UNDERSTANDING MONDRAGON GLOBALIZATION PROCESS: LOCAL JOB CREATION THROUGH MULTI-LOCALIZATION

Facing globalization threats to community stability

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Abstract

The stability of local communities is threatened by globalization and the international industrial migration process. This article explores Mondragon's international multi-localization strategy as an effective strategy to avoid de-localization and defend parent cooperatives employment while creating new jobs in developing countries.

At the end of 2006, the Mondragon Cooperative Corporation (here after MCC) located in the North of Spain, had 25 Globalized Cooperatives with 65 production plants abroad employing 14.601 people.

Based on the Mondragon cooperatives activity between 1996-2006, this paper:
- *Measures the relationship of creating employment abroad and defending employment at home.*
- *Analyses the impact that having production plants abroad has on the number of members vs. non members' evolution in the parent cooperative and in the company as a whole.*

This research includes analysis from 40 production plants in China, India, Mexico, Brazil and Eastern Europe.

Resumen

Las comunidades locales están amenazadas por el proceso migratorio industrial internacional de la Globalización. Este artículo analiza la estrategia de multi-localización internacional de Mondragón para evitar la des-localización y defender el empleo en las cooperativas matrices al tiempo que crea empleo en países en vías de desarrollo.

En 2006, Mondragon Corporación Cooperativa (MCC en adelante), situada en el norte de España, tenía 25 Cooperativas Globales con 65 fábricas productivas en el extranjero que empleaban a 14.601 personas.

Basado en la actividad de las cooperativas industriales de Mondragón de 1996-2006, el presente articulo:
- *Mide la relación existente entre crear empleo exterior y defender empleo en casa.*
- *Analiza el impacto de tener plantas de producción en el exterior en la evolución del numero de socios vs. no socios en las cooperativas matriz y en total.*

Esta investigación contempla el análisis de 40 empresas participadas en China, India, Méjico, Brasil y Europa del Este.

Resumé

Les communautés locales sont menacées par le processus migratoire industriel international de la Globalisation. Cet article analyse la stratégie de multilocalisation Internationale de Mondragon pour éviter la deslocalisation et défendre l'emploi au milieu des matrices coopératives et en même tant créer des emplois dans des pays en voie de développement.

En 2006, Mondragon Corporation Coopérative (MCC), située au Nord de l'Espagne, possédait 25 Coopératives Globales avec 65 fabriques productives à l'étranger que employaient 14.601 personnes.

Basé sur l'activité des coopératives industrielles de Mondragon de 1996-2006, cet article :
- *Mesure la relation existante entre la création d'emplois extérieur et la défense des emplois locaux.*
- *Analyse l'impacte d'avoir des unités de production à l'étranger dans l'évolution du nombre de travailleurs associés et non associés dans la matrice coopérative ainsi qu'internationalement.*

Cette investigation contient l'analyse de 40 unités de production en Chine, Inde, Mexique, Brésil, et en Europe de l'Est.

1. INTRODUCTION

As a result of the worldwide acceleration of economy globalization, we are witnessing an unprecedented creation of multinational production plants in developing countries, and a North-South and West-East industrial migration process. In the international Free Trade framework, firms pursue lower cost and market growth expectations in the so-called BRIC Countries[1] (Brazil, Russia, India and China) to succeed in the global markets.

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[1] This concept was presented in "Dreaming with BRIC" Goldman Sachs report in 2003. It predicted that Brazil, Russia, India and China would be giant economic forces in the coming century.

At the end of 2006 MCC's international structure employed 83.601 people worldwide. Over 14.000 are working abroad in the 65 production plants participated in by the 25 Parent cooperatives, with at least one factory abroad (hereafter refers to as GLOBAL COOPS) [2].

Mondragon's Globalization Process has several key aspects to be analysed: the maintenance of the cooperatives values at home and abroad, the impact of foreign subsidiaries upon the economic development of their regions abroad, the subsidiaries' workers participation in management, profits and property, and the subsidiaries' impact on the parent cooperatives. This article is focused on the impact of international multi-localization strategy on parent cooperatives' local jobs and the evolution of *cooperative employment*[3] .

Industrial capitalist firms, to remain competitive, may assume parent companies downsizing or closing as strategic alternatives. Mondragon, as a worker cooperative committed to their coop member's community, cannot. International multi-localization *Foreign Direct Investment* (hereafter refers to as FDI) seems to be the solution to avoid *de-localization,* thus defending their local community from the trigger of globalization threats, "unemployment".

This article addresses the following questions: First, do Mondragon's GLOBAL COOPS through multi-localization FDI, better defend local community stability creating more jobs in the parent Cooperatives and in their local community? Second, does Mondragon FDI policy have an impact on the evolution of Parent Cooperatives' number of coop members vs. non members' over time?

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[2] The so called in literature "multinational cooperative holdings" (Cote 2001, Spear 2001)
[3] In this article we use indistinctly *cooperative employment* as *cooperative members jobs* and *non cooperative employment* as *non cooperative members jobs.*

In order to answer these questions, we use a specific database based on MCC's Companies' annual activity reports for 1996–2006.

This paper brings together and contributes to three literature mainstreams. The first includes the paper by Inbroscio, Williamson and Alperovitz (2003) who present different place-based ownership models as a better counterforce to globalization's threats to local community stability. We address this issue, presenting Mondragon and their international defensive strategy to maintain local community stability as a worker cooperative empirical example.

The second mainstream investigates the impact of Mondragon's multi-localization FDI policy on cooperative principles and non-cooperative employment evolution (Bakaikoa *et al*.2004 or Cheney 1999). Our contribution is that we present new data based on a quantitative analysis of Mondragon's cooperative member's evolution in Parent Cooperatives.

Finally, we present the case of Mondragon in Spain, adding new data to Economic Geography research on FDI impact on parent companies employment (Barba Navaretti and Castellani 2003) and on developing countries' support through employment (Karnani 2006)

This article is the result of a four-year research project conducted during 2003-2007 by Mondragon University[4]. The overall research, as whole is considered a "Single Holistic case study" (Yin 2003), combining different research methodologies from Mondragon cooperatives "archival analysis", more than 100 interviews with MCC employees worldwide, an analysis of 40 production plants in China, India, Mexico, Brazil, Eastern

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Europe and Turkey and 9 "holistic multiple case studies" of Mondragon international subsidiaries best practices.

2. THE MAINTENANCE OF THE COOPERATIVE IDENTITY IN THE GLOBALIZATION PROCESS

Globalization breaks industrial firm's national and local structure. To remain competitive in global markets, companies look for new international placements to reduce costs by investing in lower labour cost countries (LDC) based on an industrial activity Vertical Integration (VFDI), access to market share in new emerging countries through Horizontal integration (HFDI) or a combination of both.

This globalization race results in *de-localization*, companies closing their parent companies' industrial activity to immediately open the same activity abroad (Irizar 2006), a *re-location* when the activity closed does not come from the parent company, or an expansionist *multi-localization*, when the new factory opened abroad does not necessarily mean the closings of an existing factory.[5]

These industrial *localization* movements have a substantial impact on local communities' stability. On the one hand, foreign firms' employment and FDI contribute to socio-economic development and a step forward in terms of poverty reduction (Karnani 2005, Sachs 2005 or Mandle 2001), although this assumption has been questioned by numerous scholars[6]. On the other hand the global market competition results in manufacturing firms downsizing and shutting down operations in

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[5] Literature is using "de-localization", "delocation" or "relocation" being its French translation "délocalisation" Spanish translation "deslocalización" (see IRIZAR 2006, Husson 2005)

[6] See Anderson and Cavanagh, *Field Guide to the Global Economy*, 47 or Dani Rodrik, *The new Global Economy and Developing Countries: Making Openness Work,* Washington: John Hopkins University Press. Collected also in Williamson, Inbroscio and Alperovitz 2001, p. 46-49

those countries with higher labour costs, which has an important social and economical impact. (Moore 1996).

Recent studies conclude that even though parent companies employment declines, it would have declined even more if these firms had not invested abroad. (Barba Navaretti 2003). According to the European Commission, "de-localization" is the biggest worry of the European (E15) community. Economic Geography emerges as an alternative to this phenomenon, attempting to reinforce the importance of place-based socio-economic development and the role of community enterprises or industrial worker cooperatives. (Hudson 2001, Williamson *et al* 2002).

Here we find, probably, the biggest difference between firms committed or not to its local community. An industrial capitalist firm, to remain competitive can face the challenge of globalization with at least two options or strategies: *multi-localization* or *de-localization*. A worker cooperative committed to their coop members community, has only one option, *multi-localization*, what is more, it seems to be the solution to avoid *de-localization*, defending their local community from the impact of globalization's trigger threat, "unemployment".

But the globalization process is also affecting community-based, democratic and social enterprise structures. The traditional local structure of worker cooperatives' was not adequately prepared to compete in a capitalistic global market. The new global structures were needed by the cooperatives, causing a "demutualization" or a "cooperatives hybridization process" (Spear 2001, Borzaga 2001). This has lead to the appearance of new cooperative realities "Cooperative holding" (Cote 2001, Chaves

1999) and new concepts such as "neo-cooperativism" (Larrañaga 2005) or "coopitalism" (Defourny, 1999).

That was the case for Mondragon, which, as a network of worker cooperatives committed to the Basque region[7] choose to handle foreign investment in a multi-localization strategy, opting to use FDI on private companies while creating new green-field affiliate firms abroad or while acquiring partially (through joint ventures) or firms owned exclusively by a Coop. This fact has been pointed out as a divergence from their traditional cooperative approach and a mutation of its model in the sense that MCC behaves as "a traditional capitalist employer operating in low-wage countries" (Huet 1997) with a capitalist expansionism growth illogic for worker-owned business finite growth ethic, "sacrificing the long-valued buffer zone between them and the turbulence of the international market" (Cheney 1999[8]).

At the same time, some authors keep a close look on the Mondragon Cooperative Experience's evolution, with the hope that "infant" affiliate companies evolve through adolescence to maturity, following their Parent Companies' spirit (Vanek 2007), the possibility of MCC becoming a new "Democratic Multinational Enterprise" (Errasti *et al* 2003), or one of the best examples of democracy in the business world (Malone 2001).

At the end of 2006 the 12 Industrial divisions of MCC employed 42.444 people, 19.079 cooperative members,14.601 employees working abroad in 65 production factories of 25 "Multinational Cooperative Companies" (GLOBALCOOPS) and international sales

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[7] According to MCC mission statement approved on the VII Congress on May 1999.

represented 56,7% of their total sales.[9] This makes MCC the 7th biggest corporation in Spain in total sales and the first of the European ranking in "Employee Shareownership" companies.[10]

3. MULTI-LOCALIZATION VS. DE-LOCALIZATION

Contrary to what one might think, MCC's first international steps had no strategic plan nor did a debate about globalization of cooperatives take place. According to MCC's international department director *"If we could have maintained our business here we would not have moved abroad."* and followed with *"We were doing what we had to do; the worst service we could do to the society was to disappear"*[11]. The decisions were taken to defend local employment in the coming future.

That was the case with one of the first factories created abroad back in 1989. COPRECI S.Coop[12], a cooperative that makes components for household appliances (founded in 1963) was asked to open a factory in Mexico by their US customer in order to continue being a strategic global provider. Curiously the same US client recently (2006) has relocated their factory to China, COPRECI Group still provides the same product but now from their production plant in China. COPRECI Mexico is still open, with a 600 employee's workforce and lead by a Mexican general manager that recently has become a "Coop collaborator -member"[13].

Once MCC opted to remain competitive in its markets competing at home and abroad against multinationals (Clamp 2003) the necessity of international multi-localization became apparent. As far as the issue of competitiveness is concerned, several studies

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[9] Based on MCC 2006 annual report and its cooperatives annual reports.
[10] According to Actualidad Economica No1258, June 2006 and European federation fo Share Ownership
[11] Herrasti J., 2005, Mondragon International Congress, Openning Session
[12] Copreci S.Coop at the end of 2006 Copreci S.Coop in Aretxabaleta (Mondragon region) had 863 employees being 688 coop members. Copreci Group had 2.030 employees spread worldwide in their 6 factories. As a Copreci spin-off was created in 1973 Orkli S.Coop that at the end of 2006 had 697 employees being 476 coop members.
[13] Copreci's international "collaborator coop members" policy is one of the best practices analyzed in the current research that will be published in future papers.

have shown that multinationals perform better than companies limited to one country in global and local markets.[14] As we mentioned before, for a traditional capitalist firm *de-localization* or *relocation* is an alternative, for a worker cooperative is not.

This defensive strategy, which may anticipate a shorter or longer future, has been the common cause behind all MCC international projects abroad.

Given the fact that the "international dimension" was identified as a fundamental tool for Mondragon industrial cooperatives competitiveness, a specific Internationalisation department was created in the new MCC central services structure in 1990. The first Internationalisation four-year plan was launched for 1991-1994[15] with one objective, "to promote the cooperatives' internationalisation process".

How has Mondragon been able to maintain employment in the parent companies in the Mondragon region where labour costs are 5-8 times higher cost than in Eastern Europe or 20-25 than in China or India?[16]

The phenomenon of downsizing, plant closures and multiple layoffs has reached crisis proportions in high cost labour countries in Northern Europe and in the North of the US[17]. In order to avoid this same fate, MCC needed to globalize and quickly. A new slogan in the minds of MCC managers typified their approach: *"How many new jobs do we need to create abroad to maintain one job at home?"*[18]

It has been already almost 20 years since Mondragon's first production plant was created abroad and since 1996 there exists homogeneous, comparable data for the

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[14] See for instance, Doms and Jensen (1998) provide evidence on the US, Criscuolo and Martin (2003) and Girma, Kneller and Pisu (2003) on the UK, Castellani and Zanfei (2003) on Italy and Bellman and Jungnickel (2002) on Germany.

[15] MCC Corporative Internationalization Strategic Plan 1999-2003

[16] See Eurostat 2004, Irizar 2006 or *CH-ina Survey 2005 Behind the China Kaleidoscope*

[17] See Williamson, Imbroscio and Alperovitz "Making a place for a community" to have a deep theoretical and empirical analysis of US impact of freer international trade. (p 9-16, 31-41)

[18] This question was mentioned in almost all the 100 interviews conducted with Mondragon managers

Mondragon Cooperatives' activity. We believe this is sufficient time to do a quantitative analysis of the social and economical efficiency of this international strategy. Therefore, we have chosen to analyze MCC Global activity during 1996-2006 for MCC Industrial Division Cooperatives. Furthermore, we focus on what Ormaechea (co-founder of MCC[19]) considers worker's cooperatives' most important action, *"employment growth"*. This is done at three levels: the level of the Parent cooperative, the level of the Mondragon Region local community and the global level (Parent Coop + traditional environment + abroad). We compare those cooperatives with at least a production plant abroad (GLOBAL COOPS) with the rest of the industrial LOCAL COOPS. At the end of 2006, we identified 25 GLOBALCOOPS with 65 "production plants abroad". (See Figure 1)

Previous research on international multi-localisation impact on employment

As we mentioned before, several studies have analyzed the impact of FDI and international multi-localization dimension on firms' competitiveness and economic performance. FDI impact on employment has not been so widely studied and the debate is still ambiguous depending on the methodology used and the countries analyzed.

Some of the relevant descriptive studies done in the 90s in the US (Scott 2000, Kletzer 1998 or Sachs and Shatz 1994) conclude that trade has been a net destroyer of domestic jobs, estimated at 40% of manufacturing jobs lost in the United States during 1978 and 1990. They also conclude that a direct relationship exists between job displacement rates and import penetration.

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[19] See IRIZAR, I.,2006, Chapter 4, pp.91-116 where Ormaechea, co-forunder or ULGOR the first cooperative in Mondragon created in 1956 and President of MCC during 1985-90, affirms *"Cooperatives have a strong social commitment, it's most important action, even if it is not always been recognize, their compulsive commitment to maintain and create employment."*

But it has only been in the last decade when due to more reliable datasets[20] and the use of more sophisticated regression approaches, that several studies analysing the direct impact of FDI on parent companies, downsizing and employment destruction have appeared (Barba Navaretti and Castellani 2003 or Kiyota and Matsuura 2006)).

Barba Navaretti's studies are especially relevant (Navaretti *et al* 2003 and 2006). These studies measure the impact of FDI investment on employment growth using *propensity score matching* while analyzing firms in Italy and France during 1999-2002. They also conclude that the parent companies employment reduction would have been greater if those firms did not follow a multi-location strategy through FDI. Based on propensity score matching a *counterfactual* statement was created to estimate what would be the hypothetical behaviour in the event that the company would not have invested abroad. (A version of this methodology is used in the current study. Test 2: H3 and H4)

International multi-localization can respond to a Vertical industrial Integration (VFDI) or Horizontal industrial integration (HFDI) strategies. Even if differences exist in the previous approach, according to some studies, both strategies (VFDI and HFDI) tend to unify. Current FDI investment flows pursue a cost production reduction and a market access at the same time. That it is the case with continental European FDI into the new EU members Poland, Czech Republic. (Becker 2005).

Most of the researches try to compare Multinational firms (MNE), LOCAL and those local companies that assume FDI and for the first time switch to MNEs (hereafter refers

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[20] The databases used in some of the studies have records since late 90s, that is the case of the *French Enquêtes filiales* maintained by the Direction of Foreign Economic Relations (DREE) of the French Ministry of Economic and Finances, which has records of firm with more than 20 employees investing abroad for the first time between 1995 and 2000. The *Italian Reprint directory*, maintained by the Polytechnic of Milan and the Italian Institute for External 1993 and 1998 or the *Japanese Kigyou Katsudou Kihon Chousa Houkokusho* prepared annually by the Research and Statistics Department, METI (1994–2002).

to as SW). It is widely accepted that MNEs behave better in terms of economic performance.

Another relevant aspect is firm ownership. Conclusions about their performance on employment destruction differ, being wider accepted than the theory that FOREIGN companies have greater employment volatility.

Economic geography proposes place-based ownership models as a strong alternative to local employment instability. "*With ownership and control held in a more collective or community-oriented fashion, such enterprises tend to anchor or root investment more securely in communities, providing a counterforce to globalization.*" (Inbroscio, Williamson, Alperovitz, 2003.) Until now, this ownership dimension has not been taken into account in the research conducted on employment growth and multi-location strategy.

Another aspects such as the use of *net job growth* or gross *job growth*[21], the influence of the difference in wages and geographical distance in between parent companies and their subsidiaries, firm size or the industry and period have been analyzed

Empirical analysis and Methodology

Our analysis of Mondragon's international multi-localization strategies' impact on employment and net job growth addresses the following question: are Mondragon GLOBAL COOPS through FDI, able to defend better than Mondragon LOCAL COOPS local community stability by creating more jobs in the parent Cooperatives and in their local environment?

The analysis includes the following primary variables as indicators of cooperative employment:

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[21] Net Job Growth, is defined as the job creation minus job destruction, this is widely accept but might cause misunderstanding, we can have a negative net job growth with a high job creation. Gross job growth takes into account both job creation and job destruction.

VARIABLE NAME	VARIABLE DESCRIPTION
Employment	
PT	Total number of jobs
PIN	Number of jobs in Spain
PCOOP	Number of jobs in Parent Cooperative
PEX	Number of jobs abroad
MEM	Number of Coop members
Coop members vs. Non members	
MEMdPT	Coop members divided by Total jobs (MEM/PT)
MEMdPCOOP	Coop members divided by Parent Coop jobs (MEM/PCOOP)

Table 1: Variable description

The sample has been constructed from MCC annual reports. This database includes cooperative activity reports during 1996-2006 for Mondragon industrial Cooperatives. For the first time a merged database of Mondragon GLOBAL COOPS exists, allowing us to compare their performance with other cooperatives.

	WORKFORCE AT 31 DEC.			GROWTH 99-06
	1999	2002	2006	
GLO_PT	13,318	21,049	32,041	18,723
GLO_PIN	11,884	15,255	18,123	6,239
GLO_PCOOP	11,367	13,832	14,554	3,187

Table 2: MCC Industrial Division workforce: GLOBAL COOPS
Source: ex novo, adapted from MCC annual cooperatives reports

Two different tests are conducted in order to measure FDI impact on employment generation:

Test 1: Comparing GLOBAL COOPS vs. LOCAL COOPS

The working hypotheses are:

H1: "Those Cooperatives with at least one production plant abroad create

more jobs IN THEIR PARENT COOPERATIVE".

H2: "Those Cooperatives with at least one production plant abroad create

more jobs IN THEIR LOCAL COMMUNITY".

Based on PCOOP and PIN two new variables were defined (PCOOP_99) and (PIN_99).

These two variables were used to confront both groups as a paired sample in two alternative hypotheses about the distribution: parametric and non parametric

The statistical analysis is based on "paired samples" annually for the period 1999-2006.

Following both a Parametric, "Normal Bivariant Distribution" or a "Non-parametric" one, comparing both samples' "means" in order to measure if a "statistically significant difference" exists or not and the direction of the relationship. The "parametric" distribution uses a T-student test being K=n-1. For the "non parametric" distribution we will use the Wilcoxon test.

Test 2: Measuring FDI's impact on employment growth for SW-GLOBALCOOPS

It is a descriptive approach to Barba Navaretti and Castellani's (2003) FDI analysis.

The working hypotheses are:

> H3: "FDI generates a bigger net-job growth IN THEIR PARENT COOPERATIVE during the three years after starting FDI".
>
> H4: "FDI generates a bigger net-job growth IN THEIR LOCAL COMMUNITY during the three years after starting FDI".

In order to measure the specific impact of FDI on cooperative employment, we have to select SW-GLOBALCOOPS. Therefore, we identified those GLOBALCOOPS at the end of 2006 that were not GLOBAL COOPS in 1999. It can be said that those COOPs which assumed their first FDI (opened their first production plant abroad) during the period analyzed (1999-2006) switched from being LOCAL to GLOBALCOOPS.

SW-GLOBALCOOPS	YEAR FIRST FDI
FAGOR INDUSTRIAL FAGOR AUTOMATION MAIER	1999
EIKA DIKAR WINGROUP	2000
LKS FAGOR EDERLAN	2001
MATZ ERREKA CIKAUTXO DANOBAT SORALUCE	2002
ORKLI	2004
TAJO COINALDE	2005

Table 3: MCC Industrial Division SW-GLOBAL COOPS (1999-2006).
Source: ex novo, adapted from MCC annual reports

We have to compare the performance of the SW firms before *exante* and after *expost* (the FDI). According to Barba Navaretti and Castellani 2003[22], the *expost* SW behaviour needs to be compared with the performance that the company would had if it did not assume the FDI investment. Firms' behaviour cannot be replicated as in a laboratory test , therefore *propensity score matching* is used in order to construct a *counterfactual* firm with which to compare. It is said, based on the company's previous performance (sales, employment, etc) the closest LOCAL company in the database is selected comparing the *expost* performance of the SW company with this counterfactual LOCAL company.

Inspired by this approach and taking into account that K=14 for our SW-GLOBAL COOPS we create a specific counterfactual LOCAL enterprise. The counterfactual

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[22] This methodological approach was built in 2003 analyzing Italian firms during 1999-2002. Afterwards has been replicate in other countries: 11 European countries (Navaretti and Venables 2004) and Italian and French SWs firms (Navaretti, Castellani and Disdier 2006) with a reliable and robust performance.

criterion selected is the average of MCC LOCAL COOPS employment growth during the specific years for each SW-GLOBALCOOPS investment date.[23]

Concretely we make an adaptation of (SW) and difference-in-difference estimator (DID). The DID estimator compares the difference between pre and post-investment performance growth in both groups. It measures the difference in the change of the steepness of the performance trajectories for the two groups of firms.

In our case we only include employment performance (*L*), not including in the analysis other economic performance (sales, output, etc).

We define (SWI) for the *expost* comparison in between (SW_GLOBALCOOPS) and (HIPOTHETIC) behaviour.

We define (LDID) for the comparison in between employment net-job growth *expost* and *exante* for both variables: (SW_GLOBALCOOPS) and (HYPOTHETIC)

Formally, are given by:

$$\overset{\wedge}{\alpha}_{SWI} = [\Delta \overline{L}_{it+3}^{1} - \Delta \overline{L}_{it+3}^{0}]$$

$$\overset{\wedge}{\alpha}_{LDID} = [\Delta \overline{L}_{it+3}^{1} - \Delta \overline{L}_{it-3}^{1}] - [\Delta \overline{L}_{it+3}^{0} - \Delta \overline{L}_{it-3}^{0}]$$

Being:

$\Delta \overline{L}_{it+3}^{1}$ = The mean employment growth achieved by the company on the third year after the company FDI

$\Delta \overline{L}_{it+3}^{0}$ = The mean employment growth achieved by the counterfactual company on the third year after the company FDI

$\Delta \overline{y}_{it-3}^{-1}$ = The mean employment growth achieved by the company on the previous three years before the FDI

$\Delta \overline{y}_{it-3}^{-0}$ = The mean employment growth achieved by the counterfactual company on the previous three years before the FDI

$\Delta \overline{L}_{i\ t}$ = Employment growth achieved in the three years prior to the FDI

i = the specific company K=14

t = the FDI year, being different for each company

The statistical analysis is based on "paired samples" for every SW-GLOBALCOOP. Following both a Parametric, "Normal Bivariant Distribution" or a "Non-parametric" one, comparing both samples' "means" in order to measure if a "statistically significant difference" exists or not and the direction of the relationship.

The "parametric" distribution uses a T-student test being K=n-1. For the "non parametric" distribution we will use the Wilcoxon test.

Results

According to the statistical tests results (See Figure 2a):

The H1 and H2 are ACCEPTED, *"Those Cooperatives with at least one production plant abroad create more jobs IN THEIR PARENT COOPERATIVE (H1) and IN THEIR LOCAL COMMUNITY (H2)"*

	TOTAL COOPS	GLOBAL COOPS	LOCAL COOPS
PT	20,531	18,723	1,808
	93.69%	140.58%	21.04%
PIN	8,233	6,239	1,994
	41.26%	52.50%	24.71%
P COOP	4,285	3,187	1,098
	22.11%	28.04%	13.71%

Table 4: Employment growth from 1999 to 2006, measured in net-jobs creation and net-jobs % growth: TOTAL vs. GLOBAL vs. LOCAL COOPS
Source: ex novo, adapted from MCC annual reports

In the second test we specifically analyzed the impact on employment growth prior to the *exante* and after *expost* a local coop is assumed to open an international production plant abroad.

The H3 is NOT ACCEPTED and H4 is ACCEPTED. (See Figure 3a and 3b). Based on Mondragon SW_GLOBAL_COOPS annual employment growth during the three years after their first FDI.

We may affirm: *"The production activity abroad through FDI created significantly more jobs IN THE LOCAL COMMUNITY but, even if it created more, is not significantly bigger than the growth IN THE PARENT COOPERATIVE"*.

The employment growth has been compared with the hypothetical performance of SW_GLOBAL COOPS would have if did not assume the FDI. This was measured by the new *counterfactual* variables (HYPOTHETIC) created to compare with SW growth.

	REAL SW (FDI)	HYPOTHETIC (NOT FDI)
PT	3,201	701
	54.16%	11.86%
PIN	1,263	696
	21.38%	11.78%
P COOP	412	399
	7.80%	7.56%

Table 5: Employment growth since FDI to 3 years after FDI measured in net-jobs created and net-jobs % growth: SW_GLOBALCOOPS vs. "HYPOTHETIC"

From the local community stability, Mondragon GLOBAL COOPS defend their local community employment from globalization threats better. According to MCC, GLOBAL COOPS also have better economic results as far as "total sales", "international sales", "turnover" and "Parent Cooperatives total sales".[24]

In both cases (SW_GLOBALCOOPS) and (HYPOTHETIC) we observed that their annual growth is reduced, coherent with previous studies that affirm that state that lately the employment growth in high cost countries is reduced but less that what would be if these companies did not assume an FDI investment.

Unlike previous studies in the case of Mondragon there is not a Parent companies' employment net-growth destruction but instead an employment creation. This conclusion is coherent with Inbroscio, Williamson and Alperovitz's (2003) conclusions that presenting place-based ownership models as a superior counterforce to globalization's threats to local community stability. Future studies should specifically confront Mondragon employment growth with neighbour traditional capitalist firms in Spain.

The previous analysis may prove that Mondragonians were right in their intuition to use international multi-localization FDI as a tool to maintain and increase cooperative

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[24] According to J. Herrasti presentation at "Basque economy observatory" on 2007 February the 28tt.

employment at home[25], but the strategy of introducing capitalistic structures might have a direct impact on Cooperatives members' evolution.

4. COOP MEMBERS vs. NON MEMBERS:

Numerous scholars have recently pointed out the risk of Mondragon's international policy, which is, growing their non-cooperative employment under affiliated private economic structures. The original Mondragon commitment to never employ more than 10% non members was exceed using a variety of contractual relationships. Furthermore, the fact that they do not have a plan to transform these affiliated companies into a cooperative has been considered a departure from cooperative principles (Huet 1997).

Therefore our second analysis is focused on Mondragon GLOBAL COOPS[26] cooperative member's evolution and their representation out of the total workforce and the Parent cooperatives' workforce. There are previous qualitative analyses on Mondragon workers democratic control *degeneration process* (Kasmir 1996, Cheney 1999). Our analysis does not measure nor include the qualitative impact, but the quantitative evolution of coop members vs. non members.

Empirical analysis

We use a quantitative criterion measuring Mondragon's number of coop members over total workforce (MEMdPT) and over Parent Cooperative workforce (MEMdPCOOP). Here again, we compare GLOBAL COOPS with LOCAL COOPS.

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[25] On Mondragon University postgraduate Master in Cooperativism in March 2007 we had the opportunity to share with A. Cancelo, MCC President in between 1996-2004, he was positively surprised by the historical archival analysis of the strategies they had to promote at that time.

[26] The term that academia has given to this new structure of worker cooperatives parent companies owing private branches *"Multinational Cooperative Holdings"* . In the current research we will use the term "GLOBAL COOPS"

	COOP MEMBERS vs. NON MEMBERS		
	1999	2002	2006
GLO_MEM/PT	67.41%	53.09%	38.25%
GLO_MEM/PCOOP	78.97%	80.78%	84.22%
LOC_MEM/PT	54.96%	60.62%	65.58%
LOC_MEM/PCOOP	58.98%	63.91%	74.90%

Table 6: MCC Industrial Division Coop member's representation evolution
Source: adapted from MCC cooperatives' annual reports

Methodology and working hypotheses

The working hypotheses are:

> H5: "Those cooperatives with at least one affiliated production plant abroad do not necessarily have a smaller number of members out of total workforce INTERNATTIONALLY".

> H6: "Those cooperatives with at least one affiliated production plant abroad do not necessarily have a smaller number of members out of total workforce IN THE PARENT COOPERATIVE".

In these two hypotheses we follow the same "paired sample" analysis done previously on H1 and H2.

Results

According to the previous test the results obtained (See Figure 4):

The H5 is REJECTED; the number of members out of total employees is necessarily smaller for "GLOBALCOOPS" than "LOCALCOOPS" measured year by year for the period of 1999-2006

The H6 is ACCEPTED; the number of members out of total Parent Cooperative workforce is not necessarily smaller for "GLOBALCOOPS" than "LOCALCOOPS"

We may conclude that Mondragon's international policy:

- Does not necessarily affect cooperative employment evolution in Parent Cooperatives. Additionally we may observe that it is bigger in GLOBAL COOPS increasing from 79% in 1999 to 84% in 2006 while LOCAL COOPS go from 59% in 1999 to 75% in 2006. Both of them are increasing annually while LOCAL COOPS is increasing faster.

- Does affect GLOBAL COOPS cooperative employment evolution internationally. The GLOBAL COOPS increased from 67% in 1999 to 38% in 2006 while LOCAL COOPS went from 55% in 1999 to 66% in 2006. Therefore an international workers participation policy is needed.

Nevertheless, a specific analysis should be conducted to measure the qualitative dimension of democratic workers participation.

5. DATA AND METHODOLOGY LIMITATIONS

In order to properly interpret the previous results the following "data limitations" have to be taken into consideration:

- The period analyzed (1999-2006) is short, especially for using a statistical test.

- When considering the expansionist internationalization phase of Mondragon Industrial Coops, all coops except for 5 GLOBAL COOPS are in their 10 first years of globalization. This fact is critical while interpreting the results.

- Test 1 is "descriptive" and not "cause-effect": therefore when interpreting, we assume *Post hoc, ergo propter hoc*.

- The criteria used in Test 2, does not include *propensity score matching*, it should be replicated using the same test, including a database of other industrial companies and cooperatives outside Mondragon.

- Does not include Information about employment in production plants abroad with less than 3 Million euros, service or sales representative affiliated companies is not included, nor those with a share of ownership by the parent cooperatives smaller than 20%.

- The 25 GLOBAL COOPS included are those which at the end of 2006 have a productive plant abroad, this has to be taken into account while interpreting other periods such as 1999-2004 alone.

- The influence of economic growth in the Mondragon region, Spain, Europe and worldwide during the period analyzed, 1999-2006.

- The conclusions are based on merged information; the different stages, sizes and strategies followed in the globalization process by those 25 GLOBAL COOPS are not analyzed. (forth coming publications on the same dataset will include this analysis)

- The employment data analyzed is based on "net growth": it does not include people who left the company or those who retired. This fact is especially important when interpreting growth in the "number of Coop members".

- The information about cooperatives employment has been gathered based on MCC cooperatives annual activity reports and specific information provided by MCC. Information previous to 1999 did not have enough statistical reliability to be included.

- Information about ULMA Group employment, which joined MCC in 2001, has been included since that year in order to be coherent with MCC reports. Hypotheses' tests including and not including this data have been done with similar results.

- A 95% probability was used on H1, H2, H5 and H6 and a 90% probability on H3 and H4.

- Information of new cooperatives created or cooperatives that closed has not been specially treated.

6. CONCLUSIONS

The current paper "Multi-localization vs. De-localization" demonstrates quantitatively:

- The interest of "international production multi-localization" strategy to deal with globalization's threats to community stability (downsizing and de-localization), based on MCC activity during 1999-2006.

- Mondragon parent cooperatives with foreign production plants, (GLOBAL COOPS) have a bigger net job growth than Mondragon Local Coops in parent cooperative (28% > 14%), in the local community (52%>25%) and in total (141% >21%) during the period analyzed 1999-2006. (H1 and H2)

- Mondragon Cooperatives' FDI has a direct positive impact on employment growth in the local community (21%>12%) and a similar behaviour in the parent cooperative (7,8% = 7,5%) during the three years after FDI investment. (H3 and H4)

- Mondragon GLOBAL COOPS number of coop members over total workforce internationally has been strongly affected by their international affiliated companies' policy. (H5)

- Mondragon GLOBAL COOPS' number of coop members out of total workforce at Parent cooperatives has not been significantly affected by their international affiliated companies' policy. (H6) Being higher on GLOBALCOOPS (84% >75%)

The previous conclusions are coherent with Place-based ownership models as a better counterforce to Globalization threats to community stability (Inbroscio, Williamson and

Alperovitz 2003). Mondragon Cooperatives not only has maintained but has created new jobs in their local community employment.

FDI does not necessarily result on parent companies jobs destruction, (Barba Navaretti and Castellani 2004). In the case of Mondragon Industrial Cooperatives, even exist a positive relationship and creates new jobs.

Horizontal integration has been the main reason for cooperatives multi-localization abroad in Brazil, Mexico, India or Turkey. China and some specific cases in Eastern Europe respond to Horizontal and Vertical integration at the same time.

We may say that jobs abroad, even in LDC countries, are not especially unskilled ones. The General Manager of the 30% of the production plants in these countries is local, and as an average only one Director from the parent cooperative is working there, so local teams drive the production plants.

We conclude, on the one hand globalization presents important threats to local traditional community stability and cooperatives structure. On the other hand leverages the capacity of wealth creation through employment growth[27] on economic developed countries (20.531 new jobs since 1999) and on the developing ones (12.298 new jobs since 1999).

But Mondragon Cooperative Experience is not just employment growth, since its very beginning was pursuing a "New type" of enterprise, coherent with the Human, Christian and Work community solidarity ideals (Aranzadi 1976). On future papers we study the reality of those 65 production plants abroad and their current challenges to evolve from infancy through adolescence to maturity (Vanek 2007).

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[27] As mentioned previously this contribution is considered by Ormaechea, co-founder of ULGOR, the first cooperative in Mondragon, the most important contribution of cooperatives to society. Additionally according to Karnani 2005 "Fortune at the bottom of the pyramid: a mirage", creating opportunities of steady employment at reasonable wages is the best way to eradicate poverty.

7. FIGURES

GLOBAL COOPS	AFFILIATED COMPANIES	COUNTRY	ACTIVITY
CIKAUTXO	Cikautxo CZ	CZECH R.	Rubber products for automotive and household products
	Cikautxo SK	SLOVAK R.	
	Nova Paranoa	BRAZIL	
FAGOR EDERLAN	Fundicao Brasileiras	BRAZIL	Iron & aluminium products for automotive sector
	Fagor Ederlan - Slovensko	SLOVAK R.	
MAIER	Maier UK	UK	Plastic products for automotive sector
	Maier CZ	CZECH R.	
COPRECI	Copreci Mexico	MEXICO	Household electrical components
	Copreci CZ	CZECH R.	
	Copreci Brasil	BRAZIL	
	Copreci Systems	ITALY	
	Copreci Turkia	TURKEY	
	Copreci China	CHINA	
EIKA	FONDEIK sro	CZECH R.	Components for cookers: electric hot plates, resistances
	CZEika sro	CZECH R.	
	Eika Mexico	MEXICO	
	Eika Polska	POLAND	
FAGOR ELECTRONICA	FAGOR Thailand	THAILAND	Semiconductors
MATZ ERREKA	Erreka Mex	MEXICO	Plastic products for automotive and household products
	Matz-Erreka-Kovoplast	CZECH R.	
ORKLI	Orkli Ningbo	CHINA	Safety components for household gas products
	Orkli Do Brasil	BRAZIL	
TAJO	Treboplast	CZECH R.	Plastic products for automotive and household products
	Tabiplast	POLAND	
EMBEGA	Embega Polska	POLAND	Household electrical components
ELECTRA VITORIA	Quality Lifts Products	UK	Lift manufacture, installation & maintainance
	Sprinte EV	FRANCE	
	Elevadores EV Internacional	MEXICO	
ULMA CONSTRUCCION	Bauma	POLAND	Industrial equipment for construction
	Alpi	ITALY	
	Nantont Huarong	CHINA	
ORBEA	Orbea USA	USA	Bycycles
	Lusorbea Montagem Bicic.	PORTUGAL	
COINALDE	Coinalde Polska	POLAND	Industrial equipment for construction
DIKAR WINGROUP	Shanghai Wingroup	CHINA	Indoor fitness products & sports goods
	Ningbo East	CHINA	
	Armortech Industries	CHINA	
IRIZAR	Irizar Tianjin	CHINA	Luxury coaches
	Irizar Magreb	MOROCO	
	Irizar Brasil	BRAZIL	
	Irizar México	MEXICO	
	Irizar TVS	INDIA	
	Irizar Southern Africa PTY	SOUTHAFRICA	
FAGOR ELECTRODOMESTICOS	Extra Electro Menagers	MOROCO	Household electrical goods: Kitchens, laundries, refrigerators & mini size goods
	Fagor Mastercook	POLAND	
	Fagor Brandt	FRANCE	
	Fagor Brandt Verolanouva	ITALY	
	Fagor Shanghai	CHINA	
FAGOR INDUSTRIAL	Fagor Industrial Mexico	MEXICO	Industrial Cooking goods for hotels and restaurants
	Fagor Industrial Turkey	TURKEY	
	Fagor Industrial Poland	POLAND	
	Danube Internacional	FRANCE	
	Setricefradue	ITALY	
MATRICI-BATZ	MB Lusitana de Matrices	PORTUGAL	Injection-moulded and pressed products
MONDRAGON ASSEMBLY	Mondragon Assembly	FRANCE	MONDRAGON ASSEMBLY
	Mondragon Assembly	GERMANY	
	Gaindu Mondragon Assembly	MEXICO	
FAGOR AUTOMATION	BJ Equipment	CHINA	Electric components for Machine toods
DANOBAT	Danomar	RUMANIA	Machine tools
	Overbeck Gmbh	GERMANY	
	Newall UK	UK	
SORALUCE	Danobat Bimatec	GERMANY	Machine tools
EGURKO	Egurko - Planerko	RUMANIA	Machine tools

*Those ones highlighted in grey are the ones visited and analyzed in the current research

Figure 1: Mondragon 25 GLOBAL COOPS with 65 production plants abroad (2006)

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	GLO_PT_99 - LOC_PT_99	55.88815	43.69599	15.44887	19.35738	92.41891	3.618	7	.009
Pair 2	GLO_PIN_99 - LOC_PIN_99	15.70868	13.49216	4.77020	4.42896	26.98841	3.293	7	.013
Pair 3	GLO_PCOOP_99 - LOC_PCOOP_99	8.44135	9.65319	3.41292	.37108	16.51163	2.473	7	.043

Test Statistics[b]

	LOC_PT_99 - GLO_PT_99	LOC_PIN_99 - GLO_PIN_99	LOC_PCOOP_99 - GLO_PCOOP_99
Z	-2.366[a]	-2.366[a]	-1.859[a]
Asymp. Sig. (2-tailed)	.018	.018	.063

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

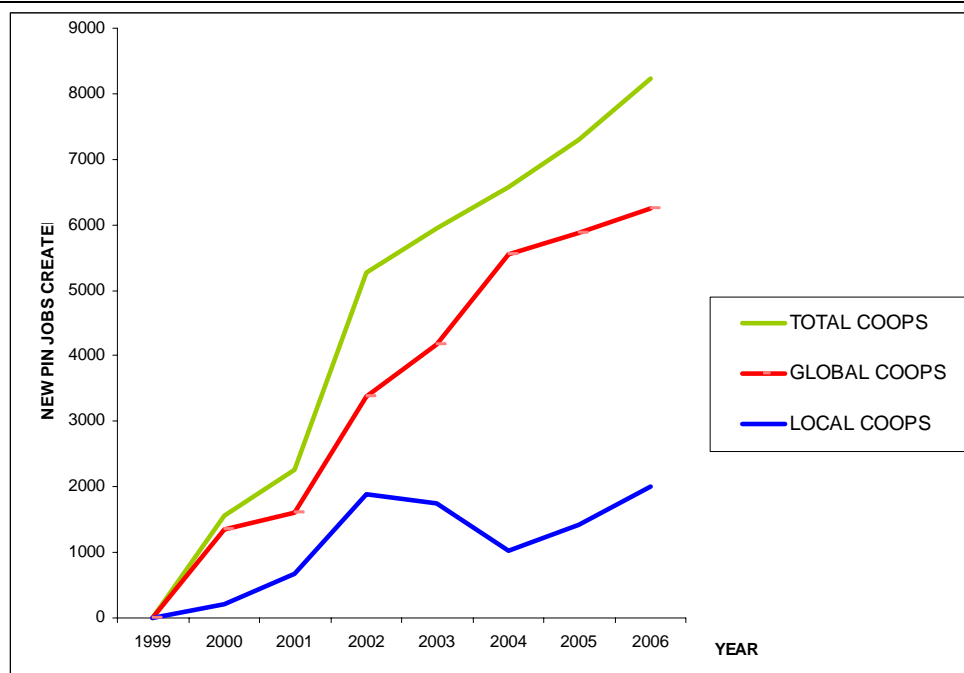**Figure 2a:** Hypotheses H1 and H2 parametric and non parametric tests' results

Figure 2b: MCC Industrial D: Local community net job growth (PIN)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
				Std. Error Mean	95% Confidence Interval of the Difference				
		Mean	Std. Deviation		Lower	Upper			
Pair 1	PCOOP_REAL - PCOOP_HYP	********	.145150876	********	********	********	1.106	11	.292
Pair 2	PIN_REAL - PIN_HYPO	********	.262710899	********	********	********	1.973	11	.074
Pair 3	PT_REAL - PT_HYPO	********	1.067696035	********	********	********	2.386	11	.036

Test Statistics[b]

	PCOOP_HYP - PCOOP_REAL	PIN_HYPO - PIN_REAL	PT_HYPO - PT_REAL
Z	-.941[a]	-1.569[a]	-3.059[a]
Asymp. Sig. (2-tailed)	.347	.117	.002

[a.] Based on positive ranks.

[b.] Wilcoxon Signed Ranks Test

Figure 3a: Hypotheses H3 and H4 parametric and non parametric tests' results (SWI)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
				Std. Error Mean	95% Confidence Interval of the Difference				
		Mean	Std. Deviation		Lower	Upper			
Pair 1	LDID_PCOOP_REAL - LDID_PCOOP_HYP	********	.268683975	********	********	********	.485	11	.638
Pair 2	LDID_PIN_REAL - LDID_PIN_HYPO	********	.545302292	********	********	********	-.440	11	.668
Pair 3	LDID_PT_REAL - LDID_PT_HYPO	********	1.364833094	********	********	********	1.447	11	.176

Test Statistics

	LDID_PCOOP_HYP - LDID_PCOOP_REAL	LDID_PIN_HYPO - LDID_PIN_REAL	LDID_PT_HYPO - LDID_PT_REAL
Z	-.863[a]	-.078[b]	-1.255[a]
Asymp. Sig. (2-tailed)	.388	.937	.209

[a.] Based on positive ranks.

[b.] Based on negative ranks.

[c.] Wilcoxon Signed Ranks Test

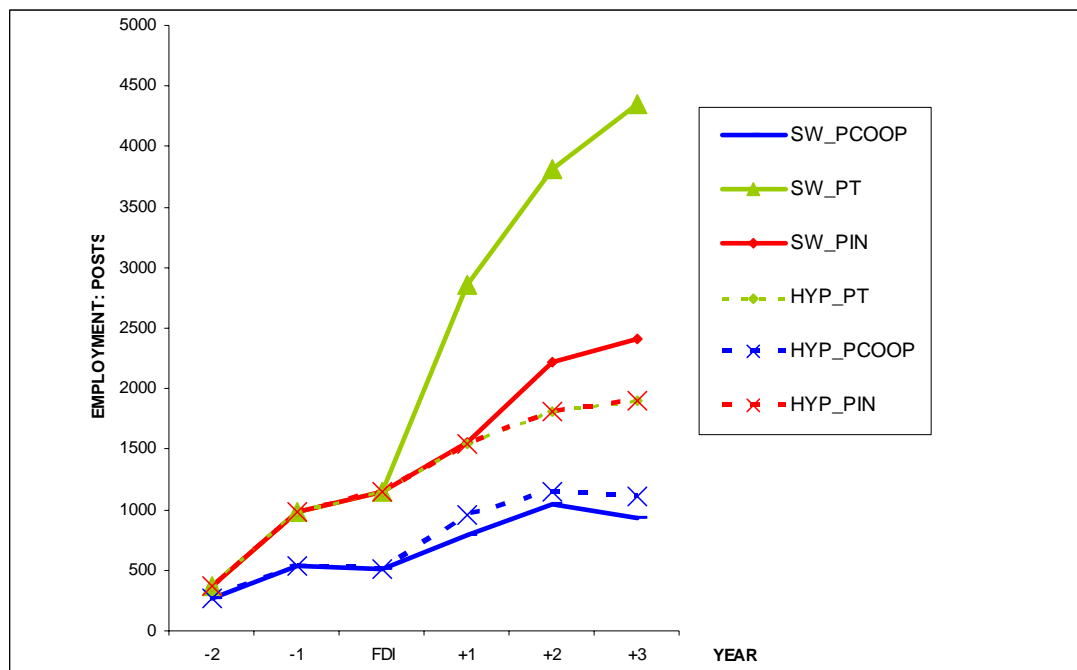**Figure 3b:** Hypotheses H3 and H4 parametric and non parametric tests' results (LDID)

Figure 3c: Merged SW_GLOBALCOOPS vs. HIPOTHETIC employment growth

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	GLO_MEMdPT - LOC_MEMdPT	.01621	.18573	.05151	-.09602	.12844	.315	12	.758
Pair 2	GLO_MEMdPT_99 - LOC_MEMdPT_99	-35.41070	25.19558	8.90798	-56.47474	-14.34667	-3.975	7	.005
Pair 3	GLO_MEMdPCOOP - LOC_MEMdPCOOP	.16988	.07882	.02186	.12225	.21751	7.771	12	.000
Pair 4	GLO_MEMdPCOOP_99 - LOC_MEMdPCOOP_99	-10.33647	13.78566	4.87397	-21.86157	1.18863	-2.121	7	.072

Test Statistics[c]

	LOC_MEMdPT - GLO_MEMdPT	LOC_MEMdPT_99 - GLO_MEMdPT_99	LOC_MEMdPCOOP - GLO_MEMdPCOOP	LOC_MEMdPCOOP_99 - GLO_MEMdPCOOP_99
Z	-.384[a]	-2.366[b]	-3.180[a]	-1.690[b]
Asymp. Sig. (2-tailed)	.701	.018	.001	.091

[a]. Based on positive ranks.

[b]. Based on negative ranks.

[c]. Wilcoxon Signed Ranks Test

Figure 4: Hypotheses H4 and H5 parametric and non parametric tests' results

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