

Running Head: Building Resilient Sustainable Economies

Building Resilient Sustainable Economies via the Cooperative Sector and Flexible  
Specialization: Lessons from the Emilia Romagna Region of Italy

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Saturday May 2, 2009

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**Abstract**

This paper discusses the potential for economic networks to aid in the creation of resilient and sustainable economies, and the social, economic and governmental supports necessary to create those networks. Specifically the cooperative and cooperative networks of the Emilia Romagna region of Italy are examined as well as the system of flexible specialization in production and Industrial Districts that also exist in that region, along with the support of the La Lega cooperative network, the local culture and regional and national governments. Drawing on the literature around resilience thinking and sustainable economics conclusions are drawn around the aspects of these systems that further resilience and sustainability and several courses of action are recommended for local, regional and national policy makers.

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## I. Introduction

The current economic downturn has left pundits, politicians and citizens questioning the shape and base of the U.S. economy. With local leaders appealing for stimulus, sustainability activists rallying for clean jobs and the U.S. president claiming "we cannot rebuild this economy on the same pile of sand" (quoted in Stevens, 2009) alternative, workable models for global, national and regional models for economic development are increasingly important. This financial crisis is paired with even broader crises of climate change and more widely of a society whose consumption of resources and output of pollutants is unsustainable. While few if any national or global economic models exist that contain the ability to both build an economy more firmly rooted in genuine value creation and to create a more sustainable society there are several regional models that offer a valuable source of policies, institution and social structures for a new economy.

Perhaps one such model is that of the regional economy of Emilia Romagna (ER) in northern Italy. Unified by a commitment to an economy driven by entrepreneurship and manufacturing inside of a larger social context the post war development of the region has become a success story of a culture that charted a middle way between the gigantism of capitalism and communism. Of particular interest in the construction of an economy that is more socially and environmentally sustainable are two components of the ER model, a strong and well networked cooperative sector and a manufacturing economy based in networks of flexible specialization rather than in the Ford/Taylorite models of industrial production. What makes these components especially intriguing is their structure as networks with multiple formal and informal connections between each member organization and interlinking scales of activity lends to them the possibility of acting as healthy complex adaptive systems capable of not only

increasing the sustainability of an economy but also its resilience. The purpose of this paper is to look for links between the concepts of ecological sustainability and resilience, the two economic elements mentioned above and the cultural, economic and political structures that foster them. The first step in examining these linkages is to detail the key aspects of the Flexible Specialization (FS) system of production, ER's cooperative sector and their associated support structures. Secondly this paper examines how these arrangements aid or deter key aspects of sustainability and resilience including environmental quality, equity, economic functionality, diversity and feedback mechanism. Lastly in an effort to provide guidance to for communities seeking to adopt aspects of the ER economy possible policy recommendations are explored along with several examples of programs inside the United States that could serve as culturally appropriate models of development.

## **II. The Economy of Emilia Romagna**

### *Background*

In order to understand the modern ER economy it is first necessary to have a small understanding of its political context and the mode of development pursued in the post-World War II period. The ER region is comprised of 7 of Italy's 103 provinces and is one of 20 self governing political units, with significant control over social and industrial policy. Part of Italy's Red Belt ER's regional government has been controlled since the end of fascist rule by coalition government's lead by either Communist or Socialist parties. Prior to fascist rule in 1922 ER had an extended history of cooperative and labor movements which suffered from repression and government seizure during the Mussolini era and served as the backbone of the local resistance to fascist rule (Logue, 2006). During the WWII period ER sustained significant damage to its industrial base as it formed part of the "Gothic Line" between allied and axis troops from 1943 to

1945. Despite the industrial devastation and low pre-war standard of living post war economic spending by the national government was extremely limited due to political differences between national and regional governments (ER received only .75% of all Marshal Plan spending (Capecchi, 1990)). This lack of spending on large-scale industrialization changed the course of manufacturing development in ER away from factory style production and rapid urbanization and towards a smaller, more localized production model. This change was aided by a history of agricultural entrepreneurialism in the region and the layoffs of thousands of skilled manufactures from wartime production in the postwar years. In addition the Communist and Socialist movements in ER also had a history of alliance with and encouraging the development of small business, an alliance made stronger through regional resistance to fascism the national Christian Democratic Party's preferencing of large industries over small business in the post war period.

By the late 1970's the shape of the modern ER economy had been set into place consisting of a manufacturing/agricultural/service economy with slightly higher levels of employment in agriculture and manufacturing than in Italy as a whole and a geographically dispersed manufacturing sector. What strongly differentiated the ER economy from the rest of the national economy was the prevalence of strong networks among businesses, a strong cooperative sector and the smaller average size of firms in its manufacturing sector, despite its larger per capita manufacturing employment (28% employees in firms of 10 or less employees with only 10% in firms of over 500 as compared with 24% and 23% for Italy as a whole) (Brusco, 1982).

### *Flexible Specialization*

Today the modern ER economy is perhaps one of the healthiest in Europe, with a regional GDP per capita ranking 10<sup>th</sup> out of 122 regions in Europe. Per capita income is 50%

higher than the national average (Lappe, 2006) with an unemployment rate of 3.1% while accounting for 9% of Italy's GDP, 12% of its exports and 30% of its patents with only 7% of its population. Income distribution is also among the most equitable in Italy, with the ER region maintaining a GINI Coefficient of .242 (as compared to .370 for Italy as a whole and .408 for the United States) (Cornia, De Vogli, Mistry, & Gnesotto, 2005). The economy also continues to maintain a balance between services (65% of GDP) manufacturing and construction (30%) and agriculture (5%) (Logue, 2006).

Anchoring this economy are two methods of organization that contrast sharply with the economic experience of most modern developed countries. The first of these methods of organization is a system of production based around Flexible Specialization (FS) rather than a Taylorite/Fordist style of large scale, factory based production. FS produces goods in small and medium sized factories using shorter production runs of an individual product but producing more variety in final products than a large scale factory with a focus on maximizing the quality of production rather than minimizing cost. These shops and factories in general do not produce whole goods but rather specialize in a particular type of part (for instance cylindrical objects or rollers), combining with other firms to produce finished products, resulting in a *fabbrica diffusa* (scattered factory) approach to manufacturing (Nutti, 2004). As an example in the production of line of cabinets or other piece of furniture one shop (firm 1) may take the order and fabricate the doors while contracting another (firm 2) to produce the cabinets bodies themselves and a third (firm 3) applies the finishes. In future orders the firm who finished the first product line (firm 3) may receive orders for another form of cabinet or perhaps bookshelf and then contract out to firm 2 to build the body. In ER this system take the form of small *artigianati* (self employed artisans) firms which account for 41.5% of all enterprises in the region and whose size is in 90%

of firms smaller than 50 employees with only four employing more than 500 employees (Restakis, 2007).

Firms involved in FS production coordinate themselves through three forms of networks with a range of formal and informal relationships. Traditionally firms have formed informal networks within local regions in which relationships are based around reputation and trust in which handshake deals were the normal form of production agreement. In contrast to many other systems of outsourcing no one firm in these systems acts in the role of lead coordinator, instead the role of sub-supplier and final seller of goods is flexible and moves between firms. This system of organization is common in Industrial Districts (discussed later) and is based in a strong community of production that lowers coordination costs (Capecchi, 1990; Hancock, 2006).

A second form of organization revolves around a constant lead organization which facilitate the design and production of a particular product but outsources most manufacturing to other firms, saving assembly of the final product for itself. One example of this is mode of organization is Duccati Motors based in the regional capital of Bologna who designs, markets and assembles motorcycles but relies on a system of manufactures for almost all of its parts. This is the form of FS most similar to a U.S. style of manufacturing, especially in the automobile industry, separated largely by the scale of the operation and the regional nature of the supplier network. This system allows for the development of a more advanced design and for the creation of a specific brand name with related marketing apparatus. Lastly in response to global competition a new model of “virtual firms” in which a group of smaller firms creates a formal relationship to allow them to market, design and produce products as a group rather than through

individually firms, while still maintaining the ability to produce for firms outside of group (Hancock, 2006).

In the context of Emilia Romagna the most visible examples of Flexible Specialization occur inside of Industrial Districts (IDs) and Industrial Sub Systems. IDs consist of groupings of firms which both cooperate in the production of goods and compete to produce the best products. According to Vittorio Capecchi's *A history of flexible specialization and industrial districts in Emilia-Romagna* the characteristics of an ID which are not described above are:

”(b) Many small and very small firms in a given territory which have the same type of flexible production...

(e) The relations between firms that sell on the market takes the form of an interweaving of competition and co-operation: that means that the firms do not fight on another but try to find market places for new production...

(f) The zone [Industrial District] is so defined because it refers to a very limited geographical area which is specifically characterized by a certain dominant production;

(g) There is a strong interconnection between the district as a productive reality and the zone as a mixture of family, political and social life.” (Capecchi, 1990)

Examples of IDs in the Emilia Romagna region include the city of Capri, focused on knitware production, Sassuolo, focused on ceramic tile and Imola, concentrating on the construction of doors and windows for new buildings. Industrial Sub-systems also employ flexible specialization, and exhibit the characteristics above but do not focus on a single type of production, such as the city of Bologna, which contains several overlapping IDs in the areas of

packaging materials, motorcycles as well as other manufactured goods. Overall the ID's in the region employ 60.6% of the manufacturing employees (Bianchi, Miller, & Bertini, 1997).

Since the recognition of Italian and specifically ER industrial districts as a separate form of industrial organization in the early 1980's (Brusco, 1982) academic literature has recognized a number of advantages granted to the FS/ID model over traditional Fordist production, along with several weaknesses, both economic and social. These characteristics will be discussed in relation to the fostering of resilient and sustainable communities in the section IV but briefly FS/ID systems are seen to provide an "adaptive competitive advantage" over regions engaged in more traditional manufacturing, allowing them to change products more quickly to meet market needs. They are also able to produce higher quality and specialized products due to the prevalence of medium and highly skilled workers and more direct control over production processes. These workplaces also foster and benefit from a culture of production in the ID's in which communities are supportive of the economic benefits they produce and create a body of local knowledge and skilled worker that facilitate their success.

One area of weakness identified by mainstream economists in the FS/ID model centers around the ability to invest in research and development at the same rate as larger firms (or to get the same return per Euro, given the high start up costs of research and development). This lack of R&D investment has led to a low rate of technological development within firms and a view that ID's are "technological laggards" (Cainelli & De Liso, 2004). ID's have responded to this weakness in three ways which begin to suggest their relationship to resilience and their possibilities as industrial complex adaptive systems. First, though individual firms tend not to be able to engage in traditional lab based research or product development themselves, the diversity of firms performing the same function in a single ID represents a form of research in

and of itself, creating a type of evolution as many firms try different approaches to the same problems of production. Individually this process occurs in every organization as new forms of production are tried and more efficient processes are found over time. However, instead of one firm learning in a vacuum and protecting trade secrets from competitors, an ID has many firms performing similar tasks at once, discovering new means of production with the same or similar machines and passing those discoveries on to each other through informal social networks and the sharing of a worker pool, amounting to a form of cross-pollination that speeds the evolution of production processes. The entrepreneurial and competitive affect many small firms verses single large firms also adds to this form of innovation, creating and rewarding an “everyone a designer” (Van Der Ryn & Cowan, 1996) mentality among craftspeople. Secondly though firms do not conduct formalized process research they do conduct product innovation, creating more unique and saleable products with the same or similar processes, a less capital intensive but still innovative process (Cainelli & De Liso, 2004). Lastly ID’s have employed network and government supports to further process and major breakthrough research, the structures for which are discussed in section III.

A second weakness and threat to IDs is their high labor costs and the attendant inability to compete in a more globalized market against regions with lower labor costs (specifically Eastern Europe and Asia). The lowering of trade barriers has magnified this threat especially against the fine apparel industry as the protections provided by the Multi-Fiber Arrangement<sup>1</sup> expired in 2005, exposing many ID’s to new competition from abroad.

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<sup>1</sup> The Multi Fiber Arrangement (MFA, also known as the Agreement on Textile and Clothing (ATC)) governed the world trade in textiles and garments from 1974 through 2004, imposing quotas on the amount developing countries could export to developed countries. It expired on 1 January 2005. (Wikipedia, 2008)

Early in the development of IDs and through the 80's and 90's access to global markets drove growth in the IDs, allowing access to larger population who could afford their high quality but also relatively high priced goods, and exports still account for much of ER's GDP. However an inability to compete with global competitors has become a growing concern with the development of high quality manufacturing in low labor cost areas during the 1990's and 2000's (Capecchi, 1990; Hadjimichalis, 2006).

A third area of critique highlighted by social theorists highlights issues of labor rights and safety in small firms, specifically in Italy where larger firms are governed by industry wide contracts where as small firms are not and may under pay or mistreat labor (Hadjimichalis, 2006). Again, global issues are exacerbating these concerns as immigrants, especially non-European and often illegal, come to Italy and create an underclass of workers who are seen as different and exploitable. These issues and the difficulties in addressing them are discussed in Section IV.

### *Cooperative Economics*

The second anchor of ER's economy is their broad based cooperative sector. Sometimes referred to as a "third sector" in the economy cooperatives exist neither for the creation of a profit (as in the case of a normal firm) nor as part of a state office or enterprise. Instead a cooperative is "an enterprise which produces goods and services on behalf of their members and the community. Their primary objective is to satisfy member's needs such as employment, cheaper goods, housing, health services, etc" (Ammirato, 1996). Further a cooperative generally conforms to six principals of the International Cooperative Association (see figure 1). In ER the cooperative sector accounts for between 30 and 40 percent of the GDP

with 66% of residents (including children) members of at least one cooperative and more than 15,000 cooperatives in the region (Restakis, 2007; Thompson, 2003).

In general the cooperative sector can be divided into two branches, consumer and production cooperatives. Consumer cooperatives are owned by the consumers of the goods or services they provide, such as housing or retail cooperatives (REI is the largest American based example of a retail cooperative, while Coop Italia is Italy's largest retailer). Agricultural products cooperatives also fall into this category, owned by farmers to turn their products into higher value goods such as cheese or wine.

The second branch of the cooperative sector is the employee owned cooperatives, in which at least 50% of employees are also owners (an in which at least 50% of the company is owned by the employees). There are 2700 worker owned firms in ER, providing 6% of the employment in the region. Worker owned cooperatives are among the largest manufacturing firms

in the region (two out of four of the 500 plus employee businesses) (Restakis, 2007), providing an anchor for other firms in the FS production system and providing a commitment to maintain

<p><b>1st Principle: Voluntary and Open Membership</b> Co-operatives are voluntary organizations, open to all persons able to use their services...</p> <p><b>2nd Principle: Democratic Member Control</b> Co-operatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions...</p> <p><b>3rd Principle: Member Economic Participation</b> Members contribute equitably to, and democratically control, the capital of their co-operative...</p> <p><b>4th Principle: Autonomy and Independence</b> Co-operatives are autonomous, self-help organizations controlled by their members...</p> <p><b>5th Principle: Education, Training and Information</b> Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives...</p> <p><b>6th Principle: Co-operation among Co-operatives</b></p> <p><b>7th Principle: Concern for Community</b> Co-operatives work for the sustainable development of their communities through policies approved by their members.</p>
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**Figure 1: The 7 Cooperative Principals (International Cooperative Alliance (ICA), 2007)**

employment, capital and wealth in the community in which it is created (Hancock, 2008). The worker owned cooperative sector also extends into social and research cooperatives. Small social cooperatives deliver many government funded social programs, in some cases such as Bologna serving as the conduit for 85% of all social spending (Thompson, 2003).

Though it is tempting to speak of cooperative development in only positive terms it is worth noting a few of the market weaknesses and social challenges that ER's cooperatives encountered in their development. The primary challenge that worker owned manufacturing cooperative encounter, especially in the early stages of cooperative economic development is a lack of capital, due to the necessity of owner financing and their inability to sell equity stakes in the company (Adams, 2008; Ammirato, 1996; Scott, 2008). Though largely overcome for a period of time in ER's cooperative economy through the network based solutions discussed in section III lack of capital expenditures has recently re-arisen as an issue in production cooperatives needing to keep technological pace with private businesses (Logue, 2006). Other challenges to cooperative economies are cultural and are proving equally difficult to overcome, including social awareness of cooperatives as a concept, perception of cooperatives as austere, low paying businesses and a cultural tendency towards a more materialistic lifestyle (Ammirato, 1996; Logue, 2006).

Both the branches of the cooperative movement grow from a trunk made of cooperative networks and secondary organizations which in turn draw from a supportive culture and regional government. These supports provide an important view of how the cooperative economy has developed in ER and could be further developed in other cultural contexts.

### **III. Cultural, Network and State Support for FS/ID and Cooperative Economies in Emilia Romagna**

Economies, like plants, grow from the social and cultural ecosystems that surround them. In Emilia Romagna the economic structures of Flexible Specialization and Cooperatives have grown out of a specific cultural context and been reinforced by a set of social/economic networks and governmental policies. These outside variables are important to consider both because they buffer the economy against changes in the economic regime and because they provide important clues to how a similar system could be created through social and economic policy. Despite being considered mainly as individual influences in this paper it is important to recognize the interconnected nature of these influences and the economic structures they support. Examining these economic systems in a social context makes clear their development as a complex adaptive system in which the influences of culture, economic networks, and governmental action have no particular beginning or end and continuously act on each other to produce the economic regime of the region while also being acted upon by other factors pushing towards different set of economic states.

#### *Cultural Factors*

Emerging from World War II the ER region contained a culture that set the stage for the development of an economy based on Industrial Districts and cooperatives. These cultural influences included a strong agrarian entrepreneurial spirit, a political culture centered on democracy, communal preservation. Today this culture continues to influence the economic and social fabric. Manifestations of the entrepreneurial nature of ER's include not only the prevalence of worker owned cooperatives and small businesses but also the very high rates of informal and "gig" labor in the economy (though this may also indicate a lack of stability in employment) (Hadjimichalis, 2006). There also continues to exist a broad cultural agreement on

the direction of the economy represented by the high levels of unionization, continued rule of left and far left parties in the government, the acceptance and support of the cooperative movement by the Catholic Church and the prevalence of communist party members in surprising positions, such as at the head of the region's small business association (Fitch, 1996; Logue, 2006; Restakis, 2007).

Lastly there exists a strong understanding in the cooperative movement and in Industrial Districts of the concept of reciprocity, an understanding and trust in a community that inputs put in at one point to a system will eventually be rewarded despite a lack of formal economic agreement. The utility of this concept comes in the lowering of transaction costs for economic exchanges and in creating community bonds and can be seen in the ease of production arrangements among firms in ID's and in the cooperation between cooperative sectors fostered by the regions cooperative networks (Hancock, 2008; Thompson, 2003).

### *Cooperative Networks*

Without reference to open hostility by profit based corporations or state structures (as existed in Italy during the WWII and post war period) cooperative businesses experience market negatives that make them "islands in a capitalist sea" (Miller, 2006) without the support of other cooperatives. These negatives include a lack of access to capital, inability to take full advantage of low labor costs, small size and the attending lack of economies of scale in purchasing and lack of cultural knowledge of the business model and therefore a level of mistrust from other businesses (Scott, 2008; Adams, 2008; Smith, 2001). In order to counter these negatives the cooperatives of Italy have formed strong national networks with regional branches in every region of Italy including ER.

Though most of the literature around ER and cooperatives in Italy focuses on the largest of the Italian networks there are three separate networks in ER, along with similar associations for small businesses. The largest of these, La Lega is associated with left/communist politics and houses both its national and regional headquarters in Bologna. La Lega affiliated coops have more than a million members in ER (one in four ER residents). Smaller groupings represent the Catholic center-right cooperatives (Confcoop, 285,000 members) and the center left (Associazione, 75,000 members) (Thompson, 2003). These networks, and La Lega in particular provide key physical and business services to their cooperative members, promote a culture of cooperation both inside and outside of the network and represent the cooperative movement to provincial, regional and national governments. In a broader view these networks help to maintain the adaptability and flexibility of individual cooperatives and the cooperative sector to changing social and technological environments and to grant access resources usually only available to larger businesses.

One of La Lega's primary avenues for the provision of services to its member cooperatives is a number of consortia. These consortia make clear the network nature of La Lega, being operated as independent businesses in themselves with ownership resting in the hands of the central La Lega organization, individual cooperatives, other consortia and La Lega's financial institutions. The consortia provide a number of services to member cooperatives, depending on the cooperative sector they serve (agriculture, housing, retail, production or construction). Coop Italia, Italy's largest retailer is actually a consortium catering to a large number of locally owned consumer cooperatives operating under its umbrella. By operating together these cooperatives are able to match the research, marketing and purchasing power of larger retailers while still maintaining local control of retail outlets.

The role of a purchasing agent is an especially important one for several consortia who serve to aggregate the combined power of many small outlets and factories in order to secure better prices from larger suppliers. Another consortium serves to amalgamate the combined construction capacity of the numerous construction cooperatives in ER by bidding on contracts too large to for any individual cooperatives. The consortium then allocates the contracts, thereby regulating inter-cooperative relationships and preventing excessive competition amongst cooperatives. Lastly the *Instituto Cooperative per L'Innovazione (LICE)* is tasked with research and technology transfer to cooperatives, conducting research in the areas of energy, environment, construction and agriculture as well as providing for the transfer of the latest production and construction technologies to cooperatives. This function helps to mitigate the effects of small size on effective use of research funds and prevents technological stagnation in cooperatives and in associated ID's (Ammirato, 1996).

Solving a second set of problems for the cooperatives are a number of "second tier" cooperatives that play a vital role in enabling an economy oriented towards the provision of services rather than optimized for the production of profit. Chief among these second tier coops is Fincooper, the cooperative bank which is jointly owned by consortia, cooperative depositors and La Lega. Fincooper, through direct loans and financial guarantees, serves as a distributor of investment funds to cooperatives, guaranteeing a source of capital for cooperative growth at below market rates (thereby providing a distinct advantage to coops over traditional enterprise). It also offers financial services, including providing access to up to date market information and the availability of state contracts and funds. Lastly Fincooper serves as a strategic planning platform for the cooperative movement as a whole by managing the distribution of funds through the movement and targeting areas for growth and improvement. La Lega also provides other

financial services such as insurance, short term capital, merchant and member banking through a larger network of wholly and partially owned financial institutions (Smith, 2001).

La Lega's consortia and financial organizations represent an approach to the mitigating of cooperatives market weaknesses of small size and lack of capital and the attending lack of knowledge, purchasing power and access to further capital. What is interesting about this approach is that it has taken the form of a complex network of interlinking cooperatives, support organizations and governing bodies that all have close ties while also maintaining an ability to act independently. This approach contrasts starkly to that of both private firms and other cooperative organizations such as the Mondragon Cooperative Corporation which has adopted a much more centralized organizational structure (Smith, 2001) and has significant implication for the adaptability of La Lega's associated cooperatives. Specifically this approach combines an ability to respond to change garnered by long term investment in capital and capacity with knowledge that is both systematic (provided by the research functions of the large organizations) and local (provided by member coops).

A second set of functions performed by La Lega for its member cooperatives is overall steering for the cooperative sector in an attempt to advance the social values of the Cooperative Movement both within and outside of the network. La Lega's attempts to emphasize the importance of inter-cooperative solidarity and cooperation between cooperatives have been key in the development of the successful cooperative sector. By fostering inter-sector purchasing cooperatives have guaranteed themselves a steady income, creating a spring board from which they can move into other markets. These connections have been especially important in the development of the construction cooperatives who are employed to build and maintain housing cooperatives and in agricultural and retail cooperative development. The emphasis on cross

sector purchasing also creates a culture of cooperation for members by differentiation cooperatives as a business model from traditional enterprise (Hancock, 2008; Thompson, 2003).

La Lega also represents the cooperative movement to the public and state. Through their lobbying efforts they have managed to secure support for the idea of cooperation and cooperatives at the state and regional levels, securing beneficial laws and policies that were instrumental in the post war development of the cooperative movement and the long term stability of the sector in overcoming modern hurdles (Ammirato, 1996).

#### *The Role of Government in the Creation of FS/ID and the Cooperative Sector*

In considering the role of government in economic networks in ER it is important to consider the national and regional government's actions that have both created an economic and cultural environment favorable to their development. Interestingly the actions of the national government that perhaps has most helped to create the unique hybrid of ER's system of small scale flexible specialization was its lack of support for the region in the postwar period, when the ruling Christian Democratic Party's (CDP) hostility towards ER's communist led to a lack of support for large scale industrialization, and rampant cronyism between big business and the CDP drove small business further into alliance with the political left (Fitch, 1996).

Regardless of its antipathy towards small business the national government, pressured by cooperative networks, ER's regional representatives and the labor movement has put in place a series of laws that treat cooperatively owned businesses significantly differently from privately held enterprises. Sources disagree over whether these laws have preferenced cooperatives in the marketplace, or simply not favored private firms (Ammirato, 1996; Smith, 2001) but what is clear is that the laws have encouraged reinvestment of profits from cooperatively owned

businesses, prevented the private sale of cooperatives (demutualization) and more recently encouraged the development of cooperative networks.

The root of these laws lies in Article 49 of the Italian Constitution which recognizes the importance of cooperative enterprise and empowers the government to pass laws supporting its development. After the Constitution's passage in 1945 the Italian Parliament enacted Baslevi's Law to support Article 49. Baslevi's law differentiates cooperatively owned business from private enterprise, granting them tax-free status but also limiting the return on initial investment by members in the cooperative. This law also mandates the contribution of 20% of all profits to an "indivisible reserve" whose funds are reinvested in the cooperative, and whose value must be passed on to other cooperatives or the government in the event of private sale of the cooperative, creating a powerful disincentive to the extraction of profit from the cooperative. Since the original cooperative laws several revisions have been made, most significantly in the 1990's, requiring a higher level of ownership among cooperative users (for instance that more than 50% of workers at a worker owned-cooperative be owners) to qualify for tax breaks, allowing for private capital to purchase shares and requiring that 3% of all cooperative profits be donated to further national cooperative development (Ammirato, 1996; Logue, 2006). Together these laws serve to incentivize the creation of cooperatives and the reinvestment into them and to encourage a view of cooperatives as community wealth, rather than for personal gain (Hancock, 2008).

At the regional level the government has played an important role both in the support of Industrial Districts and the cooperative sector. In support of ID's the ER government has played much the same role as La Lega in creating access to services and research to small businesses. By supporting regional research groups that simulate the research and development branches of larger firms the regional government has helped to preference small businesses and maintain

their advantages of flexibility while mitigating their weaknesses. Among other topics the ER government's research firms monitor the regional economy, research new construction materials and pursue ID specific research into ceramics, knitwear and footwear. An important aspect of these research firms is their independence, allowing for research to be guided by local needs. "Flexible specialization of the production system was taken as a model also in the area of services to the firms" (Capecchi, 1990).

Another important role of the regional government is in the creation of flexible specialization and cooperative entrepreneurship is the technical education system, which combines training in manufacturing, design and entrepreneurship, preparing new workers to both work at and own firms, either cooperatively or as small business owners (Hancock, 2006; Capecchi, 1990).

Aside from the general support for small business (which also supports and encourages cooperatives) the regional government's support of cooperatives comes mainly in two forms. Much of the regional support comes in form of support for social cooperatives, which provide both traditional "welfare" services along with "real" services that enable a more competitive economy, such as low cost child care which enables women to participate at a higher rate in the formal economy (Fitch, 1996). This support of social cooperatives helps to create a culture of cooperation, which is furthered by general philosophical support from the regional government which recognizes that (in the words of regional finance minister Flavio del Bono) that "the massive presence of cooperative firms is a stabilizing factor in the regional economy" (Logue, 2006).

#### **IV. Emilia Romagna's Economic Networks Relationship to Sustainability and Resilience**

##### *Introduction*

Having looked at the prominent economic network in Emilia Romagna, there associated cultural and political influences and how these combine to create a complex adaptive system it is now possible to ask how these networks can help ER face the twin economic crises faced by modern economies, environmental degradation and financial instability, if at all. To answer this question it is useful to examine how ER's networks relate to two prominent concepts in ecological and social thought, sustainability and resilience. Without question sustainability is the more broadly recognized of these two concepts but has many definitions. For the purpose of this paper ER's networks are examined with regards to sustainability as a concept including environmental sustainability, social equity (equal distribution of wealth and more importantly power) and an adequate economy (as defined by the residents of the economy).

Resilience is an ecological concept which asks how able a system is to retain its "basic function and structure" in the face of disturbance (Walker & Salt, 2006). Originally explored by C.S. Hollings in the 1970's as an ecological concept modern resilience thinking extends to any complex adaptive system, including communities and economies, as well as ecosystems (and the relationships between these systems). Modern criteria for a resilient business or economy have been proposed by several authors, including "diversity, modularity and tightness of feedbacks" by Rob Hopkins discussion of resilience and its relationship to community self-reliance and interdependence in *The Transition Town Handbook* (Hopkins, 2008). A second set of criteria proposed by Dave Pollard in his book on cooperative entrepreneurship proposes five relevant criteria for a resilient business; improvisation and enterprise agility, self-management, organic financing, measuring success differently and staying small (Pollard, 2008).

*The Cooperative Definition of Economic Functionality*

Key to understanding if an economy is resilient (or economically sustainable) is to define the functionality which you wish maintain (Daily, 2005). Perhaps one of the most important contributions that the cooperative sector and Industrial Districts make to the resilience of their economy is to redefine this functionality. For private enterprise that functionality is defined as a return on investment via the provision of goods and services. For a cooperative economy the functionality is the provision of those goods, services or jobs (ICA, 2008) while for an ID the purpose is the provision of jobs to the community in which it is based (though the goals of each individual firm may still be a profit for the small business owner). This redefinition of functionality has significant implication resilience of a given business or economy. Profit based business is optimized to provide the largest return on investment possible while cooperative businesses in a market place focus on profit as a method of feedback, not the ultimate goal of the firm. This lack of need for short term profit creates a buffer for the businesses. Drawing on Walker and Salt's basin metaphor (Walker & Salt, 2006) for determining the ability of a system to shift regimes profit in a cooperative business could be thought of as deepening the basin and increasing distance from a threshold (business closing or layoffs).

The benefits to the workers and community in this lack of optimization for profit can be seen specifically in ER in the "no layoffs" commitment of most cooperatives. This policy represents a commitment to layoffs as a last resort, preceded by pay cuts, part time work and job changes. By choosing other options over layoffs the business is able to maintain at least partial functionality (the provision of jobs) while it seeks a return to a more stable state instead of the loss of function represented either by layoffs or business closings that a profit based business would seek. A second timely example of the preservation in function in the face of disruption

represented by cooperative networks is the success of cooperative banking in the face of the 2008-2009 financial crises, during which no cooperatively run bank has sought bailout funding in the developed or developing world (International Labor Organization Online, 2009). By not seeking out the highest profit investments cooperative banks have managed to maintain their function as a safe store of community wealth in the face of financial disturbance.

The cooperative redefinition of the economy also resonates strongly with the multi-generational aspects of sustainability. A dominant theme in the discussion of cooperatives in Emilia Romagna is “intergenerational solidarity” (Hancock, 2008) in which cooperatives are seen as “community economic assets.” This view is best expressed by a member of an Imola ceramics cooperative:

“Part of our mission is intergenerational mutuality. What we have seen here is the fruit of generations of work. We receive wealth from past generations and we create it for future generation of members. Our objective isn’t just to generate jobs for this generation but also for future generations” (Logue, 2006)

This view of a business has significant implication for the sustainability of the economic system. Most ethereally it speaks to a certain level of humbleness that is often recognized as important in the building of sustainable and resilient institutions (Van Der Ryn & Cowan, 1996; Walker & Salt, 2006). More practically the conceptualization of a cooperative as community rather than personal wealth implies that its benefits to the community should be measured against its costs to other community wealth important for intergenerational support (such as healthy ecosystems). Lastly it implies that the population in a highly cooperative region may be more open to the concept of “intergenerational mutuality” than one in which there is no significant model other than the short term extraction of value from businesses.

*Cooperatives and ID's in terms of Economy, Equity and the Environment*

Along with a redefinition of the purpose of the economy that makes more space for the possibility of a resilience and sustainability the cooperatives and Industrial Districts of Emilia Romagna have significant implications for the region's future social and environmental health. The following sections briefly examine these in relation to equity, the environment, and indicators of resilience, (adaptability, feedbacks and diversity). While not an exhaustive study it serves to show the promise of such a system for a more sustainable economy while also problematizing many of assumptions it would be easy to make about such a model.

That a highly productive economy with a large cooperative sector is associated with high levels of social equity would seem to be an easy conclusion to draw, and indeed there are many successes in terms of equity in ER. A few of the equity successes include a very even distribution of income across the region, a relatively low gender inequality, a high level of mobility between skilled and unskilled workers and relatively equal opportunity at business ownership, encouraged by the educational system, access to capital and widespread government support for entrepreneurship (Capecchi, 1990; Cornia, De Vogli, Mistry, & Gnesotto, 2005; Fitch, 1996; Hancock, 2006). ER also demonstrates a strong commitment to culture and learning, with Bologna spending more per capita on the arts than any other Italian city (Logue, 2006).

The cooperative and small business based economy also speaks to a more even distribution of power in the economic and social realms. However, some issues of equity arise with further examination. Inside of the cooperative sector there is still inequality of ownership, with many worker owned cooperatives being owned by a relatively small portion of workers (under 30%), with women often being underrepresented in the ownership structure. This issue

has been recognized as a problem by La Lega as well as the national government as a deleterious to cooperative values and recent changes to cooperative law now requires all worker owned cooperatives to be owned by at least 50% of their workers. It is also clear that the cooperative commitment to equity also begins to break down as community is eroded. This is often enabled by globalization, either in the form of foreign workers moving into communities and gaining employment but rarely ownership of cooperatives and or via pressure to produce low cost goods which leads to cooperatives out-sourcing production overseas to non-worker owned firms set up by worker owned cooperatives (Logue, 2006).

The ID model also would seem to contribute to the creation of an equitable social fabric, creating a large number of opportunities for ownership and control over businesses in society, and historically this has certainly been true. Here again however economic pressure from globalization is increasing consolidation inside of ID's creating a stronger power imbalance in communities (Nutti, 2004). A second concern regarding equity in relation to IDs (though not necessarily in regard to flexible specialization) is the high cost, low output, export based nature of their trade, which depends on the export of high quality, high cost goods while importing more modest goods from lower wage regions. Basing wealth in this model has worked well for individual IDs and Italy as a whole but the praise of the level of exports from IDs present in the literature on the region speak to a divide between proponents of the ER model of development and certain branches of sustainable economics who believe trade should be discouraged as it lessens the tightness of feedbacks in regards to environmental degradation and social inequalities (Daily, 2005).

Examples of how ER's cooperatives and Industrial Districts effect the environmental health of the region are far less numerous, and far more difficult to interpret. Industrial Districts

have been the focus of most of the available research and the results are certainly mixed, but also difficult to interpret because they are often not compared to society at large, industrial style production firms or small non-ID business. Theoretically ID's enjoy both advantages and weaknesses in transitioning to more sustainable economy. The weaknesses are more clear and center around two points, first the concentration of specific industries in geographic areas which lends itself to excessive emission of pollutants associated with the local industry (for instance sulfur oxides emitted by the ceramic tile industry) (Montini & Zoboli, 2004). Second the low levels of capitalization of small businesses can make adapting new and more expensive technologies for pollution controls difficult, a problem that regional governments have been slow to recognize and address.

Despite these weaknesses the ID/FS structure also offers some, at this point largely unrealized strengths in the creation of environmentally sustainable economy. Co-location of firms can be strength as well as a weakness, especially in the case of Industrial Sub-Systems where the diversity of firms creates a strong possibility for the interlinking of waste streams to input streams of other businesses. The vertically integrated nature of ID's also means less local dependence on resource extraction in any given area, decreasing the likelihood of over exploitation, and increasing the relative cost of environmental damages from extraction while lessening the economic impact of recycling and resource efficiency technologies, creating a higher chance of adoption.

Currently ID's are seen to be lagging as compared to other types of business in the implementation of new environmentally friendly processes (though many "end-of-pipe" technologies have been installed) as well as in the implementation of environmental laws. There is some evidence however that IDs are entering the new phase of environmental protection,

following the failure of command and control laws, through the use of voluntary agreements. ER leads Italy in the number of these agreements signed and implemented, with ER's IDs also having more implemented than any other regions IDs (Montini & Zoboli, 2004).

While cooperatives may suffer from the same difficulties in increasing their environmental sustainability as similar non-cooperative businesses and many cooperatives are not inherently environmentally responsible it is also clear that they are in many ways playing a leading role in creating a more sustainable economy in ER. Examples of this leadership include the Unipol (a La Lega financial institutions) social and environmental accounting (Logue, 2006) and the agricultural cooperatives leadership in the production of organic produce and reduction of pesticide use (Restakis, 2007). One of the most interesting examples of environmental leadership is the transition in Coop Italia from a focus on retailing low cost goods to higher cost, fairly traded and environmentally sound products as the communities it serves wealth has increased (Logue, 2006). This change was enabled by the flexibility of Coop Italia to choose which products to carry based on values other than optimizing return on investment. What makes this change interesting is that it directly relates to Herman Daily's ecological economics concept of increasing the quality of goods sold (thereby increasing quality of life) without increasing the quantity of goods. This approach to economic development has the overall effect of maintaining or even increasing living standards without increasing (and perhaps decreasing) the throughput of natural resource in the system (Daily, 2005).

#### *The Networks and Resilience Measures*

In addition to the traditional measures of sustainability it is also useful to examine how the economic networks in ER affect the measures of resilience of economic systems- diversity, modularity and the tightness of feedback mechanisms.

Given the highly fragmented nature of the FS/ID systems it is fairly easy to imagine that they are both diverse and modular. The existence of an ID is defined by a high degree of functional diversity inside of the system, as evidenced by the variety of types of work done by entities inside the system. This division of labor also leads to a high degree of modularity, one of the first benefits to the FS systems noticed in early literature. This degree of modularity allows the replacement of a given component of the system should its functionality fail. For example should a lead firm in an ID fail in its design of a product (resulting in a drop in number of orders placed) the capacity that would have been used to produce the failed product can easily be transferred to another, more successful product designed by a different firm the production capacity is not inherently tied to the design capacity (Brusco, 1982). In terms of response diversity however IDs may in fact display a significant weakness in that their production is optimized for a particular type of product, making the transition between products difficult in the face of increasing competition from global competitors.

La Lega as a cooperative network displays a significant level of both functional and response diversity, though its highly structured national and regional governance structure and dependence on government structures limit its large scale adaptability. The functional diversity of La Lega, the wide variety of goods and services that its cooperative produce and the widely varied supports that its consortia, financial arms, national and regional organizations offer are almost by definition one of the keys to the strength of the network. The multiscale nature of the network also creates a level of response diversity in the system, for instance allowing individual cooperatives to decrease profits in the face of market changes while consortia research new markets or technologies that could be used to restore the profits and competitiveness of an individual cooperative or sector. If there is a weakness in the resilience of La Lega it lies in the

slowness of its internal governance and outside governmental structures to adapt to changing cultural conditions and changes in global trade patterns (Ammirato, 1996). This widespread ability to respond and maintain functionality in response to economic changes meshes well with the fact that most of the threats to the cooperative sector in ER emanate not from purely business concerns. Instead these disturbances result from cultural shifts, the need for government regulation that addresses current problems (for the ability to create non-member equity) and decreasing community reducing commitments to equity (Logue, 2006; Restakis, 2007).

Shared by both IDs and cooperative networks is an increase in the tightness of feedbacks in terms of markets, internal operations and community responsiveness that helps to increase the adaptability of the systems to internal and external change. In both IDs and ER's cooperatives market feedbacks are created across multiple scales, using markets and profit as one measure but also using research institutions provided by the regional government or La Lega to increase their knowledge of broader market trends. The small scale and/or cooperative nature of IDs also helps to create internal feedbacks that can be used to improve production process or worker productivity (Cainelli & De Liso, 2004). According to one cooperative president "The gift of the cooperative is to create a sense of collective entrepreneurship. Membership requires thinking about the business" (Logue, 2006). By basing themselves firmly in communities both the IDs and cooperatives of ER have also shortened the feedback loops between community members, the local environment and themselves, creating a greater possibility for the cooperative or ID to meet the needs of the community and vice versa (for instance in the case of worker training). This base in community extends beyond worker cooperatives and IDs as well, to retail and housing cooperatives who, though they have regional and national structures, are run as locally owned businesses affiliated with other cooperatives to form larger networks (Ammirato, 1996)

(as compared to the largest American retail cooperative Recreational Equipment Inc. (REI) whose stores are nationally owned and operated without direct input from local members). Lastly it is also clear from the literature that trends towards globalization are tending to weaken feedback mechanisms in both cooperatives and IDs as first exports and then production are shipped overseas. This movement of products and production could tend to weaken the IDs advantages in terms of efficient process, internal improvements in processes and community based knowledge, but the long term effects have yet to be seen.

#### **V. Conclusions: Policy Recommendations for Building Stronger Cooperative Networks**

This paper has discussed the potential for economic networks to aid in the creation of resilient and sustainable economies, and the social, economic and governmental supports necessary to create those networks. Specifically the cooperative and cooperative networks of the Emilia Romagna region of Italy were examined as well as with the system of flexible specialization in production and Industrial Districts that also exist in that region, along with the support of the La Lega cooperative network, the local culture and regional and national governments.

From this discussion it is possible to draw the conclusion that the cooperative sector and a system of FS/ID help to create a more sustainable and resilient economy and that the attending social structures are vital in creating and maintaining the resilience of those economic systems. However it is only possible to draw this conclusion in relation to the economy if the population of the region is willing to redefine at least a portion of their economy as specifically for the provision of goods and services rather than for optimizing return to capital investment. Equally clear is that these economic regimes are not resilient against all external drivers, especially against slow moving cultural shifts (such as away from a culture of cooperation towards a more

materialistic culture) and against trends that significantly exceed the networks in scale such as economic globalization. Also clear is that further work needs to be done in the creation of a truly sustainable economy in Emilia Romagna across the measures of sustainability in general and specifically in the areas of environmental protection and ecological design of industrial processes in Industrial Districts.

### *Policy Recommendations*

In the current economic downturn it may be an excellent time for policy makers, local business people and cooperative advocates to promote a more resilient, balanced and sustainable economy. Based on the supports received for the economic networks and their importance in the creating of ER's economic well being the following recommendation and programs serve as an excellent starting place for furthering similar networks in an American context.

For federal policy makers clearly the most important aspect of promoting cooperatives is to provide a supportive but flexible legal structure that clearly differentiates them from profit oriented businesses inside of the tax code and prevents their demutualization by limiting returns from the sale of cooperatives. A similar recommendation would apply at the state level, though many states do provide for an official cooperative firm the regulations are often too inflexible to serve as a viable form (Adams, 2008).

Also at the state level clearly the support of small manufacturing enterprises through research institutions is important to offset larger enterprises advantages in research and development. Though many states already maintain such institutions two key elements of the ER regions approach to them are often missing. The first of these elements is research into both technologies and the current and future state of the market. The second is independence from

restrictive state direction combined with a flexibility to research what is needed by the local industry and accountability to the local industry (Capecchi, 1990).

At a regional or local level policy makers would be wise to pursue policies similar to the Chicago Manufacturing Renaissance Council <sup>2</sup>(CMRC), an alliance of labor, small manufactures, state and local governments and non-profit organizations. The CMRC seeks to restore Chicago as a manufacturing center by promoting flexible specialization style manufacturing grounded in a framework of “high road” economics that rewards both labor and capital fairly. Their first major initiative was the founding of the Austin Polytechnical Academy, a technical high school modeled on the educational programs of ER (Swinney, 2008).

The task for cooperative advocates is perhaps the most difficult, both because of the variety of policies and structures possible to pursue and because of the necessity of fitting cooperative structures into modern American culture. Despite their being around 30,000 cooperative firms in the United States (excluding housing cooperatives) (University of Wisconsin Center for Cooperatives, 2009) and numerous cooperative support organizations, from the large National Cooperative Business Association and National Cooperative Bank to numerous smaller regional funds such as the North East Cooperative Fund cooperatives seems a minor trend in modern American culture and business. What is striking about all of these organizations is the extent to which they form a series of islands, or at best an informal network, rather than the networks of mutual aid and support linked across scales and sectors that has made La Lega successful. In order to create a successful cooperative movement La Lega makes it clear that it is necessary to think about the cooperative economy not just in terms of individual cooperatives or support services but as a network in which effort goes both into the creation of

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<sup>2</sup> [www.chicagomanufacturing.org](http://www.chicagomanufacturing.org)

services that offset the market disadvantages of small and medium sized firms and connections and organizational structures that preserve the cultural and adaptability advantages that cooperatives enjoy.

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