What is the central matter of Economics? An investigation using JEL code centrality

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Abstract

The journal of economic literature classification scheme is a standard scheme to classify economics paper. This paper exames the usage of the scheme in a large set of economics papers. I document what subjects are central to the work of economics.

1 Introduction

What is the matter that is central to economics as a discipline? In paper, I try to address this matter quantitatively by using Journal of Econonic Literature (JEL) classification codes as used on a broad range of economics papers. I am not interested in finding what is the most central paper in economics. Instead I am trying to find out what part of economics, as identified by a JEL code, is most central. I will say that a JEL code identifies a class. A class is really

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a subject that has been given an identifier by the JEL code. But the class and the code are distinct, the code is just an idenitifier, whereas the class is a abstract concept.

Classifications schemes may be designed in such a way that there are central and peripheral classes. The JEL scheme has a hierarchical design with multiple top classes. Therefore centrality is not built into the scheme. The key basic idea of this paper is that centrality can be infered by usage of classification schemes. In this paper I consider two basic approaches. One is the frequency appreach, the other is the network approach.

The frequency approach is trivial. It consists in saying that classes in economics are those that are most heavily used. Classes that are less used describe subjects that are closer to subjects that are neighbours of economics.

The network approach is based on the fact that many papers are in several classes. If two classes are used together in a paper, the classes become related. If many classes are related a network of relationship appears between those classes. We can then use well-established concepts of network centrality to find out what the central classes are.

I am not aware of any recent paper that has analysed the usage of JEL classifications in an empirical paper. Heck and Zaleski (1991) consider aggregate data in the top classifications. Their main concern is the change of usage of these top classifications over time. My analysis is static.

The remainder of this paper is organized as follows. In section 2 I present the data used. In Section 3 I look more at the network concepts used. In Section 4 I show results. In Section 5 I offer conclusions and suggestions for further work.

2   Data

2.1   JEL Codes

JEL codes underwent a major revision in 1991. I am not aware of a public source for a log of changes to the scheme since 1991. I trust that the changes are minor. Since my analysis is static, I ignore the fact that under the period in which these codes were assigned, various versions of the scheme were in place.

The JEL codes are documented at http://www.aeaweb.org/journal/jel_class_system.html. The file contains dirty HTML code. When I checked it on 2006–

06–29, the World Wide Web consortium HTML validator at http://validat or.w3.org reported 227 errors. Therefore I did not attempt to parse the file. I used the JEL codes file at http://files.eprints.org/122/1/jel_subjects.xml, compiled by Volker Schalehn, for the Munich Personal RePEc Archive, see http://mpra.repec.org.

JEL codes come in three levels. I label these level 0, 1 and 2. At level 0, the code consists of a single letter. There are 20 of classes at this level. At level 1, the code consists of a single letter followed by a single digit. There are 128 of classes at this level. At level 2, the code consists of a single letter followed by two digits. There are 757 of classes at this level.

In my analysis, I don't pay attention to the fact that that JEL codes are hierarchical in the three levels. Thus I treat every level separately. I call this the separating approach. Bascially, I consider that the stock of papers has been classified by three independent schemes. An alternative would be to consider that a paper in class A12 would also be in A1, and therefore also be in A. We could call this an hierachical approach. One problem with an hierarchical approach is to determine what happens when there are two code to be aggregated into the same category. Thus, is a paper has codes "A1" "A2" and "B1", should it be twice in code "A" and once in code "B"? If a paper can be more than once in a certain category the analysis becomes more involved.

2.2 Document data

I collect data from the RePEc data set, see http://repec.org. At the time of writing, data used comes from 615 different RePEc archive. Thus the source of the data is distributed. It is not coming out of a quality-controlled collection. The advantage of using this data is that it represents what economists feel should be the classification codes on their papers. It does not represent the opinions of some expert cataloguers. If I were to use JEL code data from the Journal of Economic Literature, it would be data that has been created according to a set of rules. Thus partly, I would be quantitatively assessing those rule. I understand that the JEL want to make a handbook on code assigning rules available to the public on their web site. At this time it has not appeared yet and and I have not seen a private copy.

The metadata that is used in RePEc does not only allow to associate JEL codes with individual documents, but also with collections such as journals, working paper series and even with RePEc archives. For the sake of data consistency, I have ignored these codes.

At the time the calculations run, there are 103154 papers for which RePEc has

some JEL classification data available. By that I mean that some recognizable JEL code is mentioned at the `Classification-JEL` field of the RePEc metadata. The ReDIF reading software that is distributed at http://all.repec.org /ReDIF-Perl immediately reads the classification codes based on an internal representation that the software has.

When a paper has JEL classifications, it may be in several classes. Some papers have classes that all belong to the same level. There are papers 2522 with classes only in level 0. There are 11950 papers with classes only in level 1. There are 80921 with classes only in papers level 2.

Not surprisingly if a paper has classes of higher level, it has more class data attached to it. There are on average 1.29 classes on papers with that have classes of level 0 only. There are on average 2.09 in papers that have classes of level 1 only. There are on average 2.68 classe in papers that have classes of level 2 only.

Some papers have classes at different levels. There are 267 with classes in level 0 and level 1. There are 7359 with classes in level 1 and level 2. There are 86 with classes in level 0 and level 2. Finally there are 49 with classes in all three levels. It is not clear how to deal with co-occurrence of classes at different levels. In the following I simply ignore co-occurrences between classes of different level. This allows me to analyze each classification level as a separate classification system. On the other hand it means that 22544 co-occurences of codes belonging to different levels are ignored. There are still 295123 co-occurences left.

Therefore the total number of papers used in the analysis of each level, summed for each level, is higher than the total number of papers in the dataset. At level 0, 2924 can be used for analysis, meaning that there are 154 paper per class. At level 1, 19625 can be used for analysis, meaning that there are 155 paper per class. Finnally, at level 2, 88415 can be used for analysis, meaning that there are 117 papers per class.

The classes "Y2" and "Y3" have not been used in the RePEc data at all. Therefore they have been excluded in the analysis here. The classes "A3", "A39" and "B54" are isolated, in the sense that they have never been used with another class. They are therefore not included in the rest of the analysis. It is not tragic loss to excluded them since each of them has only been used once in the data.

Table 1
extract of the distance matrix at level 0

	A	B	C	D	E	F	G	H	I	J	K	L
R		1.0		1.0		0.3		0.5	5.0	0.8	1.0	
Y	0.4											
Z	12.0		0.9		12.0	1.0	0.6	12.0	1.7	2.0	12.0	12.00

3 A classification network

3.1 Defining a classification network

In this section we look at centrality from a usage point of view. Two codes are used together if they have been used to describe the same paper. The more often two codes are used together, the more they appear close to each other. Two codes that are used rarely together, on the other hand, can be thought of as being far aways from each other.

Let's follow the approach used for, for example, Newman (2001). Let there be P classified papers. Let there be a paper p, and let there be $n(p)$ classifications attached to the paper p. Let $\delta(p, c)$ be 1 if paper be belongs to class c and 0 otherwise. Then we define the strength of co-use of classifications c_i and c_j as $s(i, j)$ where

$$s(i, j) = \sum_{p=1}^{P} \frac{\delta(p, i)\, \delta(p, j)}{n(p) - 1}$$

We can then define the distance $d(i, j)$ between categories i and j as

$$d(i, j) = \frac{1}{s(i, j)}, i \neq j \quad \text{and} \quad d(i, i) = 0$$

Of course this definition only works if i and j have at least once been used together. If they have not been used together, the may still be related by a path that runs through a number of other nodes. In fact, if one path exists between two classes, it is likely not to be unique. Then, it makes sense to look at the shortest paths between classes.

To calculate the shortest paths, I use the Dijkstra (1953) algorithm. This algorithm only calculates one shortest path between any two nodes. I adopt a Perl script found at http://www.sabren.net/code/perl/dijkstra. Perl code for all calculations is available on request.

An excerpt of the distance matrix for level 0 is given in Table 1. The values in the table have been rounded to conserve space. Still, the table illustrates that the shortest path between two categories is not necessarily the shortest one.

An example, that can be gleaned from the table, can be useful to illustrate this property. Suppose we want to go from K to Z. The direct path is 12.0 long. There is an indirect path that is shorter. Go from K to R. The distance is 1.0. Go from R to F. The distance is 0.3. Finally go from F to Z. The distance is 1.0. Thus, the indirect path only has length 2.3.

Another important property of the networks under study here is that they are fully connected. That is, from any one class, it is possible to reach oll other classes using co-classification links. Thus a component analysis, and the selection of components for study is not required.

3.2 Centality concepts

There are several ways in which one can assess centrality. Simple intutions suggest that the papers that belong to a certain suject area are a fuzzy set. Therefore if a paper has a subject that is central to the discipline, it should is more likely to be captured by the subject that lies clearly within it rather than outside. Thus, subject classes that central should appear more frequently than classes that are peripheral.

Using network analysis, we can moved beyond this simple quantitative idea using network analysis. The network is characterised by a set of shortest paths between classes. Once we have a set of shortest paths, it is possible to assess the centrality of classes.

A class can be said to be central if it has the shortest averarage path to all other nodes. Let there be are C classes, and $d(i,c)$ is the distance between class i and class c on the shortest paths between them. it is convenient to define the centrality of class c, $q(c)$ as

$$q(c) = \frac{C-1}{\sum_{c=1}^{C} d(i,c)}$$

This measure is larger the more the average distance is smaller, suggesting higher centrality. This concept is known as closeness centrality.

Alternatively, we can consider that the centrality of a class is given by how much it appears on the shortest paths between other classes. Let $p(i,j,k)$ the number of paths between i and j that pass through class k, and $p(i,j)$ the total number of paths between i and j. This gives

$$b(c) = \sum_{i \neq j, j \neq k, k \neq j} \frac{p(i,j,k)}{p(i,j)}$$

If a class c has $b(c) = 0$, it is a marginal class. Otherwise this measure is larger

Table 2
Correlation level 0

	size	closeness	betweenness
size		61.43	66.58
closeness	61.43		64.29
betweenness	66.58	64.29	

Table 3
Correlation level 1

	size	closeness	betweenness
size		75.96	79.52
closeness	75.96		51.11
betweenness	79.52	51.11	

Table 4
Correlation level 2

	size	closeness	betweenness
size		65.56	76.43
closeness	65.56		33.86
betweenness	76.43	33.86	

the more the class lies on the path between others. This concept is known as betweenness centrality.

4 Results

4.1 Overall results

Tables 2, 3 and 4 have correlations between the three criteria of centrality. It is not suprising that size is well correlated with network centralities. What does appear to be surprising is that network centralities don't correlate well on an aggregate, and correlate less well as the level of classification becomes more detailed. The good correlation between betweenness and size may be the result of both having a similar type of distribution, where a few classes have high values, but a large number of classes have low values. In fact, for betweenness, a large number of classes are not found on any shortest path between other classse. Such classes can be called marginal.

At level 0, 8 classes, i.e. 40.00% of the total analysed, are marginal. At level 1, 57 classes, i.e. 44.88% of the total analysed, are marginal. At level 2, 391

Table 5
criterium: size, level 0

629	E	Macroeconomics and Monetary Economics
395	G	Financial Economics
387	P	Economic Systems
296	O	Economic Development, Technological Change, and Growth
254	L	Industrial Organization
238	J	Labor and Demographic Economics
220	H	Public Economics
215	A	General Economics and Teaching
177	Q	Agricultural and Natural Resource Economics; Environmental...
163	R	Urban, Rural, and Regional Economics
142	Z	Other Special Topics
120	C	Mathematical and Quantitative Methods
107	K	Law and Economics
91	N	Economic History
70	I	Health, Education, and Welfare
69	D	Microeconomics
68	B	Schools of Economic Thought and Methodology
65	F	International Economics
24	M	Business Administration and Business Economics; Marketing;...
12	Y	Miscellaneous Categories

classes, i.e. 51.79% of the total analysed, are marginal.

For level 0, Table 5 shows the categories by size. While it is conventional to have university education split into microeconomics and macroeconomics, we see that research in economics is macro-heavy, with "E" dominating the proceedings, in numbers and however shows that even for "E" its shortest paths don't go directly to all the other nodes. "E" is related to "O" "P" "Z" "H" "Q" via "F".

Table 6
criterium: closeness, level 0

267%	[14]	E	Macroeconomics and Monetary Economics
261%	[1]	F	International Economics
243%	[7]	G	Financial Economics
236%	[6]	O	Economic Development, Technological Change, and Growth
235%	[8]	P	Economic Systems
228%	[4]	Q	Agricultural and Natural Resource Economics; Environmental...
227%	[3]	Z	Other Special Topics
226%	[2]	C	Mathematical and Quantitative Methods
202%	[9]	J	Labor and Demographic Economics
202%	[5]	D	Microeconomics
197%	[10]	H	Public Economics
184%	[15]	L	Industrial Organization
175%	[11]	K	Law and Economics
164%	[12]	B	Schools of Economic Thought and Methodology
163%	[16]	R	Urban, Rural, and Regional Economics
160%	[13]	I	Health, Education, and Welfare
145%	[17]	N	Economic History
139%	[19]	A	General Economics and Teaching
113%	[18]	M	Business Administration and Business Economics; Marketing;...
87%	[20]	Y	Miscellaneous Categories

5 Conclusion

One of the ideas that inspired me was the conceptual difference between the concepts of a suject, and a discipline. A subject is on area of enquiry, say "horse racing". A discipline is a way things are being enquired. Horse racing can be seen as part of biology, looking at zoology, then at horses, then at then way they race. But it could also be part of Human Psychology, looking at leisure behaviour, betting, then betting on horse race. One hope that I would have that betweenness centrality reveal subject areas that act like disciplines, in the sense that they are used as tools or problems in several areas.

There could be a third approach to centrality, that uses code positioning. One could label codes that appear at the beginning of subjects list as front matter

Table 7
criterium: betweenness, level 0

34% [3]	E	Macroeconomics and Monetary Economics
28% [2]	O	Economic Development, Technological Change, and Growth
26% [1]	F	International Economics
12% [14]	P	Economic Systems
12% [15]	G	Financial Economics
9% [4]	A	General Economics and Teaching
4% [17]	L	Industrial Organization
4% [12]	Q	Agricultural and Natural Resource Economics; Environmental...
2% [18]	H	Public Economics
2% [10]	C	Mathematical and Quantitative Methods
1% [9]	K	Law and Economics
1% [7]	D	Microeconomics

and the codes that appear at end of the list as back matter. Correlation of such measures as the average number of other classes a class appears with, and the average position of a class in a set of classes are well correlated between them but not well correlated to centrality. In that case, we could establish a plane of central vs peripheral and front vs back matter. However it is not sure that the codes are not randomly ordered.

In this paper I have completely ignored the fact that JEL classifications are hierarchical. Level 0 and 1 could be studied by aggregating codes from level level. Thus the appearance

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Table 8
criterium: size, level 1

1019	F1	Trade
973	J1	Demographic Economics
894	D8	Information, Knowledge, and Uncertainty
795	F3	International Finance
764	Z0	General
731	C7	Game Theory and Bargaining Theory
714	E5	Monetary Policy, Central Banking, and the Supply of Money...
704	L1	Market Structure, Firm Strategy, and Market Performance...
701	O1	Economic Development
698	J3	Wages, Compensation, and Labor Costs
669	G1	General Financial Markets
653	H2	Taxation, Subsidies, and Revenue
651	C5	Econometric Modeling
650	C1	Econometric and Statistical Methods: General
631	I2	Education
630	J2	Time Allocation, Work Behavior, and Employment Determination...
626	O3	Technological Change; Research and Development
623	D1	Household Behavior and Family Economics
622	O4	Economic Growth and Aggregate Productivity
599	I1	Health
592	E3	Prices, Business Fluctuations, and Cycles
570	F2	International Factor Movements and International Business...
568	F4	Macroeconomic Aspects of International Trade and Finance...
565	D4	Market Structure and Pricing
537	D7	Analysis of Collective Decision-Making
460	J6	Mobility, Unemployment, and Vacancies
460	C3	Econometric Methods: Multiple; Simultaneous Equation Models;...
456	E2	Consumption, Saving, Production, Employment, and Investment...
447	G3	Corporate Finance and Governance

Table 9
criterium: closeness, level 1

400% [54]	D4	Market Structure and Pricing
400% [70]	D1	Household Behavior and Family Economics
400% [86]	L1	Market Structure, Firm Strategy, and Market Performance...
395% [118]	F1	Trade
391% [63]	F2	International Factor Movements and International Business...
390% [79]	J2	Time Allocation, Work Behavior, and Employment Determination...
390% [78]	O3	Technological Change; Research and Development
389% [76]	O4	Economic Growth and Aggregate Productivity
389% [112]	D8	Information, Knowledge, and Uncertainty
388% [115]	J1	Demographic Economics
387% [29]	D2	Production and Organizations
387% [35]	E2	Consumption, Saving, Production, Employment, and Investment...
386% [92]	J3	Wages, Compensation, and Labor Costs
386% [6]	D3	Distribution
385% [94]	O1	Economic Development
385% [104]	Z0	General
384% [100]	C7	Game Theory and Bargaining Theory
384% [107]	F3	International Finance
384% [69]	F4	Macroeconomic Aspects of International Trade and Finance...
381% [97]	E5	Monetary Policy, Central Banking, and the Supply of Money...
381% [26]	L2	Firm Objectives, Organization, and Behavior
379% [91]	G1	General Financial Markets
377% [81]	E3	Prices, Business Fluctuations, and Cycles
370% [39]	E4	Money and Interest Rates
367% [52]	G3	Corporate Finance and Governance
366% [87]	I1	Health
365% [59]	J6	Mobility, Unemployment, and Vacancies
364% [77]	D7	Analysis of Collective Decision-Making
363% [98]	H2	Taxation, Subsidies, and Revenue

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Table 10
criterium: betweenness, level 1

18% [1]	L1	Market Structure, Firm Strategy, and Market Performance...
16% [2]	D8	Information, Knowledge, and Uncertainty
13% [7]	F1	Trade
12% [3]	D1	Household Behavior and Family Economics
9% [73]	J1	Demographic Economics
9% [10]	O1	Economic Development
8% [15]	E5	Monetary Policy, Central Banking, and the Supply of Money...
8% [16]	J3	Wages, Compensation, and Labor Costs
8% [5]	Q2	Renewable Resources and Conservation
8% [12]	H2	Taxation, Subsidies, and Revenue
8% [6]	D4	Market Structure and Pricing
7% [17]	J2	Time Allocation, Work Behavior, and Employment Determination...
7% [79]	F3	International Finance
7% [44]	G1	General Financial Markets
7% [24]	O4	Economic Growth and Aggregate Productivity
7% [28]	O3	Technological Change; Research and Development
6% [76]	C7	Game Theory and Bargaining Theory
6% [4]	B4	Economic Methodology
5% [11]	E0	General
5% [9]	L2	Firm Objectives, Organization, and Behavior
4% [83]	F4	Macroeconomic Aspects of International Trade and Finance...
4% [98]	E3	Prices, Business Fluctuations, and Cycles
4% [70]	E2	Consumption, Saving, Production, Employment, and Investment...
3% [8]	P2	Socialist Systems and Transitional Economies
3% [62]	E6	Macroeconomic Policy Formation, Macroeconomic Aspects of...
3% [51]	G2	Financial Institutions and Services
3% [19]	L5	Regulation and Industrial Policy
3% [107]	D7	Analysis of Collective Decision-Making
3% [118]	I2	Education

Table 11
criterium: size, level 2

3065	E52	Monetary Policy (Targets, Instruments, and Effects)
2842	E32	Business Fluctuations; Cycles
2639	J31	Wage Level and Structure; Wage Differentials by Skill,...
2438	G12	Asset Pricing; Trading volume; Bond Interest Rates
2424	D82	Asymmetric and Private Information
2413	C22	Time-Series Models
2228	C72	Noncooperative Games
2137	F31	Foreign Exchange
2094	E31	Price Level; Inflation; Deflation
2091	J24	Human Capital; Skills; Occupational Choice; Labor Productivity...
1898	C32	Time-Series Models
1782	G21	Banks; Other Depository Institutions; Micro Finance Institutions;...
1753	L13	Oligopoly and Other Imperfect Markets
1733	E58	Central Banks and Their Policies
1677	F13	Commercial Policy; Protection; Promotion; Trade Negotiations;...
1619	F41	Open Economy Macroeconomics
1616	E24	Macroeconomics: Employment; Unemployment; Wages; Intergenerational...
1596	F15	Economic Integration
1553	J64	Unemployment: Models, Duration, Incidence, and Job Search...
1532	D72	Economic Models of Political Processes: Rent-Seeking, Elections,...
1509	D81	Criteria for Decision-Making under Risk and Uncertainty...
1466	E62	Fiscal Policy; Public Expenditures, Investment, and Finance;...
1435	C23	Models with Panel Data
1403	C14	Semiparametric and Nonparametric Methods
1392	D83	Search; Learning; Information and Knowledge; Communication;...
1389	O40	General
1378	D31	Personal Income, Wealth, and Their Distributions
1364	D63	Equity, Justice, Inequality, and Other Normative Criteria...
1351	G15	International Financial Markets

Table 12
criterium: closeness, level 2

299% [754]   E32   Business Fluctuations; Cycles

297% [755]   E52   Monetary Policy (Targets, Instruments, and Effects)

296% [617]   E58   Central Banks and Their Policies

296% [589]   E24   Macroeconomics: Employment; Unemployment; Wages; Intergenerational...

296% [748]   C22   Time-Series Models

296% [718]   E31   Price Level; Inflation; Deflation

295% [476]   E44   Financial Markets and the Macroeconomy

295% [590]   F41   Open Economy Macroeconomics

294% [725]   F31   Foreign Exchange

294% [750]   D82   Asymmetric and Private Information

294% [672]   C32   Time-Series Models

294% [753]   J31   Wage Level and Structure; Wage Differentials by Skill,...

294% [733]   C72   Noncooperative Games

293% [576]   J64   Unemployment: Models, Duration, Incidence, and Job Search...

293% [251]   E43   Determination of Interest Rates; Term Structure of Interest...

293% [751]   G12   Asset Pricing; Trading volume; Bond Interest Rates

292% [556]   E62   Fiscal Policy; Public Expenditures, Investment, and Finance;...

292% [723]   J24   Human Capital; Skills; Occupational Choice; Labor Productivity...

292% [644]   G21   Banks; Other Depository Institutions; Micro Finance Institutions;...

292% [514]   G15   International Financial Markets

291% [408]   C12   Hypothesis Testing

291% [170]   E61   Policy Objectives; Policy Designs and Consistency; Policy...

291% [475]   G14   Information and Market Efficiency; Event Studies

291% [402]   F33   International Monetary Arrangements and Institutions

290% [536]   D83   Search; Learning; Information and Knowledge; Communication;...

290% [140]   E42   Monetary Systems; Standards; Regimes; Government and the...

290% [637]   L13   Oligopoly and Other Imperfect Markets

290% [493]   G11   Portfolio Choice; Investment Decisions

290% [552]   C23   Models with Panel Data

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Table 13
criterium: betweenness, level 2

25% [1]	E32	Business Fluctuations; Cycles
17% [2]	D82	Asymmetric and Private Information
17% [3]	J31	Wage Level and Structure; Wage Differentials by Skill,...
11% [11]	C72	Noncooperative Games
10% [6]	L13	Oligopoly and Other Imperfect Markets
10% [5]	E24	Macroeconomics: Employment; Unemployment; Wages; Intergenerational...
10% [16]	C22	Time-Series Models
10% [12]	J24	Human Capital; Skills; Occupational Choice; Labor Productivity...
9% [4]	H21	Efficiency; Optimal Taxation
9% [9]	D72	Economic Models of Political Processes: Rent-Seeking, Elections,...
9% [13]	G21	Banks; Other Depository Institutions; Micro Finance Institutions;...
8% [8]	O40	General
8% [14]	F13	Commercial Policy; Protection; Promotion; Trade Negotiations;...
8% [10]	E62	Fiscal Policy; Public Expenditures, Investment, and Finance;...
7% [7]	H23	Externalities; Redistributive Effects; Environmental Taxes...
6% [672]	G12	Asset Pricing; Trading volume; Bond Interest Rates
6% [17]	D31	Personal Income, Wealth, and Their Distributions
6% [15]	E44	Financial Markets and the Macroeconomy
5% [641]	F31	Foreign Exchange
5% [753]	E52	Monetary Policy (Targets, Instruments, and Effects)
5% [26]	D63	Equity, Justice, Inequality, and Other Normative Criteria...
5% [24]	O31	Innovation and Invention: Processes and Incentives
4% [30]	F23	Multinational Firms; International Business
4% [513]	F15	Economic Integration
4% [20]	F12	Models of Trade with Imperfect Competition and Scale Economies...
4% [639]	F41	Open Economy Macroeconomics
4% [31]	F33	International Monetary Arrangements and Institutions
4% [621]	J64	Unemployment: Models, Duration, Incidence, and Job Search...
3% [634]	D81	Criteria for Decision-Making under Risk and Uncertainty...