodox economics as it congregates several approaches such as Post-Keynesian economics, institutional economics, and Marxism. Hence, we can take a sociological perspective to identify heterodox journals. According to Backhouse (2000 and 2004), heterodox economists build their own associations, conferences, and journals. Their goal would not only be about establishing and developing heterodox knowledge, but also about developing a survival strategy preventing heterodox economists from being eliminated from the discipline by their mainstream counterparts (see Lee 2012 and Mata 2014).⁵

⁵ For instance, in addition to the sociological perspective of heterodoxy, it is possible to define it by

Going through Lee and Cronin's (2010) top 20 heterodox and mainstream journals that published papers containing the word "Veblen" in the 20th century, a sample comprising 7 heterodox journals with 980 articles, and 11 mainstream journals with 422 articles, as shown in Table 1, was identified.⁶ However, not all of the top 20 heterodox and mainstream journals are part of the sample because not all of them were available on JSTOR when we conducted our bibliometric study.

Table 1 - Research-articles by journal

Mainstream Journals		Heterodox Journals	
Brookings Papers of Economic Activity	0	Cambridge Journal of Economics	32
Econometrica	8	Feminist Economics	0
Economic Geography	8	Journal of Economic Issues	674
Economic Policy	0	Journal of Post Keynesian Economics	25
Journal of Economic Geography	0	Review of International Political Economy	7
Journal of Economic Growth	1	Review of Social Economy	62
Journal of Economic Literature	28	Science & Society	38
Journal of Labor Economics	0	The American Journal of Economics and Sociology	142
Journal of Political Economy	92	-	-
The American Economic Review	153	-	-
The Economic Journal	25	-	-
The Journal of Economic Perspectives	11	-	-
The Quarterly Journal of Economics	80	-	-
The Review of Economic Studies	4	-	-
The Review of Economics and Statistics	12	-	-
Total	422	Total	980

Source: Authors relying on JSTOR as digital library

A great number of mainstream economics papers in our sample are from the American Economic Review (AER). Among heterodox journals, the majority of papers was published by the Journal of Economic Issues (JEI).

unifying features, such as done by Davis (2008a) and Lawson (2004 2006). For Davis (2008a), heterodoxy is characterized by an analytical tripod composed of institution, history, and social structure. According to Lawson (2004 and 2006), heterodox economics is an open system that deals with processes. Alternatively, some can rely on a definition of heterodoxy provided by experts, such as Wrenn (2007) that studies the perceptions of historians of economic thought on heterodoxy, and Mearman (2011) that analyzes the perceptions of the members of the Association for Heterodox Economics.

⁶ The files obtained through the JSTOR digital library were organized by the R statistical program. The bibliometric analyses of words in the titles and references of papers were conducted using the VOSviewer software. For technical information about VOSviewer software and its mapping and clustering techniques, see Aria and Cuccurullo (2017), Van Eck and Waltman (2010 and 2014), and Waltman, Van Eck and Noyons (2010).

These facts are related to the history of the associations that sponsor the journals, the American Economic Association (AEA), and the Association for Evolutionary Economics (AFEE), respectively. The AEA was founded in 1885, in no small part due to Richard T. Ely, a predecessor of the institutional movement in the United States, and professor of John R. Commons, who is also considered a founding father of American Institutionalism (Coats 1985). Hence, the AER welcomed institutional studies. According to institutionalists, this situation changed in the middle of the 20th century (Cavalieri and Almeida 2015). Because of the mainstreaming process of economics in the United States, the institutionalists felt outcast from AEA and, consequently, from the AER. As a result, institutionalists founded the AFEE in 1965, and its journal JEI in 1967 (Rutherford 2015; Cavalieri and Almeida 2017).

Regarding the journals that were not available on JSTOR, we did the same search considering the Web of Science and Scopus digital library. The result of that research can be seen in Table 2. Seven more papers were found in mainstream journals and 72 more papers were found in heterodox journals. Since that new search culminated in a small addition of papers for our sample and followed a different search criterion than the one used on the JSTOR digital library, we chose to exclude these new data from subsequent bibliometric analyses.

Table 2 - Research-articles by journal

Mainstream Journals		Heterodox Journals	
Journal of Accounting and Economics	0	Capital and Class	4
Journal of Financial Economics	1	Development and Change	3
Journal of Health Economics	5	Economy and Society	3
Journal of International Economics	0	European Journal of the History of Economic Thought	6
Journal of Monetary Economics	1	International Labour Review	0
-	-	Journal of Economic Behavior and Organization	20
-	-	Journal of Evolutionary Economics	3
-	-	Metroeconomica	2
-	-	Rethinking Marxism	2
-	-	Review of Political Economy	16
-	-	Review of Radical Political Economics	13
Total	7	Total	72

Source: Authors relying on Web of Science and Scopus.

The bibliometrically generated data from the top journals allows us to analyze the most representative papers that contain the word “Veblen” in any part of the text. We then ranked the top 10 most relevant papers and analyzed them, as shown in the next section.

3. Most Relevant papers

Researchers working with the JSTOR platform can build a ranking of the most relevant papers. Hence, after establishing our sample through JSTOR, we identified a ranking of relevance for the papers in the sample. It is not just a ranking of citations per article, as it takes into account a set of other factors, such as a weight for the most recently published ones and the relevance of the journal and the article to the public in a scientific field. Such papers' relevance is given by the JSTOR itself.⁷

Table 3 - Most Relevant Papers

	Mainstream Papers	Mainstream Papers Post-1967	Heterodox Papers
1	Gruchy (1958)	Basmann, Molina, and Slotje (1988)	Rutherford (1998)
2	Dorfman (1958)	Bagwell and Bernheim (1996)	Walker (1978)
3	Sweezy (1958)	Bronfenbrenner (1985)	Hodgson (1992)
4	Basmann, Molina, and Slotje (1988)	Samuelson (1974)	Hodgson (1998b)
5	Scott (1933)	Persky (2000)	Tilman and Fontana (1985)
6	Harris (1951)	Hodgson (1998a)	Edgell and Tilman (1989)
7	Bagwell and Bernheim (1996)	Fusfeld (1973)	Weed (1981)
8	Coats (1954)	Karni and Schmeidler (1990)	Gilman (1999)
9	Davis (1945)	Findlay (1978)	Stabile (1987)
10	Anderson (1933)	Hayakawa and Venieris (1977)	Vatter (1964)

Source: Authors relying on JSTOR as digital library

It is important to address that what we are calling mainstream papers are articles published by mainstream journals; the same applies to heterodox papers and heterodox journals. Hence, once mainstream or heterodox papers are mentioned, the terms do not refer to methodological or theoretical issues but the type of journal in which they were published.

⁷ For more details about relevance see JSTOR Website <<https://www.jstor.org/>>.

Based on the ranking of the most relevant papers published by mainstream journals, Table 3 shows there is a common issue with the top three papers. Gruchy (1958), Dorfman (1958), and Sweezy (1958) are papers that comprised the “Veblen Centenary Round Table,” introduced at the AEA Annual Meeting 1957.⁸ Gruchy (1958) introduces a study on the evolution of Veblen’s ideas by his followers. Dorfman (1958) relies on Veblen’s professional path and Sweezy (1958) analyses how Veblen dealt with technology in his writings. Clearly, those three papers cannot be characterized by the mainstream of their time, when neoclassical economics was at the core of the mainstream. Further, Allan Gruchy, Joseph Dorfman, and Paul Sweezy were not mainstreamers. Gruchy was a Veblenian institutionalist, Dorfman was a historian of economics, and Sweezy was a radical economist. Surprisingly, Gruchy (1958), Dorfman (1958), and Sweezy (1958) are not exceptions among the most relevant mainstream papers.⁹ When we build the ranking of the most relevant mainstream papers, we hypothesized that a mainstream paper would follow the mainstream methodology and/or a mainstream reading of Veblen’s writings or ideas – in line with Leibenstein’s (1950) Veblen Effect – that prevailed at its time of publication. However, our hypothesis was refuted by the analysis of the most relevant papers.¹⁰

Among the other most relevant mainstream papers, Scott (1933) relies on Homan (1932), which approves of the classification of Veblen as an institutional economist but refutes Institutional Economics as a school of thought. Scott (1933) stresses that there is an intellectual movement called Institutional Economics but simultaneously raised doubt on classifying Veblen as an institutionalist. Harris (1951) classifies Veblen as a thinker focused on understanding capitalism, and compares his work with that of Marx, Sombart, and Weber. Harris thus sought to understand Veblen’s reading of the capitalist system. Coats (1954) is a paper on Veblen’s methodology. According to Coats (1954), the literature on Veblen had neglected his contribution to the methodology of American economics. Davis (1945) also deals with Veblen’s methodology and focuses on Veblen’s criticism of classical and neoclassical economics, his notion of economics, and the place of sociological elements and ethics in Veblen’s writings. Anderson

⁸ Besides Gruchy (1958), Dorfman (1958), and Sweezy (1958), Vukasin and Zinke (1958) introduces the comments on the round table.

⁹ By mainstream papers we mean papers published by top mainstream journals.

¹⁰ Leibenstein’s Veblen Effect is a famous orthodox interpretation of *The Theory of the Leisure Class*, the first and most famous book of Thorstein Veblen. Leibenstein (1950) offers a possible incorporation of Veblenian conspicuous consumption in a 1950s mainstream theory of demand. However, Leibenstein (1950) is just a possibility of a mainstream reading of Veblen’s writings.

(1933) advocates that Veblen's contribution to economics could be understood as a general theory standing apart from neoclassical economics – as a Marshallian version of neoclassical economics.

Among mainstream papers, only Basmann, Molina, and Slottje (1988) and Bagwell and Bernheim (1996) follow what can be understood as a mainstream analysis of their time. Basmann, Molina, and Slottje (1988) offers a test of Veblen's conspicuous consumption approach. Despite the fact that Basmann, Molina, and Slottje (1988) recognizes, in a footnote, that Veblen did not deal with a mathematical form for a utility function, the paper observes that Veblen "[...] put forward an explanatory theory of the utility of commodities that attempts to account for the formation and change of consumer preferences over time" (Basmann, Molina, and Slottje 1988: 531). Hence, we can assume that Basmann, Molina, and Slottje (1988) offers a mainstream reading of Veblen's ideas, focusing on utility maximization and marginal analysis. Bagwell and Bernheim's (1996) reading of Veblen's writings relies on the mainstream approach common to them: the Veblen effect.

Summing up, the mainstream papers ranking strongly refutes the assumption that the highly ranked papers would follow a mainstream methodology and/or a mainstream reading of Veblen's writings that was prevalent at their time. This may be because American economics, from the beginning of the 20th century, was pluralistic and eclectic (Morgan and Rutherford 1998). However, it could only be a partial explanation, as half of the papers identified as mainstream papers in Table 3 are from the 1950s. Among the mainstream papers from the 1950s, only Coats (1954) was not published by the AER and the two paper that would reinforce our hypothesis are from the 1980s and 1990s. We thus formulate a second hypothesis. During the first decades of its existence, the AER was a main vehicle for the Institutionalists' papers and studies on Institutional Economics. Because of the mainstreaming of American economics, focused on the neoclassical approach, and, mainly, the foundation of the AFEE and its JEI, a segmentation per journal took place. Hence, it was just after 1967 (JEI's foundation), and not after the mainstreaming of American economics around the neoclassical approach – in the second quarter of the 20th century – that we can perceive clearer mainstream and heterodox ways to deal with Veblen's writings in journals. Therefore, we built a second list of most relevant papers from mainstream journals published after 1967. Our second hypothesis is that, in a general sense, papers published after 1967 in mainstream journals would follow a mainstream reading of Veblen's ideas because the heterodox perspective would be part of JEI and other heterodox journals

founded after 1967.¹¹ We called this second list mainstream papers post-1967. As in the case of mainstream and heterodox papers, it is important to address that what we are calling mainstream papers post-1967 are articles published by mainstream journals after 1967.

Clearly, Basmann, Molina, and Slottje (1988) and Bagwell and Bernheim (1996) were the top two relevant papers of the mainstream papers post-1967 type. The bottom three of the mainstream papers post-1967 – Karni and Schmeidler (1990), Findlay (1978), and Hayakawa and Venieris (1977) – follow the same logic as the top two. Karni and Schmeidler (1990) introduces a possible accommodation of fashion in a mainstream consumer theory. Despite relying on a mainstream approach, Karni and Schmeidler (1990) also consider other schools, such as the Austrian School, in the model. This paper is part of our sample because its conclusive remarks rely on the Veblen Effect. Further, Findlay (1978) offers a dynamic model that looks to capture different forms of technological transference. It refers to Veblen's writings for the relationship between the gap in the development levels of countries and the velocity of the catching up of the developing country, which, according to Findlay (1978), it is an argument from Veblen (1915). Hayakawa and Venieris (1977) addresses insights from Behavioral Economics looking to relax the neoclassical assumptions of exogenous tastes and independent preference relations. It makes use of Veblen's notion of emulation to associate consumption patterns with groups with which consumers want to be identified.

The middle part of the mainstream papers post-1967 – Bronfenbrenner (1985), Samuelson (1974), Persky (2000), Hodgson (1998a), and Fusfeld (1973) – is heterogeneous and does not rely on a mainstream reading of Veblen's ideas, which refutes our second hypothesis. Bronfenbrenner (1985) is a paper on the founding fathers of American economics, from the AEA's foundation to World War I and focusing on Institutional Economics and the American neoclassical approach. Hence, Veblen and other institutionalists,

¹¹ The JEI was the first heterodox journal. Shortly after, the others were founded. For instance, *Review of Radical Political Economics*, the Union for Radical Political Economics' journal, was founded in 1969, the *Cambridge Journal of Economics* in 1977, and the *Journal of Post Keynesian Economics* in 1978. The departure from AEA was a huge action. The circumstances that culminated in the AFEE and the JEI happened before 1967 (Cavalieri and Almeida 2015 and 2017). However, in order to address the second hypothesis, it was necessary to address the institutionalists departure from AEA and the year the JEI was founded. As this study relied on bibliometrics, identifying a precise year that defines a turning point associated with a gradual process was not problematic. Because bibliometrics generalizes the outcomes of papers that mention Veblen. Hence, an approximate year was only needed to understand the landmark of the institutionalists' departure from AEA.

such as John Commons and Wesley Mitchell, were included in the analysis. Next, those familiar with the history of economics or Paul Samuelson's works may assume that Samuelson (1974) would reinforce the mainstream reading of Veblen's writings. However, that is not the case. Samuelson (1974), for instance, is based on Paul Samuelson's participation in a colloquium about Marx. Samuelson (1974) characterizes Veblen as a leader of the American Left. He also quotes a passage from when he was the editor of the *Journal of Political Economy*.

Persky's (2000) is a paper on the evolution of the neoclassical approach in the United States, primarily the contribution of John Bates Clark. Veblen is quoted in relation to his criticism of Clark and the neoclassical approach. Geoffrey Hodgson is a British institutionalist who studies the methodology and theory of Institutional Economics. Hodgson (1998a) relies on introducing a difference between Institutional Economics and New Institutional Economics. A paper by Daniel Fusfeld, a radical economist, is also part of the mainstream papers post-1967 ranking. Fusfeld (1973) is his contribution in a session on "Radical economics and the history of economic thought" at the AEA Conference 1972. Fusfeld (1973) addresses thinkers not commonly associated with radical economics, but who could contribute to the radical debate, and Veblen is among them. Summing up, considering the most relevant papers, even after the foundation of heterodox journals the mainstream papers do not strictly follow a mainstream methodology and/or a mainstream reading of Veblen's writings. However, we can assume – regarding the most relevant papers – that mainstream journal became more inclined to follow a mainstream methodology and/or a mainstream reading of Veblen's ideas after 1967.

Regarding heterodox journals in the most relevant papers, the history of Veblen's writings has a prominent place. The most relevant paper, Rutherford (1998), analyzes Veblen's project to build an evolutionary economics. For Rutherford (1998), Veblen failed and the reasons for this failure are addressed and analyzed in the study. Walker (1978) is a paper on Veblen's "Essays, Reviews, and Reports: Previously Uncollected Writings" edited by Joseph Dorfman (Veblen 1973). According to Walker (1978), Dorfman's introduction to Veblen (1973), "New light on Veblen," is an autonomous study. Hence, Walker (1978) analyzes Veblen's reviews and essays and Dorfman's "New light on Veblen" as distinct works. Walker's point is to understand how Veblen's reviews and essays expressed how he would like to build an evolutionary science through his reviews and essays and Dorfman's reading of Veblen's reviews and essays.

In addition to being part of the most relevant mainstream papers post-1967, Geoffrey Hodgson figures twice in heterodox ranking: Hodgson (1992) and Hodgson (1998b). Both papers rely on an analysis of Veblen's evolutionary perspective. Rick Tilman is another economist who figures twice in the most relevant heterodox papers. Tilman and Fontana (1985) introduces the Italian authors' reaction to Veblen's writings and Edgell and Tilman (1989) addresses the influences on Veblen's thought.¹² Weed (1981) is a theoretical debate around Veblen's concept of institutions. It discusses key concepts for Veblen: instinct, habits, institutions, and the evolution of the latter. According to Weed (1981), Veblen's evolutionary economics does not give room for prediction; however, despite the fact that Veblen relies on hypothetical historical reconstructions, his writings could be empirically analyzed. Gilman (1999) stresses the key place of gender equality in Veblen's writings. Stabile (1987) highlights that Veblen understood the American business as divided in the social stability provided by institutions and technology, culminating in pecuniary and industrial forces. Stabile (1987) emphasizes that Veblen not only studies a technocracy but also the social elements of an economy. Vatter (1964) stressed that Veblen understood the power structure of society. However, Vatter (1964) adds that Veblen's perspective on power has been interpreted in various ways and has changed since Veblen's writings.

It is clear that the most relevant heterodox papers consider Veblen's background, methodology, and theoretical contributions. However, we cannot assume that papers published by mainstream journals ignore the subjects analyzed by heterodox papers, particularly when the 20th century is considered in a general sense. This is because of the pluralistic academic environment from the beginning of that century and the fact that the AER had been a vehicle of studies on Institutional Economics. We use the foundation year of the first heterodox journal as a landmark for building a new ranking of most relevant mainstream papers associated with the mainstream itself. Thereafter, we perceive a decrease in a more plural reading of Veblen's ideas; however, the papers of the second mainstream ranking do not rely strictly on a mainstream reading of Veblen's ideas. Based on the top ten most relevant papers, it is not possible to address a great difference between

¹² Unconventionally, Edgell and Tilman (1989) stresses twelve influences on Veblen's writings: (1) German influencers (Immanuel Kant and Gustav Von Schmoller); (2) David Hume; (3) Pragmatist Philosophers (Charles Peirce and John Dewey); (4) European Socialists (Marx and his followers); (5) Evolutionists (Charles Darwin and Hebert Spencer); (6) American Socialists; (7) British Socialists; (8) French utopian socialists; (9) Scottish Political Economists; (10) Norwegian Lutheranism; (11) Phycologists (such as William James); and (12) Anthropologists (such as Franz Boas).

mainstream and heterodox treatment of Veblen's economics. To offer more elements to our analysis, the next section examines the analytical framework of mainstream, mainstream post-1967, and heterodox papers.

4. References: co-citation networks

We also bibliometrically analyzed the references of the papers in our sample. The bibliometric analysis of the references relies on the study of co-citation networks. Co-citation is defined "as the frequency with which two documents are cited together" (Small 1973: 295). Two references were considered to be co-cited when both were referenced by at least one paper in our sample. Therefore, the references addressed by the cluster maps, in this item, represent the most relevant references for a particular discussion. In our study, the co-citation network points out the common analytical framework of papers quoting Veblen in our grouping of journals – mainstream, mainstream post-1967, and heterodox. This common analytical framework makes it possible to introduce an understanding of the papers that the cluster of co-citation relies on. We build cluster maps of the co-citation network to conduct such an analysis.¹³ Figure 1 below is the co-citation cluster map for papers published by mainstream journals.

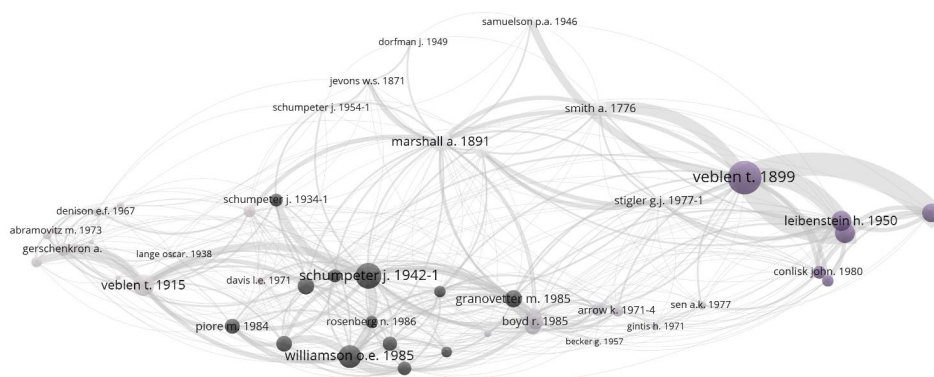


Figure 1 - Cluster map of the co-citation network - papers published by mainstream journals

¹³ Distance-based visualizations of bibliometric networks are presented here, where distance between nodes – *i.e.*, references, in this section, and words in the titles, in the next section – indicates its relatedness (Van Eck and Waltman, 2014). We illustrated just the most relevant nodes to offer a more useful visualization of the bibliometric networks and clusters maps – the structure of the figures would not change substantially. Furthermore, following those choices, we focused the analysis on the labels of the figures.

Near the top of Figure 1, there is a cluster composed by Dorfman (1949), Jevons (1871), Marshall (1891), Samuelson (1946), Schumpeter (1954), and Smith (1776). We named this Cluster 1.1 and we find that it was built on papers on the history of economic ideas, as these have cornerstone writings in economics as references – Jevons (1871), Marshall (1891), and Smith (1776). Another reference of Cluster 1.1 is Dorfman (1949), the third volume of Dorfman's books on American contribution to economics. This volume analyses contributions from 1865 to 1918, which encompasses the period when several of Veblen's writings were published. Schumpeter (1954) is the Austrian analysis of the evolution of economics ideas and Samuelson (1946) is the celebrated American textbook that summarizes the mainstream economics of its time¹⁴. Hence, we can affirm that one kind of analytical structure of mainstream papers that refer to Veblen is the history of economics analyses.

At the bottom of Figure 1, there are four clusters from left to right, which we named clusters 1.2, 1.3, 1.4, and 1.5. Cluster 1.2 is built on Veblen (1915), Gerschenkron (1962), Denison (1967), and Lange (1938) – the last is actually Lange and Taylor (1938), but the software only considers the name of the first author in building the cluster map. Veblen (1915) is the author's study on German industrialization, *Imperial Germany and the Industrial Revolution*. Gerschenkron (1962) contains fourteen studies from the 1950s by Alexander Gerschenkron, a great Russian-American economic historian and a Harvard professor interested in the industrialization of Europe¹⁵. Denison (1962) is a study on economic growth of Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, the United Kingdom, and the United States. Lange and Taylor (1938) is a classic book that contains Oskar Lange's application of economics theory to socialism. Accordingly, we can affirm that Cluster 1.2 comprises papers whose analytical framework is related to industrialization and growth of the United States and Western European countries. These papers take both historical findings – as Veblen (1915) and Gerschenkron (1962) – and economic models regarding the organization of economic system – as Denison (1962) and Lange and Taylor (1938) – into account.¹⁶

¹⁴ Samuelson (1946) quotes Veblen twice. On page 119, there is a mention of a Veblenesque effect in order to address its non-impact on preference and, on page 224, Veblen is mentioned to address conspicuous expenditure. Both mentions can be understood as an association of Veblen's ideas to a mainstream approach. However, it does not relate Cluster 1.1 to our hypothesis of a mainstream reading of Veblen's ideas. As Samuelson (1946) should be understood as part of an analytical framework composed by the studies of Cluster 1.1, it should not be interpreted in isolation.

¹⁵ For more about Alexander Gerschenkron, please see McCloskey (2000).

¹⁶ We affirmed that Cluster 1.2 relies on economic models regarding the organization of economic system because Denison (1962) is about models of economic growth concerning Western Europe and

Cluster 1.3 is associated with Schumpeter (1934 and 1942), Rosenberg (1986) – which is actually Rosenberg and Birdzell (1986) – Williamson (1985), and Piore (1984) - which is Piore and Sable (1984). The link of homogeneity among these works can be understood as the unconventional approaches to the firm and industrial organization. Veblen offered this kind of approach himself, in Veblen (1904) and, mainly, Veblen (1915). Therefore, we can assume that Cluster 1.3 was built on papers whose analytical background is non-mainstream approaches of the firm and industrial organization. Cluster 1.4 and 1.5 comprise fewer studies than the others, at three studies each, which suggests that the analytical framework is not well-defined as the ones addressed by Cluster 1.1, 1.2, and 1.3, because they have less data for understanding those clusters. Additionally, having fewer studies means the analytical framework of these mainstream papers that quote Veblen is less representative.

Cluster 1.4 is composed by Boyd (1985) (i.e., Boyd and Richerson, 1985) Gintis (1971), and Sen (1977). Boyd and Richerson (1985) applies methods of biological evolution to cultural progress, and may therefore be somehow related with Gintis (1971), as Hebert Gintis is well-known for his evolutionary studies. However, despite the path of evolutionary economics taken by Gintis in recent years, Gintis (1971) relates to his years as a radical economist with a solid training in mainstream economics. Gintis (1971) relies on mainstream techniques in order to refute a common mainstream assumption regarding the relationship between the workers' level of schooling and their earnings. Sen (1977) is the famous Amartya Sen's criticism to rationality as advocated by the mainstream. Hence, it is difficult to suppose the connection of the paper which compose Cluster 1.4. Of course, we can assume that Boyd and Richerson (1985), Gintis (1971), and Sen (1977) offer alternatives to the mainstream; however this is too broad a characterization of a cluster. Therefore, we assume that it is not possible to address a strong characterization of Cluster 1.4. Cluster 1.5 is built on Veblen (1899), Leibenstein (1950), and Comlisk (1980). We can understand Cluster 1.5 as a cluster associated with papers that have an analytical structure related to the mainstream approach of the conspicuous consumer. Veblen (1899) is an evolutionary approach to consumption that carries a critical reading of the capitalism of Veblen's time. Leibenstein (1950) introduces the most common mainstream reading of Veblen's conspicuous consumer: the Veblen effect – as previously mentioned. Comlisk

USA. Plus, Lange and Taylor (1938) discusses the organization of economic system in the socialism perspective taking price models into consideration.

(1980) is in line with Leibenstein (1950) by addressing a mainstream approach to the emulative/imitative consumer.

As previously highlighted, we had a hypothesis that mainstream papers would follow the mainstream methodology and/or a mainstream, prevalent in their time, reading of Veblen's writings – it was refuted by the analysis of the most relevant papers. Hence, to reinforce our hypothesis, we expected that clusters of co-cited references from mainstream papers would point to a framework associated with mainstream studies and studies about the mainstream reading of Veblen's writings. We find this in just one cluster, Cluster 1.5, and it is not a well-defined analytical framework. Consequently, we can affirm that the co-citation network of mainstream papers reinforce the refutation of our hypothesis. Additionally, the co-cited references demonstrate that the analytical frameworks of mainstream papers are heterogeneous and pluralistic. Those analytical frameworks are grouped as history of economics (Cluster 1.1), historical findings and economic growth models (Cluster 1.2), non-mainstream approach of the firm and industrial organization (Cluster 1.3), a broad characterization of alternatives to the mainstream (Cluster 1.4) and, of course, a mainstream reading of Veblen's conspicuous consumer (Cluster 1.5) – the latter two analytical frameworks are not as well-defined as the former three. As in the case of most relevant papers, we also provided metrics regarding mainstream papers post-1967. Figure 2 illustrates a co-citation cluster map for mainstream papers post 1967.

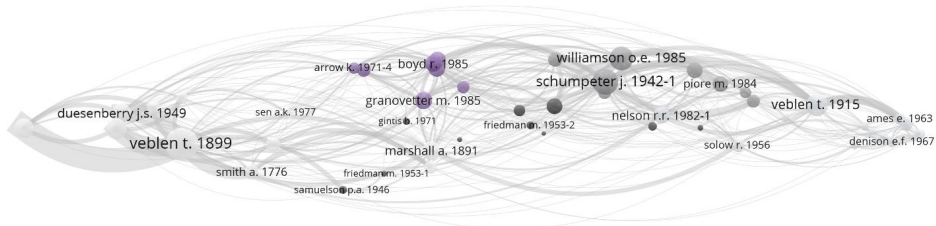


Figure 2 - Cluster map of the co-citation network - papers published by mainstream journals after 1967

There are five clusters in Figure 2. We named them Clusters 2.1, 2.2, 2.3, 2.4, and 2.5, from the left to the right. Just two of those clusters are composed by more than two studies, Clusters 2.1 and 2.5. Consequently, the analytical frameworks of mainstream papers quoting Veblen are loose and

not well defined after 1967. Clusters built on less co-cited studies means fewer connections made between the analytical frameworks of the papers published by mainstream journals after 1967. It indicates a lack of analytical unity of papers that quote Veblen's ideas. Such a lack of definition and looseness of the analytical framework becomes more intense when we consider that we cannot assume a synergy among studies that comprise one of the clusters built on more than two papers, Cluster 2.1.

Cluster 2.1 is composed of five papers – Duesenberry (1949), Sen (1977), Marshall (1891), Smith (1776), and Veblen (1899). There is a great heterogeneity among those studies. A comparison between Figures 1 and 2 illustrate such heterogeneity. Cluster 2.1 comprises studies that are also part of Cluster 1.1 – Smith (1776) and Marshall (1890) – Cluster 1.4 – Sen (1977) – and Cluster 1.5 – Veblen (1899). Duesenberry (1949) is not part of Figure 1, but is related to a mainstream reading of the conspicuous consumer. Hence, Duesenberry (1949) would be associated with the kind of analytical background addressed by Cluster 1.5. Accordingly, what we previously classified as clusters on history of economic ideas, a too broad characterization of alternatives to mainstream, and mainstream approaches of the conspicuous consumer are the same post 1967. Therefore, the studies of Cluster 2.1 are too heterogeneous, which suggests a lack of unity associated with the analytical framework of mainstream papers post 1967 quoting Veblen.

Cluster 2.5 is the only one in Figure 2 that we were able to identify as an analytical framework. It is composed by Veblen (1915), Denison (1967), Solow (1956), and Nelson (1982) – the latter is Nelson and Winter (1982). Cluster 2.5 can be read as a post-1967 version of Cluster 1.2 as both clusters are associated with Veblen (1915) and Denison (1967). Solow (1956) is in line with the latter, as it regards a model of economic growth. The same applies to Nelson and Winter (1982) as it offers a Neo-Schumpeterian perspective on economic growth. Cluster 1.2 was previously classified as having an analytical framework on both historical findings on economic progress and economic models regarding the organization of the economic system. If we consider Cluster 2.5 as the post-1967 version of Cluster 1.2, we can assume that the debate on models of economic growth are more representative – because of the presence of Solow (1956) and Nelson and Winter (1982) – after 1967. If we accept that Cluster 2.5 reflects Cluster 1.2 post-1967, a convergence upon models of economic growth means that such a cluster is closer to the mainstream

perspective.¹⁷ It would reinforce a finding of the analysis of the most relevant papers – mainstream papers more inclined to follow a mainstream methodology and/or a mainstream reading of Veblen's writings after 1967. However, we must stress that just one cluster reinforced the findings of most relevant papers.

In summary, there is a change when we consider the co-citation of studies in papers published by mainstream journal and papers published by mainstream journals after the institutionalization of heterodox journals. In the former case, there are clusters composed by several co-cited studies that suggests an analytical framework related to papers that mention Veblen, which indicates that Veblen's writings or ideas were part of the debates of mainstream papers. In this case, just two clusters are composed by a few studies, three studies each, and we were not able to classify just one cluster because of the heterogeneity of the co-cited studies. Once we considered papers published by mainstream journals after the institutionalization of heterodox journals, we found just one cluster carrying several co-cited studies whose analytical framework we were able to identify – and this cluster is inclined to a mainstream kind of analysis not clearly associated with Veblen's ideas, models of economic growth. There is another cluster that is also composed of several co-cited studies, however we identified a

¹⁷ It is difficult to distinguish the features of Clusters 2.2, 2.3, and 2.4, as each cluster is composed of just two studies; however, we make some observations about the clusters. Cluster 2.2 is composed of Boyd (1985), which is Boyd and Richerson (1985), and Granovetter (1985). As previously mentioned, the former analyzes cultural progress based on methods of biological evolution. Granovetter (1985) deal with decision-making regarding a socially embedded individual and the consequences of embeddedness. The connection between these two studies would be that they rely on other sciences than economics to deal with economics subjects. It is a weak connection that could be considered less weak if we consider the Boyd and Richerson (1985) cluster in Figure 1. Boyd and Richerson (1985) was part of Cluster 1.4 that was characterized as a cluster related to studies that offer alternatives to mainstream – a too broad characterization. In fact, Granovetter (1985) is an alternative to mainstream decision-making that would reinforce the association between Clusters 2.2 and 1.4. Nevertheless, Sen (1977) is also part of Cluster 1.4 but it composes Cluster 2.1. Therefore, we do not feel comfortable to suppose a feature of Cluster 2.2. Characterizing Cluster 2.3 has another kind of difficulty. Friedman (1953a) and Friedman (1953b) compose Cluster 2.3. Friedman (1953b) is a collection of Milton Friedman's papers including his famous and controversial methodological essay, Friedman (1953a). These studies are closely related – Friedman (1953a) is Part I of Friedman (1953b), but they are divided here because in some occasions just Part I is quoted and, in others, the book is quoted. Relying on Friedman's contributions is clearly the connection between the papers that co-cited Friedman (1953a and 1953b), and the connection with Veblen's ideas is not suggested. Cluster 2.4 is composed by Williamson (1985) and Schumpeter (1942). Hence, it has an association with Cluster 1.3, which is also composed by the same studies plus Rosenberg and Birdzell (1986) and Piore and Sable (1984). We cannot be as assertive as in the case of Cluster 1.3 in affirming that Cluster 2.4 is related to studies on non-mainstream approaches of the firm and industrial organization, as we have less data – studies associated with the cluster. However, we can timidly suggest that Cluster 2.4 is a post-1967 version of Cluster 1.3.

lack of unity and three other clusters are associated with just two co-cited studies each. Hence, when we analyze papers published by mainstream journals after the institutionalization of heterodox journals, Veblen's writings and/or ideas seems to be less important to economics debate than papers published by mainstream journals in a general sense.

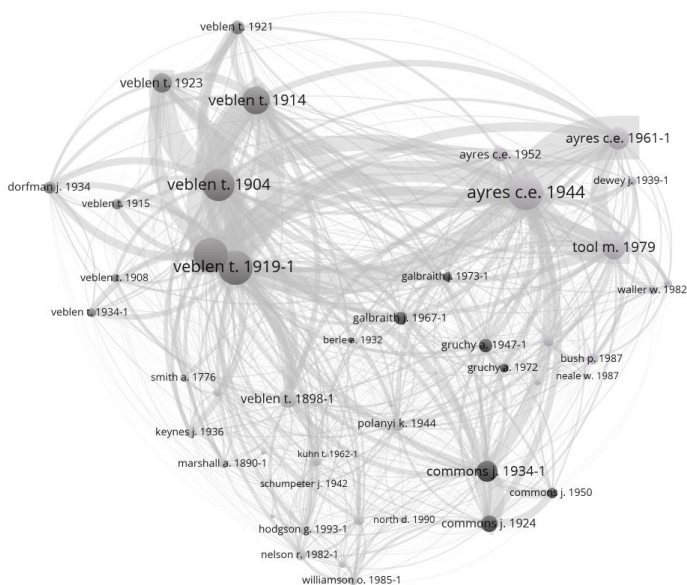


Figure 3 - Cluster map of the co-citation network – papers published by heterodox journals

Figure 3 shows a cluster map of co-cited studies in papers published by heterodox journals. There are four clusters in Figure 3. From the left to the right, at the top of the figure, there are clusters 3.1 and 3.2, and at the bottom, there are clusters 3.3 and 3.4. Those clusters are composed of several co-cited studies, and the cluster associated with fewer studies, 3.2, contains six studies. In comparison with papers published by mainstream journals, when Veblen is mentioned by a paper from a heterodox journal, there is a stronger association with the co-cited studies those papers rely on.¹⁸ This indicates that papers from heterodox journals show greater analytical structure regarding Veblen's writings. Cluster 3.1 can be unders-

¹⁸ We can perceive a stronger association with the co-cited studies by heterodox journals than with mainstream papers and, mainly, mainstream papers post-1967. The reason for this is the previously highlighted less-defined and more loose analytical structure of the latter.

tood as an analytical framework of papers that have Veblen's writings as object of study or an analytical framework deeply that is connected to Veblen's economics. Cluster 3.1 is composed by Dorfman (1934) and Veblen (1904, 1908, 1914, 1919, 1921, and 1934). The former is the first biography of Veblen and the latter are six of Veblen's studies plus a collection of his essays (Veblen 1934). It addresses the importance of Veblen's writings and ideas for heterodox papers. Mainstream papers do not seem to place such great importance on the analytical background of Veblenian economics as seen in the heterodox papers of Cluster 3.1. Next to Cluster 3.1, we find Cluster 3.2, which we can characterize as an Ayresian institutionalism analytical structure. This is because it is composed by studies from Clarence Ayres – Ayres (1944, 1952, and 1961) – and from other Texan Institutionalists – Bush (1987), Tool (1979), and Waller (1982). Ayres was a main representative of American institutionalism from the period between the World Wars to the 1970s. Ayres carried the Veblenian legacy and founded a wing of American institutionalism called Texan Institutionalism or the Cactus Branch. Ayres was the charismatic leader of that segment of Institutional Economics and greatly influenced the institutional perspective of the group. Hence, we can assume that papers published by heterodox journals also took the evolution of Veblenian institutionalism by Ayersians into account as analytical structure.

We can affirm that Cluster 3.3 is the only cluster of the co-citation network of papers published by heterodox journals that has a relation with a cluster from mainstream journals. Cluster 3.3 is composed by Smith (1776), Veblen (1898), Polanyi (1944), Keynes (1936), Marshal (1890), Kuhn (1961), Schumpeter (1942), Hodgson (1993), Nelson (1982) – which is Nelson and Winter (1982) – and Williamson (1985). We can affirm that Cluster 3.3 was built on papers that have as analytical background studies on the history of economic ideas with a great inclination for analysis of the capitalist system – Smith (1776), Veblen (1898), Polanyi (1944), Keynes (1936), Marshal (1890), and Schumpeter (1942). Other studies that composes Cluster 3.3 seem to be instrumental to discuss the history of economic ideas, as Kuhn's (1961) approach to scientific paradigms and Hodgson's (1993) exploration of how economics borrows evolutionary analysis from biology. The latter is an unusual reference of studies of the history of ideas in a general sense, but usual for studies focused on the history of evolutionary economics. We can also find as part of Cluster 3.3 studies in other evolutionary or

institutional perspective than Veblen's – Nelson and Winter (1982) and Williamson (1985).¹⁹

Cluster 3.4 is composed by Commons (1924, 1934, and 1950), Galbraith (1967 and 1973), and Gruchy (1947 and 1972), and Berle (1932) – the celebrated book, Berle and Means (1932). John Commons is, alongside Veblen, usually considered a founding father of Institutional Economics. Commons (1924, 1934, and 1950) can be understood as the core of the Commonsian institutionalism. Galbraith (1967) is John Kenneth Galbraith's institutional reading of the contemporaneous corporation and industrial system of his time. Galbraith (1972) is his reading of a new form of economic association in a different fashion to what can be public and private. Gruchy (1947) is a seminal book on Institutional Economics, and offers an in-depth reading of the diverse intellectual movement called American institutionalism as a unit based on studies from Veblen, Commons, Wesley Mitchell, John Maurice Clark, Rexford Tugwell, and Gardiner Means. Gruchy (1972) can be understood as a sequel of Gruchy (1947), as the former introduces the institutionalism of Ayres, Galbraith, Gunnar Myrdal, and Gerhard Colm. Berle and Means (1932) is an approach to corporation by the structure of corporate law – hence being next to the Commonsian wing of Institutional Economics. As a consequence, we can understand Cluster 3.4 as a cluster built on studies that deal with Veblen's writings or ideas alongside other contributors of American institutionalism. Hence, the analytical structure of Cluster 3.4 relies on Institutional Economics in a broader sense – not only Veblenian Institutionalism.

¹⁹ We can identify some co-cited studies that suggest approaches similar to findings from papers published by mainstream journals. We also identified the history of economic ideas as a characterization of Cluster 1.1. If we consider that Cluster 3.3 is composed by Schumpeter (1942), Nelson and Winter (1982), and Williamson (1985), and those studies together mean an association with an unconventional approach of the firm and industrial organization, it would be closer to the characterization of Cluster 1.3. The same extrapolation can be applied to a closeness between Clusters 3.3 and 2.4 as both are composed by Schumpeter (1942) and Williamson (1985) – a possible association between Cluster 1.3 and 2.4 was previously suggested. Despite the fact of being composed by the same studies, we understand the connection between Clusters 3.3 and 1.3 or 2.4 as being weak. Cluster 3.3 is composed by ten studies, it means heterodox papers usually mention such studies in close connection, as an analytical framework. Hence, we hold that the core feature of Cluster 3.3 is history of ideas. Of course, in the analysis of the history of ideas, approaches of the firm and industrial organization can evolve. But it would be different than a cluster of approaches with the firm and industrial organization as its core. In the case of a connection between Clusters 3.3 and 2.4, we must take into account that the latter is composed by just two studies, which means a less representative analytical structure – that is the reason that, previously, we introduced some comments on Cluster 2.4 but we did not feel comfortable to introduce a characterization.

If we consider our understanding of co-citation network of papers published by mainstream journals and heterodox journals that mention Veblen, we find a great difference in analytical backgrounds. The analytical frameworks of mainstream papers deal with Veblen's writings or ideas to study some economic issues – such as conspicuous consumption or economic progress – or Veblen is analyzed alongside others great economic thinkers, such as Adam Smith or Alfred Marshall. In the heterodox case, the analytical structures rely on Veblen's studies, Ayresian institutionalism, and Institutionalism in a broader sense. Those structures are more well-defined than in the case of mainstream papers. We can affirm that, in the mainstream perspective, Veblen's writings and/or ideas are instrumental to studying an economic issue and, in the heterodox, Veblen's writings and/or ideas constitute the analytical base. Despite their differences, there is a common analytical structure between mainstream and heterodox papers: the history of ideas. After the foundation of heterodox journals, the analytical frameworks of papers published by mainstream journals suggest a less accurate use of Veblen's writing and/or ideas. The common analytical framework between mainstream and heterodox papers, the history of economics ideas, is looser and it is difficult to identify the history of ideas as background.

5. Final comments

This study used two bibliometrics and analytical indicators to study how economics incorporated Thorstein Veblen's contributions: (1) most relevant papers and (2) co-citation networks. These indicators were applied to test the hypothesis that there are two interpretations of Veblen's writings: an institutionalist (heterodox economics) interpretation and a mainstream one. This hypothesis was formulated because of historiographical writings addressing Veblen as an inspiring figure for the institutionalist movement, rather than as a founding father. Consequently, Veblen's writings would be results from a pluralistic and eclectic American economics of his time. The hypothesis was reinforced by the perception that Veblen is mentioned in today's mainstream studies.

The indicators pointed to the same direction. Our findings indicate that papers published by mainstream journals do not strictly follow a mains-

stream methodology or a mainstream reading of Veblen's writings, even after the founding of heterodox journals. However, it can be assumed that mainstream journals became more inclined to follow such methodology and reading after the establishment of heterodox journals. Because of this, it was more difficult to identify the scope of Veblen's writings in papers published by mainstream journals, which can be understood as having less importance. Nevertheless, there is room to study Veblen's background, methodology, and theoretical contributions in papers published by mainstream journals, similar to those subjects that monopolize the discussion in papers published by heterodox journals. These papers published by heterodox journals introduces the idea that there are some interpretations of Veblen's writings in heterodoxy.

This study empirically reinforces that Veblen was not a dissenter. Instead, he was someone from a pluralistic intellectual environment, with his writings generally having an impact on the larger field of economics. Since the establishment of the mid-20th century mainstream economics, it has been impossible to perceive a clear approach to Veblen's writings that can generally be understood as a decrease in the importance of his writings in mainstream economics. Hence, Veblen's writings and ideas became more strictly connected to heterodox interpretations. This study offered a bibliometric analysis of the interpretation of Veblen's writings. Other samples and analytical indicators can point to different directions.

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