

Creative Class and Economic Growth in U.S. Metropolitan Areas

Are the most creative metropolitan areas in the United States also the metropolitan areas with the highest levels of economic growth?

Bachelor Thesis

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Abstract

Richard Florida is the founder of the Creative Class Theory. Florida asserts that the creative class is the driving force behind economic growth.

The aim of this thesis is to research if the most creative metropolitan areas (according to Richard Florida) in the United States also have the highest levels of economic growth. My main question therefore is: *“Are the most creative metropolitan areas in the United States also the metropolitan areas with the highest levels of economic growth?”*. To answer this question I will research the 20 most creative metropolitan areas and compare these with other rankings and economic growth data.

At the end it seems that the most creative metropolitan areas don't necessarily have the highest levels of economic growth and are therefore not always the best performing metropolitan areas in the United States. A respectable share of the most creative metropolitan areas does have higher economic growth than U.S. metropolitan average, but it is not a certainty for every creative metropolitan area in the top 20.

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1. Introduction

1.1 Rationale

Metropolitan areas and creativity are two subjects that are given growing attention in current urban research nowadays. Richard Florida is one of the key players in the study of creativity in urban settlements. In 2002 Florida published his book 'The Rise of the Creative Class', in which he describes the rise of a new class: the creative class. By Florida's definition more than 40 million Americans (30% of the U.S workforce) belong to this group. The core of the creative class are people in science and engineering, architecture and design, education, arts, music and entertainment (Florida, 2011). But also people in finance, law and health care belong to the creative class, they are called creative professionals (Florida, 2011). The main thought about Florida's theory is that the creative class is the most important force of growth in the economy because it can promote innovation and new jobs. Members can bring, for example, new ideas, regional growth and high technology industry. According to Florida (2011), jobs follow people; businesses will be attracted to places where the creative class is settled. That's why the creative class can attract new creative jobs.

Many metropolitan areas are magnets for the creative class, not because of low taxes or low costs of living, but because of the three T's: Technology, Talent and Tolerance (Florida, 2011). With this information, Florida measures the Creativity Index by rating and ranking the metropolitan areas. If a metropolitan area scores high on the Creativity Index, it will be an attractive place for creative workers, according to Florida.

But the Creative Class theory still raises questions. How does Richard Florida measure the Creativity Index? Do the most creative metropolitan areas have the highest levels of economic growth? These are two questions I would like to answer in this thesis.

1.2 Problem definition

In this research I aim to expand further on creativity and metropolitan areas. The main goal of this thesis is to research if the most creative metropolitan areas (according to Richard Florida) in the United States also have the highest levels of economic growth. The second goal of the thesis is to scrutinize a single city, Rochester New York, as in effect a 'second tier' city in Florida's ranking of American metropolitan areas. Florida claims that the creative class leads to economic growth in metropolitan areas and that they are growing faster than other metropolitan areas with a smaller creative class population. Florida asserts that creative class has a positive influence on the economic growth of metropolitan areas. But is this really true? Are the most creative metropolitan areas also those areas with the highest levels of economic growth? In this paper I will examine the 20 most creative metropolitan areas in the United States. My main question will be: *"Are the most creative metropolitan areas in the United States also the metropolitan areas with the highest levels of economic growth?"* The following questions will answer the main question:

- 1. What is Richard Florida's Creative Class theory about? (Chapter 2)

- 2. How does Richard Florida measure the Creativity Index, and is this a reliable way to measure the creativity score in a metropolitan area?
(Chapter 2)
- 3. Does the ranking of the most creative metropolitan areas in the United States match with the ranking of the metropolitan areas with the most economic growth?
- 4. Is Rochester, New York, which is ranked as a 'second tier' city by Richard Florida, undergoing economic growth?
- 5. What can we expect of the future economic growth of the most creative metropolitan areas?

Like mentioned before: the second goal of the thesis is to scrutinize a single city, Rochester New York, as in effect a 'second tier' city in Florida's ranking of American metropolitan areas. This metropolitan area is ranked in the 44th place when we look at the creative class share of the total workforce. When we examine the Creativity Index we see Rochester at 38th place. Why is Rochester ranked as it is and how did it score on the different indices that are used to measure the Creativity Index for Rochester? These are some questions I would like to answer about Rochester and discuss whether this is the right ranking for Rochester or not, and whether the Creative Class theory has applicability beyond the dozen or so cities that dominate the discussion of its impact.

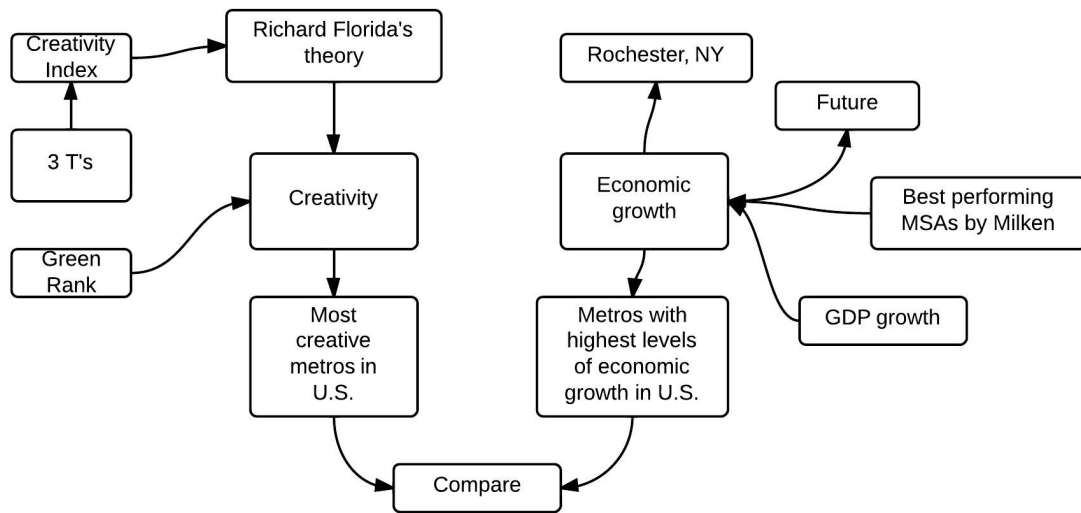


Figure 1.1: conceptual model

Figure 1.1 shows the conceptual model. According to this model creativity will be compared with the economic growth for the metropolitan areas in the United States. The data about the economy growth (Milken’s Index and GDP growth) of the metropolitan areas will be examined to get an answer to the question if the most creative metropolitan areas also have the highest levels of economic growth. The other goal (case study) is to research the economic growth in the city of Rochester, NY.

1.3 Structure

Chapter 2 describes the methodology. I explain which data I used to answer my main question and sub questions.

Chapter 3 discusses the main theory I will use in this thesis and answers sub questions 1 and 2. Chapter 4 shows the results of the research. Chapter 5 summarizes the research results and concludes my thesis by answering the main question.

2. Methodology

First of all I will use the creative class data of Richard Florida in this research. I will also use secondary data for my research. Florida's database (the most creative metropolitan areas ranking) will be compared with the data from the Milken's Institute. Milken's (2012) created the Best-Performing Cities Index that ranks the U.S. metropolitan areas by how well they are creating and sustaining jobs and economic growth. The index is measured by job, wage and salary, and technology growth, wherein employment growth is weighted most heavily. I will compare this data with Florida's ranking and see if the most creative metropolitan areas also have the highest levels of economic growth if we examine the available data.

Data from Sperling's Bestplaces about the economy and job growth in metropolitan areas in the United States is also used in this research. The sources of data that Sperling's Bestplace uses are federal institutions and other statistical and administrative bureaus.

I will also use economic growth data from the U.S. Bureau of Economic Analyses (part of the U.S. Department of Commerce). They released data about the Gross Domestic Product (GDP) growth for every metropolitan area in 2011, compared to 2010.

To answer my sub question '*How does Richard Florida measure the Creativity Index, and is this a reliable way to measure creativity in a metropolitan area?*' I will use Florida's second database (the Creativity Index ranking). I will add new rankings to the Creativity Index, like the Green Rank by Country Home Magazine,

and examine if the metropolitan areas change position when I add new rankings to the Creativity Index.

3. Theory

Florida's Creative Class theory

The main theory that I will use in this thesis is the theory of the creative class by Richard Florida. The main data resource will be Richard Florida's book *'The Rise of the Creative Class Revisited'* (2011). Florida made a database of all metropolitan areas in the United States where he ranks the metropolitan areas by the percentage of creative class share of the total employment. In a second database he ranks the metropolitan areas by the Creativity Index that is measured with the Technology Index, Talent index and the Tolerance index rankings.

Florida's recently published book *'The Rise of the Creative Class Revisited'* (2011) is a revisit of the original edition *'The Rise of the Creative Class'* (2002) with revised data from 2010. As already mentioned in the introduction, Florida (2011) describes a new social class whose function is to 'create meaningful new forms'. The main thought in his book is that creativity is the driving force behind economic growth. The creative class is defined by occupations. Florida divides these into two groups: the Super-Creative Core and the Creative Professionals (Florida, 2011). The Super-Creative Core includes occupations such as scientists, engineers, artists, university professors, designers, architects and others that Florida (2011) describes as "producers of new forms or designs that are readily transferable and widely useful". The second group, the Creative Professionals, are workers in the knowledge-intensive industries, such as high-technology, finance, business and health care. Workers in this group engage in creative

problem-solving and create new approaches to problems which require a high degree of formal education (Florida, 2011).

According to Florida (2011) the creative class will bring economic growth to metropolitan areas that are attractive to its members. Creative class in-migrants can bring innovation, new ideas and high technology industries. Florida claims that jobs follow people. Attracting particular labour to a metropolitan area will encourage high technology industries to move in to take advantage of the talented labour pool (Pratt, 2008). Florida (2002) aims that companies move to places where they can find creative and skilled labour (therefore: jobs follow people). Most of these places are tolerant and diverse according to Florida (2002).

The creative class also enjoys different lifestyles and culture. They are creative as workers, but also in other aspects of life. Florida (2002) calls this kind of culture the Street Level Culture. This culture includes “teeming blend of cafes, sidewalk musicians, and small galleries and bistros, where it is hard to draw the line between participant and observer, or between creativity and its creators” (Florida, 2002). Creative class expresses themselves creative: for instance in clothing but also as persons who are interested in art, music and design. The most important aspect of this culture is that creative class members like to be the participants and not only spectators (Florida, 2002).

To measure the attractiveness of a metropolitan area, Florida made a list of the qualities that attract the creative class. He then ranks the scores on these qualities and goes on to rank each metropolitan area against other metropolitan settings. An attractive metropolitan area has to score high on the Creativity

Index. This index is composed by the 3 T's: Technology, Talent and Tolerance (Florida, 2011). Technology is measured with three variables: Tech-Pole Index (measure of high technology industry concentration developed by the Milken Institute), and two measures of regional innovation (patents per capita and average annual patent growth). Talent is measured as the creative class share of total employment (Super-Creative Core and Creative Professionals). The Tolerance Index is measured with three variables: the Gay and Lesbian Index, Integration Index (measures the level of integration versus segregation of a metropolitan area) and the share of immigrants or foreign-born residents (Florida, 2011). After measuring the Creativity Index, Florida ranked all the metropolitan areas from 'most creative' to 'least creative'. Table 2.1 shows the 20 most creative metropolitan areas in the United States. Also the rankings on the 3 T's are listed in this table. Appendix 1 shows the ranking of the 50 U.S. metropolitan areas with the highest share of the creative class.

Most creative metropolitan areas	Technology Rank	Talent Rank	Tolerance Rank
1. Boulder, CO	10	5	9
2. San Fransico-Oakland-Fremont, CA	3	16	17
3. Boston-Cambridge-Quicny, MA-NH	9	9	20
4. Ann Arbor, MI	25	10	10
5. Seattle-Tacoma-Bellevue, WA	1	22	22
6. San Diego-Carlsbad-San Marcos, CA	7	37	1
7. Corvallis, OR	14	8	25
8. Durham, NC	8	1	45
9. Washington-Arlington-Alexandria	27	3	30
10. Trenton-Ewing, NJ	44	6	13
11. Ithaca, NY	61	4	6
12. San Jose-Sunnyvale-Santa Clara, CA	2	2	71
13. Portland-Vancouver-Beaverton, OR-WA	4	59	16
14. Worcester, MA	30	40	18
15. Burlington-South Burlington, VT	11	20	61
16. Hartford-West Hartford-East Hartford, CT	42	14	37

17. Austin-Round Rock, TX	5	54	34
18. Minneapolis-St. Paul-Bloomington, MN-WI	17	23	53
19. Atlanta-Sandy Springs-Marietta, GA	23	33	42
20. Tucson, AZ	12	64	26

Table 2.1 The 20 most creative metropolitan areas in the U.S., including rankings (Florida, 2011)

The creative class is not just a measure for people with a college graduate. About 3 in 4 of all college graduates has a creative class job. But 4 in 10 members of the creative class do not have college degrees; about 16.6 million workers (Florida, 2011).

While Creative Class Theory is praised among many people, there is also much criticism of Florida's argument. One of the main critiques is that the Creative Class Theory is written from an elitist perspective (Peck, 2005). A second limitation that is addressed is the way of measuring the creative class. I would like to open a further discussion on the way Florida measures the attraction of metropolitan areas. He argues that the 3 T's are the key elements for attracting the creative class. A research by Hoyman and Faricy (2009) didn't find any correlation between the creative class theory and growth in cities. They conclude their research by saying: *'The individual characteristics of the creative class—talent, technology, and tolerance—were negatively correlated with all our economic measurements.'* (Hoyman and Faricy, 2009). Pratt (2008) also mentions that Florida forgets there is an intrinsic value in culture that attracts the creative class and that his numbers look convincing but the underlying concepts of the 3 T's are woolly. It depends on how one defines the 3 T's and what kind of indices one uses to measure the Creativity Index and which relationship they have to the target variable (Pratt, 2008). According to Pratt (2008) this is not something Florida takes into account or discusses. Therefore it might be worthwhile to add

an extra index to the Creativity Index. For instance, what about sustainability? This is an index that Florida doesn't take into account in his measure for the Creativity Index. Including some reflection of green commitment by a city surely reflects the ideology and ethics of a large share of the creative class members. Country Home Magazine (2007) made a Green Cities Rank for all the metropolitan areas in the United States, named the Best Green Cities study. It determines which metropolitan areas are the best places to live a green life. A metropolitan area with high water and air quality or good mass transit system might be more attractive for creative's who like to live a green life. Table 2.2 shows the top 20 ranked metropolitan areas on the Best Green Cities index.

Metropolitan area	
1. Burlington, VT	11. Ann Arbor, MI
2. Ithaca, NY	12. San Diego, CA
3. Corvallis, OR	13. La Crosse, WI
4. Springfield, MA	14. Pittsfield, MA
5. Wenatchee, WA	15. Eau Claire, WI
6. Charlottesville, VA	16. Durham, NC
7. Boulder, CO	17. Norwich-New London, CT
8. Madison, WI	18. Eugene, OR
9. Binghamton, NY	19. San Francisco, CA
10. Champaign-Urbana, IL	20. Chico, CA

Table 2.2: top 20 ranked metropolitan areas on the Best Green Cities Index. (source: bestplaces.net)

To research this, I used Richard Florida's ranking and picked the 20 metropolitan areas that scored highest on the Creativity Index and added the Green City Rank by Country Home Magazine (2007). Florida measures the Creativity Index by adding up the rankings of the Technology, Talent and Tolerance rank. For instance, Boulder, CO is ranked 10th on Technology, 5th on Talent and 9th on Tolerance. By adding up these ranking you get a 3T score of 24 (Table 2.3). The

lower this score, the higher Florida ranked the metropolitan area on the Creativity Index. By adding the Best Green Cities rank (Boulder, CO is ranked 7th) we get a score of 31. Table 2.3 shows the change in rankings of the metropolitan areas when the Green City rank is added to Richard Florida's Creativity Index, which already contains the 3 T's. The Green Rank is added to the 3T score as seen in the column '3T+Green Rank'. The last column shows the new rank of the metropolitan area when the Green City Rank is added.

Most creative metropolitan area's	3T score	3T+Green score	New Rank
1. Boulder, CO	24	31	1
2. San Fransico-Oakland-Fremont, CA	36	55	3
3. Boston-Cambridge-Quincy, MA-NH	38	159	14
4. Ann Arbor, MI	45	56	4
5. Seattle-Tacoma-Bellevue, WA	45	77	8
6. San Diego-Carlsbad-San Marcos, CA	45	57	5
7. Corvallis, OR	47	50	2
8. Durham, NC	54	70	6
9. Washington-Arlington-Alexandria	60	162	15
10. Trenton-Ewing, NJ	63	137	11
11. Ithaca, NY	71	73	7
12. San Jose-Sunnyvale-Santa Clara, CA	75	253	18
13. Portland-Vancouver-Beaverton, OR-WA	79	119	10
14. Worcester, MA	88	285	19
15. Burlington-South Burlington, VT	92	93	9
16. Hartford-West Hartford-East Hartford, CT	93	175	17
17. Austin-Round Rock, TX	93	145	12
18. Minneapolis-St. Paul-Bloomington, MN-WI	93	169	16
19. Atlanta-Sandy Springs-Marietta, GA	98	311	20
20. Tucson, AZ	102	157	13

Table 2.3: Change in ranking when the Green Rank is added to the Technology, Talent and Tolerance Rank.

For example, the metropolitan area Boston-Cambridge-Quincy, MA-NH will drop from 3 to 14, while Ithaca will rise from 11 to 7 in the Creativity Index Rank when adding the Green City Rank. What I mean to say is that rankings are not 'value-free'. It is up to the maker (i.e. Richard Florida) what indices one chooses

to use for a composite measure. I might think that the Green City Rank is worthwhile to take into measurement, but other researchers might think that this index is not useful at all for measuring creativity. Florida only uses the 3 T's in his Creativity Index, but by adding more indices one derives different rankings. Therefore one can reasonably doubt if Richard Florida is using the right, or enough, criteria in his measurements. It is up to the maker how to define and measure the creative class and I think one can use a lot more indices to measure which metropolitan areas are attractive to creative people. Moreover, treating several criteria as having equal impact on the overall ranking is conceptually and practically very suspect. Tolerance, for example, may not match the importance of Technology and Talent.

4. Results

In this chapter I will answer my sub questions and show the results of the research. Richard Florida's data and also secondary data from the Milken Institute and Sperling's Bestplaces are used to answer the sub questions. The complete top 50 rankings by Florida and Milken can be found in the appendix.

4.1 Comparing the ranking of the most creative metropolitan areas with the ranking of the metropolitan areas with the highest level of economic growth

In order to answer this question I will use data from the Milken Institute and the Bureau of Economic Analyses. The Milken Institute (2011) created the Best-Performing Cities Index that ranks the U.S. metropolitan areas by how well they are creating and sustaining jobs and economic growth. The index is measured by job, wage and salary, and technology growth. I will compare this ranking with Richard Florida's ranking of the most creative metropolitan areas, and check if there is any relation between creativity and economic growth in a metropolitan area.

2011 Rank	2010 Rank	Metropolitan Area
1	14	San Antonio, TX
2	9	El Paso, TX
3	50	Fort Collins-Loveland, CO
4	2	Austin-Round Rock, TX
5	1	Killeen-Temple-Fort Hood, TX
6	49	Salt Lake City, UT
7	8	Anchorage, AK
8	3	Huntsville, AL
9	25	Provo-Orem, UT
10	5	Kennewick-Richland-Pasco, WA

11	19	Charleston-North Charleston, SC
12	22	Cambridge-Newton-Framingham, MA
13	28	Cedar Rapids, IA
14	7	Raleigh-Cary, NC
15	53	Ogden-Clearfield, UT
16	10	Houston-Sugar Land-Baytown, TX
17	6	Washington-Arlington-Alexandria, DC-VA-MD-WV
18	4	McAllen-Edinburg-Mission, TX
19	93	Little Rock-North Little Rock-Conway, AR
20	17	Dallas-Plano-Irving, TX

Table 4.1: Top 20 Best performing metropolitan areas in 2011 (Milken Institute, 2011)

Table 4.1 shows the best performing cities according to the Milken Institute. The complete ranking of the 50 best performing metropolitan areas according to the Milken Institute can be found in Appendix 2. If we compare table 3.1 with Table 2.1 we see that Austin-Round Rock, TX and Washington-Arlington-Alexandria, DC are the only metropolitan areas that are found in both top 20 lists. Boulder, CO, ranked first in Florida's Creativity Index, is only ranked 59th on the Best-Performing Cities index. The same story applies to San Francisco-Oakland-Fremont, CA, which is ranked second as most creative metropolitan area, but ranked 52nd in the Best-Performing Cities ranking. However San Francisco-Oakland-Fremont, CA is a big gainer because it was ranked 103rd in the Best-Performing Cities ranking in 2010. Washington-Arlington-Alexandria, DC (9th most creative metropolitan area) is the only metropolitan area, after Austin-Round Rock, TX, that has a good ranking on Milken's index: 17th. I still expected a higher rank for this metropolitan area with such a high share of the creative class and creativity. When I compare both rankings I don't see a very clear relationship between creativity and economic growth in metropolitan areas. Nor do I see a strong relation between the creative class share and the Milken index. The metropolitan area with the highest share of creative class, Durham, NC, is

ranked 33rd, San Jose-Sunnyvale-Santa Clara, CA 51st, and Washington-Arlington-Alexandria, DC 17th.

Milken’s ranking (Table 4.1) makes clear that some metropolitan areas in Texas are doing really well on the Best-Performing Cities Index: four of the five best performing cities are located in Texas. These metropolitan areas are low ranked in Florida’s creativity ranking (Table 4.2), except for Austin-Round Rock, TX, and have a much smaller share of the creative class in terms of percentage than metropolitan areas such as Durham, NC (48,4%) and San Jose-Sunnyvale-Santa Clara, CA (46,9%).

Metropolitan Area	% Share of the Creative Class
17. Austin-Round Rock, TX	34,4
100. San Antonio, TX	31,2
179. El Paso, TX	28,6
190. Killeen-Temple-Fort Hood, TX	30,9

Table 4.2: the high ranked metropolitan areas in the Best-Cities Index don’t perform that well in Florida’s creativity ranking (2011).

I compared the job growth rankings for Boulder, CO (most creative metropolitan area) and San Antonio, TX (Best-Performing City) that Milken (2011) used among others for measuring the Best-Performing City Index in Table 4.3.

	Boulder, CO	San Antonio, TX
5-yr Job Growth 2005-2010 rank (score)	59 (102,22)	7 (110,76)
1-yr Job Growth 2009-2010 rank (score)	73 (100,34)	23 (101,33)
Job Growth June '10 - June '11 rank (score)	86 (0.76%)	33 (1,68%)

Table 4.3: Job growth in Durham, NC and San Antonio, TX (Milken Institute, 2011)

Table 4.3 shows that San Antonio, TX is much higher ranked than Boulder, CO when job growth is considered. By examining these rankings it seems that Florida's (2002) 'jobs follow people' slogan is simply not valid in this case. I don't see a clear match when I compare the creative class share ranking with Milken's Best-Performing Cities ranking. Metropolitan areas that are performing well on the Best-Performing Cities index have rather a low than a high score on the creativity index.

Rausch and Negrey (2006) published a similar research with the title: *'Does the creative engine run? A consideration of the effect of creative class on economic strength and growth'* wherein they question whether the concentration of creative class is in fact related to economic strength or economic growth. They conclude their research thus:

'The occupational structure of creative regions contains a higher proportion of the creative class; however, this does not seem to translate to significantly better regional economic performance as measured by Gross Metropolitan Product (GMP). ... it does not appear that merely adding creative class individuals in an MSA will lead to a stronger economy in terms of GMP' (Rausch and Negrey, 2006: 482).

The U.S. Bureau of Economic Analyses released in February 2013 an article "Economic Growth across Metropolitan areas in 2011" where they show the GDP (Gross Domestic Product) growth for every metropolitan area in the United States. Table 4.4 shows the % GDP growth in 2011, compared to 2010, for the 20 most creative metropolitan areas.

Most creative metropolitan area's	2011 GDP Growth (US = 1.6%)	GDP Growth Rank
1. Boulder, CO	3.6%	31
2. San Fransico-Oakland-Fremont, CA	2.6%	59
3. Boston-Cambridge-Quicny, MA-NH	2.4%	69
4. Ann Arbor, MI	0.3%	221
5. Seattle-Tacoma-Bellevue, WA	2.9%	50
6. San Diego-Carlsbad-San Marcos, CA	2.3%	75
7. Corvallis, OR	-0.6%	295
8. Durham, NC	2.2%	85
9. Washington-Arlington-Alexandria	1.1%	152
10. Trenton-Ewing, NJ	2.1%	91
11. Ithaca, NY	-1.6%	332
12. San Jose-Sunnyvale-Santa Clara, CA	7.7%	6
13. Portland-Vancouver-Beaverton, OR-WA	6.5%	10
14. Worcester, MA	1.4%	134
15. Burlington-South Burlington, VT	1.0%	160
16. Hartford-West Hartford-East Hartford, CT	2.6%	59
17. Austin-Round Rock, TX	4.4%	20
18. Minneapolis-St. Paul-Bloomington, MN-WI	1.9%	103
19. Atlanta-Sandy Springs-Marietta, GA	2.2%	85
20. Tucson, AZ	0.7%	183

Table 4.4: GDP growth in 2011, compared to 2010, for the 20 most creative metropolitan areas. (Average GDP growth in metropolitan areas in the U.S. = 1.6%) (BEA, 2013)

The table shows that 7 out of the 20 (35%) metropolitan areas had a lower percentage of GDP growth than U.S. average in 2011. The other 13 metropolitan areas (65%) had a higher percentage of GDP growth in 2011 than U.S. average. The average GDP growth in 2011 for the 20 most creative metropolitan areas is 2.29%.

I can conclude from table 4.4 that many of the 20 most creative metropolitan areas had a higher percentage of GDP growth in 2011 then U.S. metropolitan average. But it doesn't necessarily mean that a high ranked creative metropolitan area also has a higher level of economic growth (expressed in GDP). For example: Corvallis, OR (-0,6%) and Ithaca (-1,6%) even had negative GDP growth over 2011. The same applies to Ann Arbor, MI, Washington-Arlington-Alexandria, DC,

Worcester, MA, Burlington-South Burlington, VT and Tucson, AZ which all had a lower GDP growth than U.S. metropolitan average.

4.2 Economic growth in Rochester, NY

Rochester, New York is ranked as the 44th metropolitan area with the highest share of the creative class. A substantial share, 35.1%, of the total employment (168,680) in Rochester is part of the creative class (Florida, 2011). On the Creativity Index, Rochester is ranked 38th. According to these numbers, we can describe Rochester as a second-tier city because it scores well but not strikingly so in the rankings.

The city of Rochester has an estimated population of 210,855. Rochester's city population peaked in 1950: 332,488 (U.S. Census, 2011). Its multi-county metropolitan area comprises a population of 1 million. Creative class settlements are found around East End and Park Avenue in Rochester. East End is famous for its Cultural District where the Eastman School of Music, Little Theater and many restaurants, cafes and pubs are found over here. Park Avenue is known as the Neighborhood of Arts. It has a lot of culture and art to offer like galleries, cultural centers and the School of the Arts (Rochester City Living, 2009).

Rochester became the 'Flour City' in the early 19th century and after opening the Erie Canal it became one of the first American boomtowns (ACT Rochester, 2012). A lot of grain was milled and transported over the Erie Canal. When the flower milling declined, several seed companies grew to become the largest of the world and turned Rochester into the 'Flower City' (VintageViews, n.d.). The

development of the photography industry was the next important step for Rochester. Big high-technology companies like Eastman Kodak, Xerox and Bausch and Lomb have historically been very important for the economy of Rochester (Applebome, 2012).

But times are changing, the population declined in recent decades and Eastman Kodak went bankrupt in January 2012 (Bennett, 2012). Kodak’s employment had already declined from 62.000 in the 1980s to less then 7000 in 2012 (Applebome, 2012). The question is how the Rochester economy is doing at the moment and what we can expect of it in the future.

According to the Bureau of Economic Analysis (2010), the metropolitan area of Rochester, NY had a GDP per capita of 38.237 in 2010, and is therefore ranked as 129th metropolitan area (average GDP per capita in the U.S. is 45.557).

Table 4.5 shows the scores and rankings of Rochester composed by the Milken’s Best-Performing City Index (2011). Milken ranks Rochester as 71st overall in 2011 (2010 as 89th).

Economy in Rochester, NY	Score	Rank
5-yr Job Growth (2005-2010)	Score: 100.54*	Rank: 99
1-yr Job Growth (2009-2010)	Score: 100.81*	Rank: 39
5-yr Wages & Salaries Growth (2004-2009)	Score: 94.83*	Rank: 167
1-yr Wages & Salaries Growth (2008-2009)	Score: 101.35*	Rank: 72
Job Growth (June 10 - June 11)	Growth: 2.41 %	Rank: 16
5-yr Relative HT GDP Growth (2005-2010)	Score: 82.79*	Rank: 173
1-yr Relative HT GDP Growth (2009-2010)	Score: 94.01*	Rank: 179

*US Average = 100

Table 4.5: A few economic growth scores and ranking for Rochester, NY. (Milken’s Institute, 2011)

Some slight above average job growth from 2005 till 2010 and 2009 till 2010 is shown for Rochester in table 4.5. The job growth from June 2010 till June 2011 is

relatively high with 2.41% and therefore well ranked as 16th. The wages and salaries growth from 2004-2008 is below average for Rochester, although it is slightly above average from 2008-2009. Rochester scores low on the relative high tech sector output growth from 2005 till 2010 and 2009 till 2010 and is therefore ranked as 173rd and 179th respectively.

Table 4.6 shows some data, retrieved from Sperling's Bestplaces.net (2012) about the economy in Rochester.

Economy	Rochester, NY	United States
Unemployment Rate	7.00%	8.60%
Recent Job Growth*	0.22%	0.35%
Future Job Growth**	33.44%	32.10%

**Job growth over the last 12 months (June, 2012) **Projected change of job availability over next ten years (June, 2012)*

Table 4.6: Some data about the economy of Rochester, NY. (Bestplaces.net, 2012)

The data shows that Rochester had 0.22% job growth in the last 12 months, which is slightly under U.S. average. Although, the expected future job growth for the next 10 years (33.44%) is slightly higher than the U.S. average.

Despite the decline in employment of the big businesses the last decades, the total employment is still growing. The total employment in Rochester metropolitan area grew from 414.400 in 1980 to 503.200 in 2010 (Applebome, 2012). According to the Applebome (2012) big companies like Kodak seeded new businesses:

'New businesses have been seeded by Kodak's skilled work force, a reminder that a corporation's fall can leave behind not just scars but also things to build upon ... The fact that Kodak declined over decades,

rather than suffering a sudden collapse, allowed people at the company and elsewhere to explore new options — to take skills in medical technology, photonics, imaging or optics to small startups or to start their own’.

The president of Rochester Downtown Development Corp, Heidi N.

Zimmer-Meyer is hopeful about the creativity in Rochester:

‘What we have learned is that cities that are successful at attracting businesses, and retaining businesses as well, is that you have got to have a cool, vibrant, edgy downtown. That’s part of the economic mix. That’s part of what you have to have to grow as a region, particularly in knowledge-based industries and in the creative class sector ... Right now we’re manufacturing brains. We’re manufacturing smart people, and those smart people are going to stay here and eventually hire other smart people’. (Democrat & Chronicle, 2012).

Concluding: Rochester, NY is undergoing some economic growth, but the figures don’t show a booming metropolitan area anymore. It seems to have some job growth but the high tech sector output is lagging somewhat compared to the other metropolitan areas in the United States. Despite the decline in employment of the big businesses, the total employment is still growing in Rochester. As Byrnes (2012) already mentioned in his article on The Atlantic Cities:

‘it’s a city far from collapse. But it is, in many ways, just as far from the economic relevance it once held.’

4.3 The future economic growth of the most creative metropolitan areas

As mentioned in chapter 4.1, the most creative metropolitan areas don't necessarily have the highest levels of economic growth over the last years. But what do the data for these metropolitan areas show for the future?

Most creative metropolitan area's	Expected future job growth*	Milken's Best Performing Cities Rank 2011 (2010)
1. Boulder, CO	39,78%	59 (56)
2. San Fransico-Oakland-Fremont, CA	32,50%	52 (103)
3. Boston-Cambridge-Quicny, MA-NH	34,10%	53 (42)
4. Ann Arbor, MI	31,30%	132 (161)
5. Seattle-Tacoma-Bellevue, WA	31,20%	27 (37)
6. San Diego-Carlsbad-San Marcos, CA	34,50%	69 (76)
7. Corvallis, OR	36,60%	N/A
8. Durham, NC	33,58%	33 (15)
9. Washington-Arlington-Alexandria, DC	36,76%	17 (6)
10. Trenton-Ewing, NJ	35,14%	39 (12)

*US Average = 32.10%, projected change of job availability over next ten years (June, 2012) (Bestplaces.net, 2012).

Table 4.7

In table 4.7 we see that the expected future job growth is in general a bit higher for the 10 most creative metropolitan areas than U.S. average. Except for Seattle-Tacoma-Bellevue, WA (31.20%) and Ann Arbor, MI (31.30%) who have a lower expected future job growth then the U.S. average. If this trend continues I think that other metropolitan areas therefore will overtake Seattle-Tacome-Bellevue, WA and Ann Arbor, MI.

Milken's Best Performing Cities Rank (2011) shows us that some metropolitan areas dropped in rank by comparing the 2010 and 2011. For instance Durham, NC and Washington-Arlington-Alexandria, DC are losers, while San Francisco-

Oakland-Fremont, CA and Ann Arbor, MI did a good job in 2011 by going up in rank.

According to Career Builder and the Economic Modeling Specialists (2012), San Jose-Sunnyvale-Santa Clara, CA had the most job growth over 2010-2012. 62,290 jobs were added, signifying 7 percent growth. This metropolitan area is ranked 12th as most creative metropolitan area.

I think that job growth is a good indicator for predicting the economic growth in a metropolitan area. Creating jobs has a multiplier effect: the more jobs one creates, the more people can spend money on consuming, what will encourage economic growth. This is possible if there are enough jobs available and the unemployment rate is low. Therefore I expect that especially Boulder, CO (39,78%) will have solid economic growth in the future.

Area Development (2012) ranked the leading metropolitan areas for 2012 by 23 economic and workforce growth indicators. Boulder, CO is not really well ranked as 71st. Trenton-Ewing, NJ and Washington-Arlington-Alexandria are the highest ranked metropolitan areas we see on the ranking list, as 20th and 21st respectively.

At the end I think it is very hard to predict the economic future for the most creative metropolitan areas in the United States. Different rankings tell different forecasts. Especially when it is repeatedly clear that the metropolitan areas with the highest share of the creative class don't necessarily have the most economic growth. San Jose-Sunnyvale-Santa Clara is the only metropolitan area that is well ranked in almost every ranking about economic growth. The main reason for this

steady performance is of course Silicon Valley, which is responsible for the continuing economic growth since 1990.

5. Conclusion

Richard Florida created the Creative Class Theory wherein he tries to assert that human creativity is the ultimate source of economic growth in metropolitan areas. My main question was to find out if this statement is applicable for the 20 most creative metropolitan areas: *“Are the United States metropolitan areas with the highest share of Creative Class, also the metropolitan areas with the highest levels of economic growth?”* I started to examine how Florida measures the creative class and found out that rankings are not ‘value-free’: it is up to the creator to choose which indices he uses. By adding a new index you can get a total different ranking, like I showed by adding the Green City Index to Florida’s Creativity Index. After this I checked how the most creative metropolitan areas economically performed the last years. Therefore I compared Florida’s creativity ranking with the Milken Institute Best-Performing Cities ranking and data about the GDP growth in metropolitan areas. After writing this thesis I can conclude that the most creative metropolitan areas do not necessarily have the highest levels of economic growth. Most of the 20 most creative metropolitan areas (65%) do have higher economic growth (measured in % GDP growth) than U.S. metropolitan average, but 35% demonstrated a lower GDP growth than U.S. metropolitan average. Current strong economic performers are not necessarily rich in factors associated with creative class. The most creative metropolitan areas are doing well when we look at the economic growth, but that doesn’t mean that every metropolitan area in the top 20 of most creative metropolitan areas has economic growth or higher economic growth than U.S. metropolitan

average. While comparing Florida's ranking against the Milken's Best-Performing Cities Ranking, it becomes clear that especially some metropolitan areas in Texas are performing really well and have high economic growth. The Bureau of Economic Analyses confirms that metropolitan areas in Texas are performing economically well. Odessa, TX had the highest GDP growth in 2011: 15.2%.

I have also scrutinized the metropolitan area Rochester to get more in-depth information about economic growth in a single metropolitan area.

Rausch and Negrey (2006) underline my findings in their research by saying:

“The occupational structure of creative regions contains a higher proportion of the creative class; however, this does not seem to translate to significantly better regional economic performance as measured by GMP.”

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Appendix

Appendix 1

Top 50 ranking for metropolitan areas with the highest share of creative class by

Richard Florida (2011). Green City Rank by Country Home Magazine (2007) is also

shown in this table.

Metropolitan area	Technology Rank	Talent Rank	Tolerance Rank	Creativity Rank	Green Rank
1. Durham, NC	8	1	45	8	16
2. San Jose-Sunnyvale-Santa Clara, CA	2	2	71	12	178
3. Washington-Arlington-Alexandria	27	3	30	9	102
4. Ithaca, NY	61	4	6	11	2
5. Boulder, CO	10	5	9	1	7
6. Trenton-Ewing, NJ	44	6	13	10	74
7. Huntsville, AL	15	7	254	74	356
8. Corvallis, OR	14	8	25	7	3
9. Boston-Cambridge-Quincy, MA-NH	9	9	20	3	121
10. Ann Arbor, MI	25	10	10	4	11
11. Tallahassee, FL	83	11	162	66	111
12. Rochester, MN	22	12	211	60	101
13. Charlottesville, VA	58	13	119	46	6
14. Hartford-West-East, CT	42	14	37	16	82
15. Bridgeport-Stamford-Norwalk, CT	39	15	71	28	176
16. San Francisco-Oakland-Fremont, CA	3	16	17	2	19
17. Gainesville, FL	80	17	88	43	44
18. Olympia, WA	94	18	41	34	36
19. Madison, WI	17	19	67	21	8
20. Burlington-South Burlington, VT	11	20	61	15	1
21. Baltimore-Towson, MD	55	21	103	40	126
22. Seattle-Tacoma-Bellevue, WA	1	22	22	5	32
23. Minneapolis-St. Paul-Bloomington, MN-WI	17	23	53	18	76
24. Raleigh-Cary, NC	6	24	95	27	149
25. Denver-Aurora, CO	42	25	48	24	79
26. College Station-Bryan, TX	180	26	195	115	104
27. Colorado Springs, CO	103	27	128	67	70
28. Springfield, IL	138	28	166	86	133
29. Athens-Clarke County,	227	29	94	92	112

GA					
30. Sacramento-Arden-Arcade-Roseville, CA	49	30	38	25	103
31. Albany-Schenectady-Troy, NY	28	31	99	36	43
32. Fort Collins-Loveland, CO	34	32	74	30	26
33. Atlanta-Sandy Springs-Marietta, GA	23	33	42	19	213
34. New York-Newark-Edison, NY-NJ-PA	52	34	57	31	234
35. New Haven-Milford, CT	68	35	139	59	207
36. Warner Robins, GA	316	36	176	168	374
37. San Diego-Carlsbad-San Marcos, CA	7	37	1	6	12
38. Kennewick-Richland-Pasco, WA	74	38	246	96	269
39. Ames, IA	110	39	225	104	39
40. Worcester, MA	30	40	18	14	197
41. Manchester-Nashua, NH	20	41	62	26	238
42. Palm Bay-Melbourne-Titusville, FL	32	42	112	44	252
43. Des Moines, IA	66	43	127	56	145
44. Rochester, NY	72	44	50	38	93
45. Chicago-Naperville-Joliet, IL-IN-WI	62	45	79	45	192
46. Boise City-Nampa, ID	106	46	192	90	168
47. Richmond, VA	99	47	191	88	165
48. Kansas City, MO-KS	24	48	106	41	244
49. Columbia, MO	235	49	89	103	118
50. Lansing-East Lansing, MI	127	50	136	84	33

Appendix 2

Top 50 metropolitan areas by the Milken Institute (2011). Ranks the Best

Performing Cities in 2011.

2011 Rank	2010 Rank	Metropolitan Area
1	14	San Antonio, TX MSA
2	9	El Paso, TX MSA
3	50	Fort Collins-Loveland, CO MSA
4	2	Austin-Round Rock, TX MSA
5	1	Killeen-Temple-Fort Hood, TX MSA
6	49	Salt Lake City, UT MSA
7	8	Anchorage, AK MSA
8	3	Huntsville, AL MSA
9	25	Provo-Orem, UT MSA
10	5	Kennewick-Richland-Pasco, WA MSA
11	19	Charleston-North Charleston, SC MSA
12	22	Cambridge-Newton-Framingham, MA MD
13	28	Cedar Rapids, IA MSA
14	7	Raleigh-Cary, NC MSA
15	53	Ogden-Clearfield, UT MSA
16	10	Houston-Sugar Land-Baytown, TX MSA
17	6	Washington-Arlington-Alexandria, DC-VA-MD-WV MD
18	4	McAllen-Edinburg-Mission, TX MSA
19	93	Little Rock-North Little Rock-Conway, AR MSA
20	17	Dallas-Plano-Irving, TX MD
21	20	Bethesda-Gaithersburg-Frederick, MD MD
22	46	Omaha-Council Bluffs, NE-IA MSA
23	31	Madison, WI MSA
24	23	Fort Worth-Arlington, TX MD
25	24	Lubbock, TX MSA
26	43	Fayetteville-Springdale-Rogers, AR-MO MSA
27	37	Seattle-Bellevue-Everett, WA MD
28	13	Brownsville-Harlingen, TX MSA
29	45	Columbus, GA-AL MSA
30	39	Clarksville, TN-KY MSA
31	30	Baltimore-Towson, MD MSA
32	94	York-Hanover, PA MSA
33	15	Durham, NC MSA
34	59	Mobile, AL MSA
35	54	Lincoln, NE MSA
36	18	Fayetteville, NC MSA

37	32	Pittsburgh, PA MSA
38	34	Shreveport-Bossier City, LA MSA
39	12	Trenton-Ewing, NJ MSA
40	75	Peabody, MA MD
41	129	Worcester, MA MSA
42	84	Nashville-Davidson--Murfreesboro--Franklin, TN MSA
43	55	Honolulu, HI MSA
44	63	Denver-Aurora, CO MSA
45	100	Lexington-Fayette, KY MSA
46	29	Corpus Christi, TX MSA
47	27	Bakersfield, CA MSA
48	61	Charleston, WV MSA
49	83	Philadelphia, PA MD
50	21	Oklahoma City, OK MSA