



**Complexity Research Initiative for Systemic Instabilities  
FP7-ICT-2011-7-288501-CRISIS**

**THIRD PERIODIC REPORT  
MANAGEMENT**

**Grant Agreement number:** FP7-ICT-2011-7-288501-CRISIS

**Project acronym:** **CRISIS**

**Project title:** Complexity Research Initiative for Systemic Instabilities

**Funding Scheme:** Collaborative project  
Small or medium-scale focused research

**Project Date of latest version of Annex I against which the assessment will be made:** December 2012

**Periodic report:** 1<sup>st</sup> ☐ 2<sup>nd</sup> ☐ 3<sup>rd</sup> ☒ 4<sup>th</sup> ☐

**Period covered:** from: 01/11/2013 to: 31/10/2014

**Name, title and organisation of the scientific representative of the project's coordinator:**

Name: Domenico Delli Gatti  
 Tel. +39-02-72342499  
 Fax +39-02-72342918  
 E-mail: [domenico.delligatti@unicatt.it](mailto:domenico.delligatti@unicatt.it)  
 Project website address: [www.crisis-economics.eu](http://www.crisis-economics.eu)

## Table of Content

<b>3.2.3</b>	<b><i>Project management during the period</i></b>	<b>3</b>
a.	Consortium Management	3
b.	Problems which have occurred and how they were solved;	4
c.	Changes in the consortium, if any;	4
d.	List of project meetings, dates and venues;	4
e.	Project planning and status	5
f.	Development of the Project website, if applicable;	5
g.	Use of foreground and dissemination activities during this period (if applicable).	6
-	<i>CRISIS Workshops and other events</i>	6
-	<i>Participation in Workshops and International Conferences</i>	10
-	<i>Publications</i>	13
<b>3.3</b>	<b><i>Deliverables and milestones tables</i></b>	<b>17</b>
<b>3.4</b>	<b><i>Explanation of the use of the resources</i></b>	<b>19</b>
	Partner No. 1 – UCSC	19
	Partner No. 3 – UvA	21
	Partner No. 4 – CREI	23
	Partner No. 5 – MUW	24
	Partner No. 6 – CITY	26
	Partner No. 8 – AITIA	28
	Partner No. 9 – UNIPA	30
	Partner No. 10 – CEA	32
	Partner No. 11 – UNIVPM	34
	Partner No. 12 – SNS	36
	Partner No. 13 – UOXF	38

### 3.2.3 Project management during the period

The present document represents the full annual report on the third year of implementation of the CRISIS project including financial aspects and dissemination activities. It covers the period from 01.11.2013 to 31.10.2014.

#### a. Consortium Management

The management of the CRISIS project during the third year of implementation proceeded smoothly. There were no particular problems and no changes to the consortium partners.

As this was the final year of the CRISIS project, communication between all the units was enhanced, both through conference calls and meetings. The Steering Committee held regular conference calls aimed at assessing progress, discussing and resolving research problems. Following each call, the coordinator sent a summary of what was discussed to all the partners so as to keep everybody up to date. The so-called "integration group" - composed of all the members working on the integration of the macro and financial models and the development of the relevant software – stepped up its communication efforts and held conference calls on a weekly basis. Moreover, each participant was invited to circulate a weekly progress report; these reports were often followed by lively email exchanges involving the majority of group members.

#### Monitoring of the project's implementation

UCSC (Domenico Delli Gatti) and UOXF (Doyne Farmer) are in charge of monitoring the implementation of the project and ascertaining that the partners carry out their assigned tasks – e.g. progress achieved in the various activities, sharing of the results, organisation of project meetings, production of the deliverables, dissemination.

#### Meetings

Several meetings between the partners were held during the reporting period (Oxford, Amsterdam, Ancona among others). A CRISIS workshop was organized in Oxford on 17-18 March 2014 which was attended by all the CRISIS partners. The Final CRISIS Workshop, marking the end of the project, was organized in Milan on 8-9 October 2014.

#### Management activities carried out by each partner:

##### 1. UCSC and UOXF

##### **As coordinator and scientific coordinator:**

- Overall project management, co-ordination of the research work according to the pre-defined activities and timetable, supervision of the quantity and quality of the overall project output;
- Link with WP Leaders;
- Communication with the European Commission;
- Link with Advisory Board members;
- Organisation of conference calls and meetings among partners. In particular: definition of the meetings' agenda, coordination of the team, taking of meetings' minutes and logistic support;
- Administration of the project, including reporting to European Commission (Financial management of the project: distribution of budget, preparation of cost report and progress report, admin training to partners not familiar with FP7 projects; consultancy on admin aspects); project web-site, logo, and templates for deliverables;
- Quality check and submission of deliverables;
- Facilitating organizational aspects.

Moreover, the coordinator continued – when necessary - to provide assistance to the other partners in accessing FP7 tools (participant portal and NEF) and ensured that they abided by the financial and administrative rules of FP7 projects. The coordinator also monitored the submission of deliverables and all other reports within the set deadlines and informed the project officer in case

of delays. The project partners collaborated closely with the coordinators to carry out and organize the various activities.

Apart from the coordinators, other partners have also been carrying out the following management tasks:

- Hiring of new researchers, especially young researchers familiar with ABM, network theory, and complex systems;
- Using their allocated resources according to Consortium plan and in agreement with each partner's administration;
- Carrying out dissemination activities (included in the dissemination plan);
- Submitting required deliverables and reports;
- Submitting the requested costs statements;
- Providing the coordinator with information and explanations of any deviations.

**b. Problems which have occurred and how they were solved;**

No particular problems occurred during the third year of the project's implementation.

**c. Changes in the consortium, if any;**

No changes in the consortium occurred.

**d. List of project meetings, dates and venues;**

**Oxford (UK), 12-14 November 2013**, Integration group meeting, to discuss progress and work on the integration of the macro and financial AB model, particularly in view of the technical review. Participants: UOXF, UCSC, UNIVPM.

**Brussels (BE), 25-27 November 2013**, III<sup>o</sup> Technical Review: evaluation of the second year of the CRISIS project's implementation and progress. Participants: CRISIS Steering Committee.

**Oxford (UK), 8-12 December 2013**, Integration group meeting aimed at taking on board and working on the recommendations that emerged from the technical review. Participants: UOXF, Jakob Grazzini (UCSC), G. Gurtner (SNS), L. Gulyas (AITIA).

**Amsterdam (NL), 25 January - 7 February 2014**, work with UvA unit on laboratory experiments. Tiziana Assenza, Jakob Grazzini (UCSC).

**Frankfurt (DE), 22 Feb - 2 March 2014**, Project collaboration visit to Bundesbank (UOXF).

**Amsterdam (NL), 4-5 February 2014**, work with UvA on the JECD special issue, Domenico Delli Gatti (UCSC)

**Oxford, 22-28 February 2014** Software integration and scientific discussion, Stanislao Gualdi (CEA)

**Amsterdam, 23-29 March 2014 & 18-24 May 2014**, Pilot Trading experiments at UvA, collaboration with C. Hommes and D. Massaro, Joao Da Gama Batista (CEA)

**Steering Committee meetings**

Meetings of the Steering Committee were held on the following dates:

- November 26<sup>th</sup> 2013 (Brussels)
- March 18<sup>th</sup> 2014 (Oxford);
- October 9<sup>th</sup> 2014 (Milan)

## Conference calls

Since the beginning of the CRISIS project, the members of the Steering Committee have regularly organized conference calls, roughly every three weeks, to discuss the progress of the various activities. These calls are normally attended by a majority of steering committee members or their representatives and have proved an excellent way of keeping in touch and exchanging ideas and information.

### e. Project planning and status

The work carried out in the third year in all Work Packages is in line with the Description of Work.

## ACTUAL COSTS AND PERSON MONTHS

The work carried out in the second year in all Work Packages is in line with the Description of Work. The table below includes the actual costs incurred in the first five months from 1.11.2013 to 31.10.2013 and some minor adjustments

### BUDGET vs. Actual Costs

CRISIS TOTAL		A			B		C	D			
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)								Pct. Spent	Remaining budget (Eur)
		Period 1	ADJUSTMENT TO PERIOD 1	ADJUSTMENT PERIOD	Period 2	ADJUSTMENT TO PERIOD 2	Period 3	ADJUSTMENT PERIOD 3	TOTAL		
Person Months	642,30	156,26	0,00	0,43	225,86	-0,02	273,25	0,00	655,78		
Personnel costs	2.477.615,00	700.996,00	0,00	-285,00	928.631,00	-725,00	1.004.915,00	0,00	2.633.532,00	106,3%	-155.917,00
Travel costs	229.822,00	86.948,00	7.622,00	-11.634,00	96.162,00	-6.844,00	97.522,00	391,00	270.167,00	117,6%	-40.345,00
Equipment costs	14.000,00	567,00	0,00	-176,00	2.641,00	-461,00	2.938,00	0,00	5.509,00	39,4%	8.491,00
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0%	0,00
Other costs	82.492,00	5.956,00	0,00	0,00	16.519,00	-287,00	44.633,00	0,00	66.821,00	81,0%	15.671,00
Audit costs	20.700,00	0,00	0,00	0,00	0,00	0,00	6.221,00	0,00	6.221,00	30,1%	14.479,00
Subcontracting costs	64.949,00	7.002,00	0,00	0,00	16.507,00	0,00	16.388,00	0,00	39.897,00	61,4%	25.052,00
Indirect costs	1.665.458,80	479.140,00	1.448,00	5.287,00	599.659,00	-7.724,00	659.891,00	234,00	1.737.935,00	104,4%	-72.476,20
TOTAL COSTS	4.555.036,80	1.280.609,00	9.070,00	-6.808,00	1.660.119,00	-16.041,00	1.832.508,00	625,00	4.760.082,00	104,5%	-205.045,20
EU CONTRIBUTION	3.316.000,00	970.997,00	6.981,00	-5.106,00	1.244.078,00	-12.031,00	1.268.307,00	625,00	3.474.851,00	104,8%	-158.851,00
TOTALS FOR THE PERIOD:		TOTAL COSTS (A+B+C+D)						1.810.284,00			
		TOTAL REQUESTED EU CONTRIBUTION (A+B+C+D)						1.252.795,00			

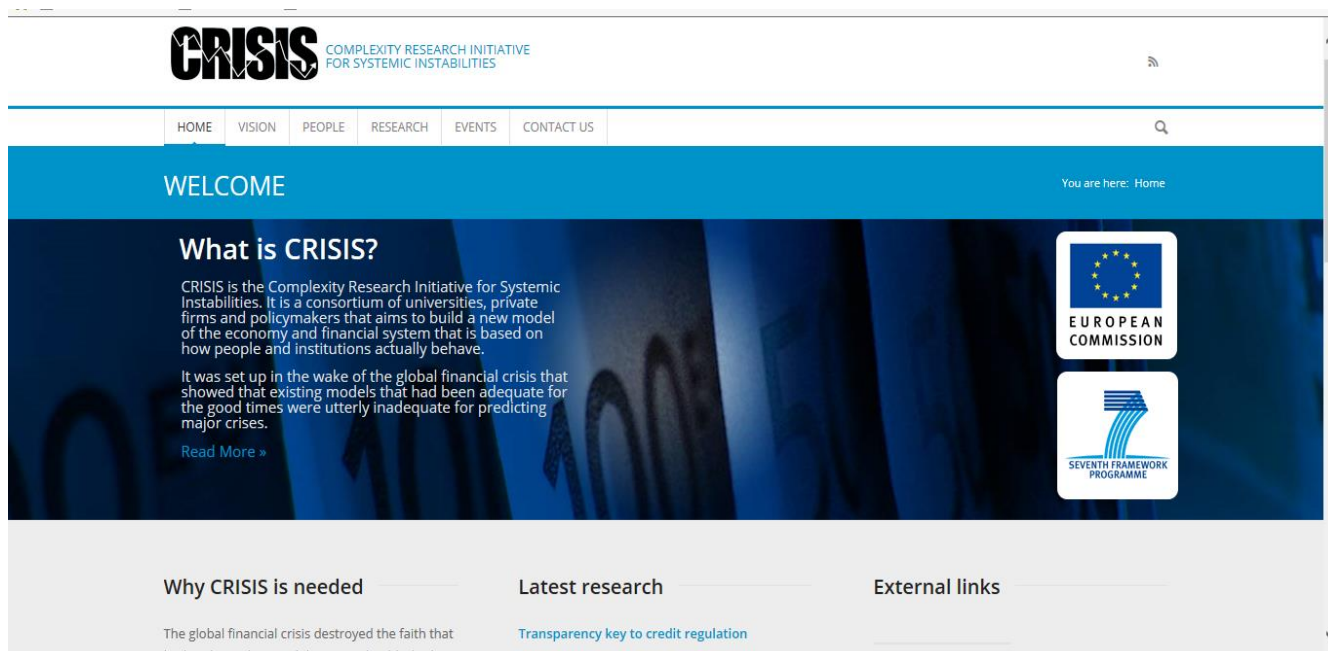
Comparison between actual person months allocated in the first period and the total planned person months - Planned PMs (total) vs Actual PMs (total)

	Planned PMs (*)	41,70	152,50	109,00	48,00	62,75	66,25	48,00	101,10	5,00	8,00	642,30
<b>TOTAL</b>	Actual PMs - First report	7,02	52,10	31,16	8,52	19,77	12,20	8,03	12,46	2,22	2,78	156,26
	Adjustment to first report	0,00	0,21	0,22	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,43
	Actual PMs - Second report	13,15	56,44	46,98	17,26	15,50	26,21	27,32	17,45	1,56	3,99	225,86
	Adjustment to second report	0,00	-0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	-0,02
	Actual PMs - Third report	10,32	77,46	30,74	14,98	20,66	26,65	19,35	65,77	3,03	4,29	273,25
	<b>Actual PMs - TOTAL</b>	<b>30,49</b>	<b>186,19</b>	<b>109,10</b>	<b>40,76</b>	<b>55,93</b>	<b>65,06</b>	<b>54,70</b>	<b>95,68</b>	<b>6,81</b>	<b>11,06</b>	<b>655,78</b>

## DISSEMINATION

### f. Development of the Project website, if applicable;

The CRISIS website (<http://www.crisis-economics.eu/home>), was updated regularly during the third year of the project. It lists all the CRISIS-related events and contains all the deliverables that have been submitted as well as all the research output produced by the partners.



The on-line game is already on the website, but for the time being it can be accessed only by CRISIS partners. There are three different versions of the model available, and each has two different configurations. The configurations differ only in the number of players (all other parameters are set by default). The three game models are: Bank Strategy Fun, Bank Strategy and Bankruptcy Model.

**g. *Use of foreground and dissemination activities during this period (if applicable).***

During the last year of the CRISIS project there were a series of contacts and lively exchanges of information between the partners and potential users of the project's end product, i.e. the integrated macroeconomic and financial AB model. A meeting was held on the premises of the bank of England in July 2014 in order to present the progress on the model on one hand, and to receive feedback and suggestions for its improvement on the other.

**On-going and projected dissemination activities**

Two workshops were organized, the first in Oxford, UK, on 17-18 March 2014 and the second and final in Milan, on 8-9 October 2014 (see below).

Further activities aimed at providing information on the CRISIS project include:

- ongoing collaboration with the Bank of England, involving members of the AB and the SWG;
- one-to-one meetings with policymakers
- CRISIS partners' participation in conferences/seminars/meetings (see below);
- CRISIS partners' presentations/articles/publications (see below).

**CRISIS Workshops and other events**

**Fifth CRISIS Workshop, INET at the Oxford Martin School, 17-18 March 2014 (organized by UOXF)**

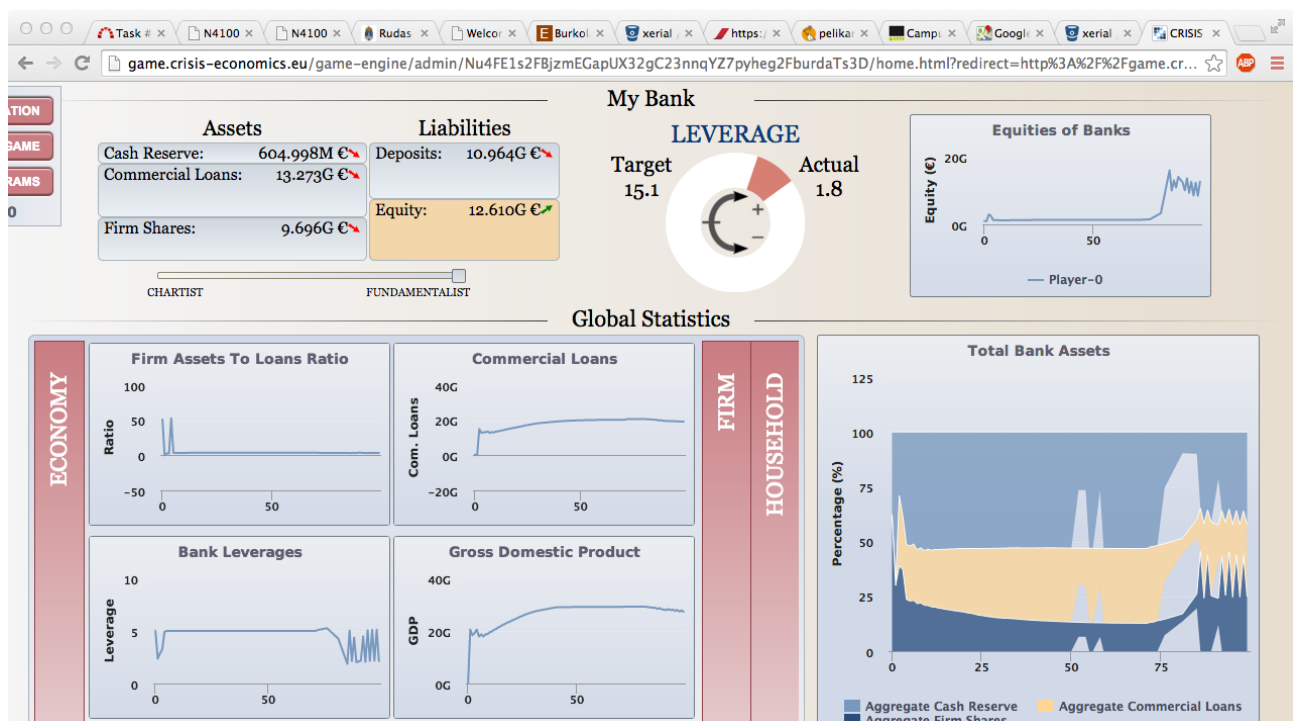
The Workshop was attended by representatives of all the partners. Although the various working groups have been collaborating very closely it was a chance for all the units to get together and discuss the state of the art of the CRISIS project, particularly in view of its conclusion in the Fall of



2014. The Workshop focused mainly on the integration of the macro and financial AB models, also touching upon issues such as the interbank model, calibration, default models, plans for implementing a shadow banking system, the simulator and online game as well as the experiments carried out by the UvA unit. The final part of the Workshop was devoted to a general discussion aimed at determining the best strategies for meeting the goals set out by the project.

**Organization of webinar with Stakeholder Working Group members. Milestone M.16** was replaced by a tutorial which was held on October 7<sup>th</sup>, 2014 on the premises of UCSC. It was attended by about 40 researchers and students.

The tutorial began with a brief introduction to the CRISIS project given by J.D. Farmer (UOXF) which was followed by a series of presentations, mostly by members of the “integration group”. The first presentation was by L. Gulyas and T. Mahr (AITIA) who gave an overview of the software and its capabilities focusing on the flowchart of the integrated software architecture. Next came a presentation of the state of the art of the macro model: input-output network, credit market, price-setting heuristics by J. Grazzini (UCSC) followed by a presentation on the Financial model, i.e. banks and funds, by C. Aymanns and M. Lovric (UOXF) who examined new behavioral investment strategies based on returns for loans and stocks. G. Gurtner (CEA) then gave a talk on the definition and implementation of the shadow banking system in the integrated model, followed by an outline of the integration strategy and the presentation of a stand-alone housing market model that replicates empirical data by Dan Tang (UOXF). The morning session ended with a presentation of the new model for interbank loans by Victor Spirin (UOXF). After the lunch break, the AITIA team invited the audience to participate in a demo version of the online game which aroused a lot of interest.



This was followed by a demonstration of the use of the dashboard by P. Richardson (UOXF). The tutorial ended with a wrap-up session where future directions were discussed and assessed.

### CRISIS Final Workshop – A Complexity View of Crisis, Milan 7-9 October 2014 (organized by UCSC)

The CRISIS project has created a comprehensive agent based model of the economy in which households, firms, banks and other financial intermediaries interact in the markets for labour,

goods, credit and financial assets. Within this framework, the CRISIS consortium has performed research on financial stability, macro-prudential and monetary policy. The first day was devoted to a tutorial on the software library. The rest of the workshop dealt with the results of the research activity and with future research plans.

### **CRISIS Advisory Board Meeting, Bank of England, London, 15 October 2014 (Milestone M.17)**

As a part of its Dissemination activities (WP 9) Project CRISIS formed an Advisory Board of senior current and former financial system policymakers and financial system practitioners. The purpose of the Advisory Board is to provide guidance in order to help ensure that the project's outputs are of practical relevance to policymakers and regulators, to provide a constructive critique of the project, and to assist the project with dissemination in the policymaking community.

In addition to the senior level members of the Advisory Board, the CRISIS team developed very useful contacts with policy, regulatory, and technical experts in key policymaking institutions including the Bank of England, NY Federal Reserve, ECB, EC, European Banking Authority, IMF, OECD, and a number of national central banks.

On 14-15 October 2014 CRISIS convened a meeting of its Advisory Board and policy experts to present and discuss outputs from the project. The meeting was hosted by Andy Haldane, Chief Economist of the Bank of England and held at the Bank of England's offices.

The meeting began with a dinner on 14 October where Haldane and Eric Beinhocker of INET Oxford led a discussion on the key challenges faced by central bank and other financial policymakers. The group assessed progress since the 2008 crisis and identified key areas of current risk including the housing market in certain countries, the ongoing Euro crisis, the potential for currency and other imbalances in emerging markets, newer threats to financial stability such as cyber attacks, and continued geopolitical risks. The group discussed the development of new macroprudential policy tools to mitigate and manage systemic risks and the challenges in assessing their effectiveness given their relative newness of these tools to most central banks.

The group re-convened the next day 15 October from 9:00am-3:00pm for a series of presentations and discussions led by the CRISIS team

Andy Haldane of the Bank of England opened the meeting and provided an overview of the Bank's perspective on and its growing experience with macro-prudential policy. He noted that innovation was needed in the analytical and modelling tools required to support this work and expressed his enthusiasm for the agent-based modelling (ABM) methodology of the CRISIS project. While no one methodology would likely have all of the answers, Haldane noted that ABM was promising as a way to provide a more realistic and dynamic perspective on key policy challenges.

Beinhocker of INET Oxford then provided an introduction and overview of the CRISIS project and led a general discussion and Q&A about the methodology and the project. He was followed by Doyne Farmer, also of INET Oxford, who gave a lengthy and detailed presentation of the CRISIS model. He then provided some initial results on the housing market, on the dynamics of the leverage cycle, impact-adjusted accounting and some analysis of Basel II/III regulations. The presentation generated significant discussion, particularly around the leverage cycle and Basel II/III work.

Stefan Thurner of the University of Vienna next presented results on the idea of a systemic risk tax using the DebtRank measure of systemic risk and contrasted the potential impact of the systemic risk tax versus a more conventional Tobin tax. The idea of a systemic risk tax and the results generated significant interest and discussion. While the group noted important practical limitations and considerations regarding a systemic risk tax they felt the idea was novel and merited further exploration, in particular whether there might be a simpler more easily implemented proxy for the more complex DebtRank measure that could provide similar risk mitigation effects. Thurner also



presented results using the CRISIS model to analyze bail-out vs. bail-in vs. assumption/liquidation banking resolution measures

Jean Phillipe-Bouchaud of CEA then presented his group's work on analyzing the dynamics and phase space of systemic risk using the CRISIS model, and keying off of a recent speech by IMF Chief Economist Olivier Blanchard, looking for the 'dark corners' of risk in the system. His analysis showed that phase transitions can lead to abrupt shifts from stable to unstable regimes, and that policymakers are often unaware when they are on the edge of such transitions. He provided an example of business cycles and employment and showed how policymaker over-reactions can sometimes make things worse. The key questions the group had during the day was how agent decision making was represented in the model. While the group agreed that the Rational Expectations (RE) theory used in standard policymaker Dynamic Stochastic General Equilibrium (DSGE) models is clearly flawed, it has the advantage of logical consistency and producing closed form solutions. Hommes showed how by using laboratory experiments, he and his colleagues have not only been able to show how real human behavior deviates from RE, but they have been able to identify the heuristics that people actually use to make forward looking economic decisions.

The meeting then concluded with a 30 minute general discussion where each Advisory Board member and policy expert provided their feedback on the work and suggestions for future directions. There was a general consensus that the project had met its objective of providing a 'proof of concept' for policymakers. There was overall enthusiasm for the ABM methodology and agreement that the project had generated some highly interesting and non-obvious insights. The group could also clearly see the potential for the CRISIS model and related work to evolve into a set of tools that could be of use to policymakers in policy development and analysis. The group also noted that the CRISIS approach had some important advantages over more traditional methodologies, notably in its greater institutional realism, ability to handle complex dynamics and networks, and ability to incorporate behavior

### **Advisory Board Meeting, 15 October 2014, London**

#### **Participants**

John Barrdear, Bank of England; Paul Burnett, HSBC; Oliver Burrows, Bank of England; Valerie de Bruyckere, European Banking Authority; Andrea Enria, European Banking Authority; Jeremy Franklin, Bank of England; Benjamin Friedrich, European Banking Authority; Brenda Gonzalez-Hermosillo, IMF; Andy Haldane, Bank of England; Lex Hoogduin, University of Groningen; Paul Jenkins, Center for International Governance Innovation; Anatole Kaletsky, Gavekal Dragonomics; Sujit Kapadia, Bank of England; Svein Harald Øygard, McKinsey & Company; Amar Radia, Bank of England; George Soros, Soros Fund Management; Harald Stieber, European Commission; Kevin Stiroh, New York Federal Reserve; William White, OECD; Michael Wilens, Fidelity.

#### **Project CRISIS Team**

Eric Beinhocker, INET Oxford; Jean-Philippe Bouchaud, CEA; Mark Buchanan, Bloomberg; Domenico Delli Gatti, Catholic University Milan; J. Doyne Farmer, INET Oxford; László Gulyás, AITIA; Cars Hommes, University of Amsterdam; Giulia Iori, City University; Stefan Thurner, University of Vienna

### **Project CRISIS Advisory Board Meeting**

#### **Agenda**

<b>Time</b>	<b>Presenter</b>	<b>Title</b>
8:30 – 9:00	<i>Arrival, registration, coffee</i>	
9:00-9:15	Andy Haldane, Chief Economist, Bank of England	The Need for New Approaches

9:15-10:00 <i>30 min. presentation 15 min. discussion</i>	Eric Beinhocker, Executive Director, INET Oxford	Introduction to Project CRISIS
10:00-10:15	<i>Coffee break</i>	
10:15-11:30 <i>50 min. presentation 25 min. discussion</i>	Prof. J. Doyne Farmer, INET Oxford	The CRISIS Model – Finance, Macro and Leverage Cycles
11:30-12:15 <i>30 min. presentation 15 min. discussion</i>	Prof. Stefan Thurner, Univ. Vienna	Systemic Risk and Resolution schemes
12:15-1:00	<i>Lunch break</i>	
1:00-1:45 <i>30 min. presentation 15 min. discussion</i>	Prof. J-P Bouchaud, CEA	Dark Corners and Phase Transitions
1:45-2:30 <i>30 min. presentation 15 min. discussion</i>	Prof. Cars Hommes Univ. Amsterdam	Behaviour: from Micro to Macro
2:30-3:00 <i>30 min. discussion</i>	Eric Beinhocker, Executive Director, INET Oxford	Feedback and Future Directions
3:00	<i>Close and departures</i>	

Moreover, during the last months of 2014 some members of CRISIS project were invited in other meetings organized by DGMARKT and ECB:

#### **Brussels (Belgium), 19 November 2013, DGMARKT meeting**

Domenico Delli Gatti, Doyne Farmer and Stefan Thurner have discussed the CRISIS general framework and some policy implications in a meeting in Brussels (November 2014) with Harald Stieber, of DG MARKT.

#### **Frankfurt am Main (DE), 11 December 2013, ECB meeting**

Doyne Farmer has presented the CRISIS general framework and some results at the ECB in a recent talk in Frankfurt (December 2014). He has been invited by Philip Hartmann, the acting head of research for the ECB, who is a member of the Stakeholder Working Group of CRISIS.

### **Participation in Workshops and International Conferences**

The members of the CRISIS Consortium participated in workshops and international conferences both within and outside Europe. This gave them ample opportunity to disseminate information regarding the progress and findings of CRISIS and to interact with colleagues and interested parties involved in similar research.

#### **Vilnius (Lithuania), 5-9 November 2013, ICT 2013: Create, Connect, Grow.**

The conference featured top ICT professionals from industry, academia, research. Speakers from across the ICT sector addressed a range of issues from cloud computing, broadband, ICT infrastructures, ICT skills, cyber security, long term visions on the future and much more. Experts presented details on how to participate in the EU Research Programme - Horizon 2020.

**Participant:** Tamàs Mahr (AITIA)

**Bordeaux (FR), 7-8 November 2013, First Bordeaux Workshop on Agent-based Macroeconomics**

Agent-based models have become an important framework for analyzing complex macroeconomic dynamics resulting from the interaction of heterogeneous agents with bounded rationality. A strong flow of models have been proposed during the recent years and this workshop aimed at drawing an account of the main contributions of these developments, as well to discuss the perspectives for future research. The workshop will included three thematic sessions, and a closing round table.

**Participants:** Domenico Delli Gatti, Tiziana Assenza, Jakob Grazzini (UCSC), Mauro Gallegati (UNIVPM) Cars Hommes (UvA).

**Munich (DE), 21-22 February 2014, CESifo Area Conference on Macro, Money and International Finance 2014.**

The purpose of this event was to bring together CESifo network members who are working in the areas of macroeconomics and money to present and discuss their ongoing research, and to stimulate interaction and co-operation between them.

**Participants:** Domenico Delli Gatti, Tiziana Assenza, (UCSC); Paper on *“Durability and Emergent Dynamic Behavior of a Macroeconomic Agent Based Model”*

**ESRC Conference 2014: Diversity in macroeconomics: new perspectives from agent-based computational, complexity and behavioural economics**, 24 February 2014, Essex, UK

The February 2014 conference was co-hosted with the Economic and Social Research Council and organised by the Department of Economics. The conference critically examined established thinking and brought together a range of new perspectives on identifying future directions for macroeconomics and policy. Developments from at least three new branches of economics, agent-based computational, complexity and behavioural economics, arising from highly interdisciplinary studies of computational and digital technologies, complexity sciences and neuro-physiology of the brain, were also addressed.

**Participant:** Eric Beinhocker (UOXF)

**Colchester (UK), 24-25 February 2014, ESRC Conference on “Diversity in macroeconomics: new perspectives from agent-based computational, complexity and behavioural economics”, University of Essex.**

The conference critically examined established thinking and brought together a range of new perspectives on identifying future directions for macroeconomics and policy. It addressed developments from at least three new branches of economics: agent-based computational, complexity and behavioural economics - arising from highly interdisciplinary studies of computational and digital technologies, complexity sciences and neuro-physiology of the brain.

**Invited participant:** Giulia Iori (CITY)

**London (UK), 28 February 2014, Research Seminar at the London School of Economics Systemic Risk Center.** The PSPE Research Seminar provides a venue for researchers (mostly from outside of the LSE) to present their work.

**Invited participant:** Giulia Iori (CITY) presented a paper on "Network Analysis of Interbank Lending".

**London (UK), 13 March 2014, Seminar at King's College.**

**Invited participant:** Giulia Iori (CITY) presented a paper on "Impact of reduced market transparency on market quality"

**Les Houches (FR), 7-18 April 2014, Complex Networks Thematic School** (<http://leshouches2014.weebly.com/index.html>).

The school aims at giving a solid fundamental background to Master and PhD students and young researchers working **with or on complex networks**, by introducing the **main concepts and tools** that are useful in this field. The school introduces the **concepts and tools of graph theory**,

**statistical physics, statistical analysis, modeling, and visualization used in the field of complex networks**

**Participant:** Joao Da Gama Batista (CEA)

**Institute for New Economic Thinking (INET) Annual Plenary Conference**, 10-12 April 2014, Toronto, Canada

The conference, titled “**Human After All: Innovation, Disruption, Society**,” focused on innovation and its impact on economics and society. Speakers included Larry Summers, Koichi Hamada, Adair Lord Turner, Andy Haldane, Jim Balsillie, John Ralston Saul, and Michael Sandel, as well as Nobel Laureates James Heckman, and Joseph Stiglitz.

**Participant:** Eric Beinhocker (INET/UOXF)

**Castillon (Spain), 17 April 2014**, Giulia Iori (CITY) presented a paper on “Impact of reduced market transparency on market quality”

**New York (USA), 13-18 April 2014, N.Y., Conference “Nonlinear Time Series I”** (Special session in honor of James B. Ramsey), Baruch College CUNY, N.Y.

**Participant:** Ermanno Catullo (UNIVPM).

**OECD Workshop, New Tools for Policymaking**, 19 May 2014, Paris, France.

The **Workshop on New Tools and Methods for Policy-making** was co-organised by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the Organisation for Economic Cooperation and Development (OECD). The workshop took place at the OECD headquarters in Paris. Leading economists presented their views on these advances in the four following fields: complexity and network theory; agent-based modelling; behavioral and experimental economics; and big data.

**Participant:** Eric Beinhocker (INET/UOXF)

**Shanghai (China), May 31 - June 2 2014, International Conference on Econophysics and Asia-Pacific Econophysics Conference** (<http://rce.ecust.edu.cn/index.php/ice2014>).

**Participant:** Rosario N. Mantegna (UNIPA), Invited lecturer, presented a paper on “*Bank-firm credit network in Japan: An analysis of a bipartite network*”.

**Dead Sea (Jordan), 6-10 June 2014, 17<sup>th</sup> International Economic Association World Congress**, aimed at promoting the interaction of prominent economists with a view to gaining a truly world perspective on issues of global importance.

**Participants:** Domenico Massaro (UvA), presented a paper on “*Behavioural Heterogeneity in US Inflation Dynamics*”, Tiziana Assenza, Jakob Grazzini (UCSC).

**Oslo (Norway), June 22-24, 20<sup>th</sup> CEF International Conference on Computing in Economics and Finance**, covering the fields of macroeconomics, finance, econometrics, agent based modeling and computational methods.

**Participants:** Domenico Massaro (UvA), presented a paper on “*Inflation Targeting, Recursive Inattentiveness and Heterogeneous Beliefs*”; Giulia Iori (CITY), presented a paper on “*Impact of reduced market transparency on market quality*” ; Tiziana Assenza, Jakob Grazzini, Alessandro Spelta (UCSC).

**Cambridge (UK), 26-29 August 2014, Newton Institute, Workshop on Systemic Risk: Models and Mechanisms.**

**Invited participant:** Giulia Iori (CITY)

**London (UK), 8-10 September 2014, London School of Economics Systemic Risk Center, ECO\*2 Workshop**

**Invited participant:** Giulia Iori (CITY) presented a paper on “Financial regulations and bank credit to the real economy”.

**Lucca (IT), 22-24 September 2014, European Conference on Complex Systems ECCS' 14**

Major international conference and event in the area of complex systems and interdisciplinary science in general. It offers unique opportunities to study novel scientific approaches in a multitude of application areas. The conference covers a broad range of subjects on all aspects of Complex Systems

**Invited participants:** Giulia Iori (CITY) presented a paper on "Financial regulations and bank credit to the real economy"; Cars H. Hommes (UvA) presented a paper on "*Expectations Feedback and Adaptive Learning in Complex Economic Systems*".

**Cambridge (UK), 22-26 September 2014, Newton Institute, Workshop on Systemic Risk: Data, Models and Metrics**

**Invited participant:** Giulia Iori (CITY)

**Barcelona (Spain), 31 August - 05 September 2014, Social Simulation Conference 2014.** SSC (former ESSA) conferences constitute annual events which serve as an international platform for the exchange of ideas and discussion of cutting edge research in the field of social simulations, both from the theoretical as well as applied perspective.

**Participant:** Laszlo Gulyas (AITIA) presented the PET2 software developed for the CRISIS online game.

**Brest (France), 29-31 October 2014, Decision Deck workshop.**

The Decision Deck project aims at collaboratively developing Open Source software tools implementing Multiple Criteria Decision Aid (MCDA). From a practical point of view, the Decision Deck project works on developing multiple software resources that are able to interact.

**Participant:** Tamàs Mahr (AITIA) presented the PET2 software developed for the CRISIS online game.

**Brussels (Belgium), 19 November 2014, GSS cluster meeting**

CRISIS project was presented at the GSS conference held by DGCONNECT.

**Participants:** Doyne Farmer, Domenico Delli Gatti, Stefan Thurner.

## Publications

### Articles in Journals

1. Aymanns C. and J. D. Farmer, The dynamics of the leverage cycle, *Journal of Economic dynamics and Control* (January 2015).
2. Bargigli, Leonardo and di Iasio, Giovanni and Infante, Luigi and Lillo, Fabrizio and Pierobon, Federico (2013), The Multiplex Structure of Interbank Networks. Available at SSRN: <http://ssrn.com/abstract=2352787>, *Quantitative Finance* (in press).
3. Bouchaud J.-P., F. Caccioli and J. D. Farmer, Impact-adjusted valuation and the criticality of leverage, *Risk magazine* Dec. 2012 (2012).
4. Gabbi G., G. Iori, S. Jafarey and J. Porter, Financial regulations and bank credit to the real economy, *Journal of Economic Dynamics and Control* (January 2015).
5. Hatzopoulos Vasilis, Giulia Iori, Rosario N. Mantegna, Salvatore Micciche', Michele Tumminello, Quantifying preferential trading in the e-MID interbank market, *Quantitative Finance* (in press).

6. Iori G. and J. Porter, Agent based Modelling for Financial Markets, invited chapter for Handbook on Computational Economics and Finance. Eds. Shu-Heng Chen and Mak Kaboudan, OUP Oxford University Press, (in press).
7. Kapar B., G. Iori and J. Olmo, Bank Characteristics and the Interbank Money Market: A Distributional Approach, *Studies in Nonlinear Dynamics & Econometrics* (in press).
8. P. Klimek, S. Poledna, J.D. Farmer, and S. Thurner (2014), To bail-out or to bail-in? Answers from an agent-based model. *Journal of Economic Dynamics and Control* (January 2015).
9. F. Lillo and D. Pirino, The Impact of Systemic and Illiquidity (2014) Risk on Financing with Risky Collateral. *Journal of Economic Dynamics and Control* (January 2015). Available at SSRN 2417244
10. Poledna S., S Thurner, J. Farmer, and J. Geanakoplos (2014), Leverage-induced systemic risk under Basle II and other credit risk policies, *Journal of Banking & Finance* 42.
11. Thurner S. and Poledna S. (2013), DebtRank-transparency: Controlling systemic risk in financial networks, *Scientific Reports* 3, 1888.
12. Assenza T., DelliGatti D., Grazzini J. (2014) Emergent dynamics of a macroeconomic agent based model with capital and credit, *Journal of Economic Dynamics and Control* (January 2015)
13. Thurner S. and Poledna S. (2014), Elimination of systemic risk in financial networks by means of a systemic risk transaction tax, arXiv:1401.8026v2 [q-fin.RM] 10 Feb 2014
14. Catullo, E. Gallegati, M. Palestrini, A. (2014) Towards a Credit Network Based Early Warning Indicator for Crises. *Journal of Economic Dynamics and Control*, (January 2015).
15. S. Gualdi, M. Tarzia, F. Zamponi and J.-P. Bouchaud, (2014), Tipping points in macroeconomic agent-based models *Journal of Economic Dynamics and Control* (January 2015).
16. G. Iori, R. N. Mantegna, L. Marotta, S. Miccichè, J. Porter, and M. Tumminello (2014), Networked Relationships in the e-MID Interbank Market: A Trading Model with Memory *Journal of Economic Dynamics and Control* (January 2015).
17. Assenza, T., Grazzini, J., Hommes, C.H., Massaro, D. (2014): PQ Strategies in Monopolistic Competition: Some Evidence from the Lab, *Journal of Economic Dynamics and Control*, (January 2015).

## Papers Under Review

1. G. Bormetti, L.M. Calcagnile, M. Treccani, F. Corsi, S. Marmi, F. Lillo (2013), Modelling Systemic Price Cojumps with Hawkes Factor Models. Available at SSRN: <http://ssrn.com/abstract=2209139> or <http://dx.doi.org/10.2139/ssrn.2209139> (under review).
2. F. Caccioli, M. Shrestha, C. Moore and J.D. Farmer, Stability analysis of financial contagion due to overlapping portfolios (2012) Available online at <http://arxiv.org/abs/1210.5987> (under review).
3. F. Caccioli, J.D. Farmer, N. Foti and D. Rockmore, How interbank lending amplifies overlapping portfolio contagion: A case study of the Austrian banking network. Submitted, Available online at <http://arxiv.org/abs/1306.3704> (2013).



4. F. Caccioli, J.-P. Bouchaud and J. D. Farmer, A proposal for impact-adjusted valuation: Critical leverage and execution risk, Submitted, Available online at <http://arxiv.org/abs/1204.0922> (2012).
5. Corsi F., S. Marmi, F. Lillo, (2013) When Micro Prudence Increases Macro Risk: The Destabilizing Effects of Financial Innovation, Leverage, and Diversification. Available at SSRN: <http://ssrn.com/abstract=2278298> or <http://dx.doi.org/10.2139/ssrn.2278298> (under review).
6. F. Corsi, F. Lillo, D. Pirino, Econometric measures of flight-to-quality by means of Granger-causality tail risk networks (in preparation 2014)
7. Kovaleva Polina and Giulia Iori (2014), [Transparency Regimes in a Market with Heterogeneous Trading Rules](#) (under review).
8. Mazzarisi P., S. Marmi, F. Lillo (2014), A dynamical systems approach to systemic risk (in preparation).
9. S. Poledna, S. Thurner, J. Farmer, and J. Geanakoplos, Leverage-induced systemic risk under Basle II and other credit risk policies, Preprint: arXiv:1301.6114 (2013).
10. S. Poledna, J.L. Molina-Borboa, S. Martínez-Jaramillo, M. van der Leij and S. Thurner (2014), Multi-layer network nature of systemic risk in financial networks and its implications, (under review).
11. G. Ranco, I. Bordino, G. Bormetti, G. Caldarelli, F. Lillo, M. Treccani, (2014) Coupling news sentiment with web browsing data predicts intra-day stock prices (under review).
12. J-P. Bouchaud, D.Challet, J. da Gama Batista, (2014), Sudden Trust Collapse in Networked Societies .
13. J-P. Bouchaud, G. Cencetti, S. Gualdi, M. Tarzia, F. Zamponi (2014) Endogenous crisis waves: a stochastic model with synchronized collective behavior, arXiv:1409.3296v1 [cond-mat.stat-mech] 11 Sep 2014 .
14. J. Bonart , J-P. Bouchaud, A. Landier, D. Thesmar, (2014), Instabilities in large economies: aggregate volatility without idiosyncratic shocks, arXiv:1406.5022v1 [q-fin.EC] 19 Jun 2014
15. Marotta, L., Micciché, S., Fujiwara, Y., Iyetomi, H., Aoyama, H., Gallegati, M. and Mantegna, Rosario N., Bank-Firm Credit Network in Japan. An Analysis of a Bipartite Network (July 17, 2014) (submitted). Available at SSRN: <http://ssrn.com/abstract=2469069>
16. Assenza, T., Bao, T., Hommes, C.H., Massaro, D. (2014): Experiments on Expectations in Macroeconomic and Finance, in "Experiments in Macroeconomics", J. Duffy (ed.), Vol. 17, *Research in Experimental Economics*.
17. Assenza, T., Heemeijer, P., Hommes, C.H., Massaro, D. (2014): Managing Self-organization of Expectations through Monetary Policy: a Macro Experiment, CeNDEF Working Paper 14-07, University of Amsterdam.
18. Agliari, A., Massaro, D., Pecora, N., Spelta, A. (2014): Inflation Targeting, Recursive Inattentiveness and Heterogeneous Beliefs, CeNDEF Working Paper 14-12, University of Amsterdam.



19. Hommes, C.H., Massaro, D. (2014): The Case for a 4% Inflation target: an Experiment with Policymakers, CRISIS Deliverable D4.3.
20. Gama, J., Massaro, D., Challet, D., Bouchaud J.P., Hommes, C.H. (2014): Do Investors Trade Too Much: A Large Scale Laboratory Experiment, CRISIS Deliverable D4.5.

### 3.3 Deliverables and milestones tables

TABLE 1. DELIVERABLES<sup>1</sup>

Del. No.	Deliverable Name	Version	WP	Leader	Nature	D. Level	Delivery date from Annex I	Actual/Forecast Delivery date	Status	Contractual	Comments
D1.5	Database linked and tested with model/game, providing full functionality	1	1		R	P	30	21/07/2014		Y	
D2.3	Simulation platform of a final model incorporating the real economy	1	2		R	P	30	04/07/2014		Y	
D2.4	At least two papers to be submitted to academic journals	1	2		R	P	36	31/12/2014		Y	
D2.5	Report containing critical findings on systemic risk, banking regulation, and the contagion mechanisms	1	2		R	P	36	31/12/2014		Y	
D3.4	A paper on development of MABM mark III	1	3		R	P	30	04/07/2014		Y	
D4.3	A paper on laboratory experiments with policy makers	1	4		R	P	30	29/10/2014		Y	
D4.4	Development of a software package for running a learning to forecast game for small scale experiments as well as large-scale internet experiments	1	4		R	P	30	04/07/2014		Y	
D4.5	An experimental paper on large scale internet experiments	1	4		R	P	36	29/10/2014		Y	
D4.6	Experimental data set of individual decision rules and aggregate behavior	1	4		R	P	36	07/11/2014		Y	
D5.6	Test report	1	5		R	P	30	04/07/2014		Y	
D6.3	Production version	1	6		R	P	30	04/07/2014		Y	
D6.4	A paper to be submitted for publication	1	6		R	P	30	31/12/2014		Y	
D7.2	Updated paper on statistical physics inspired agent based models	1	7		R	P	30	04/07/2014		Y	
D7.3	A list of guidelines and recommendations	1	7		R	P	36	31/12/2014		Y	
D8.1	An economic on-line game with a	1	8		R	P	24	31/12/2014		Y	

<sup>1</sup>

For Security Projects the template for the deliverables list in Annex A1 has to be used.

	community of users, producing data on their choices										
D8.4	Two research papers to be submitted to high quality journals	1	8		R	P	36	31/12/2014		Y	
D9.6	Workshop	1	9		R	P	30	04/07/2014		Y	

TABLE 2. MILESTONES

<b>Milestone no.</b>	<b>Milestone name</b>	<b>Work package no</b>	<b>Lead beneficiary</b>	<b>Delivery date from Annex I</b>	<b>Achieved Yes/No</b>	<b>Actual / Forecast achievement date</b>	<b>Comments</b>
MS2	Model parameterized, initialized with dataset	1		30	Y	21/07/2014	D1.5 submitted
MS3	Model performance tested and assessed against dataset	1		30	Y	21/07/2014	D1.5 submitted
MS4	Banking regulation scheme which is empirically tested for systemic risks: contagion mechanisms	2		36	Y	31/12/2014	D2.5 submitted
MS6	Software package for laboratory and internet experiments in nonlinear complex feedback systems.	4		30	Y	04/07/2014	D4.4. submitted
MS9	Enrich the basic model to allow for the existence of a financial sector	7		30	Y	04/07/2014	D7.2 submitted
MS10	Recommendations to devise and calibrate realistic agent based alternatives to DSGE models	7		36	Y	31/12/2014	D7.3 submitted
MS11	Delivery of the first prototype of the combined agent-based model and simulator	8		30	Y	20/11/2013	D6.2, D8.3 submitted
MS12	Release of the on-line game	8		30	Y	31/12/2014	D5.3, D5.4, D8.1 submitted
MS16	Organization of webinar with Stakeholder Working Group members	9		33	Y	07/10/2014	Tutorial session
MS17	Organization of Advisory Board meetings with policymakers	9		33	Y	15/10/2014	AB Meeting @ BoE
MS18	Final workshop	9		36	Y	09/10/2014	Final workshop in Milan

### 3.4 Explanation of the use of the resources

## 01 UCSC

### Explanation of the use of the resources From month 25 to month 36 Partner No. 1 – UCSC

Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period			
Work Package	Item description	Amount	Explanations
WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8	Personnel costs	107.248,00	Delli Gatti Domenico, Full professor, (PMs 1,89) / Assenza Tiziana, Assistant professor, (PMs 1,76) / Baglioni Angelo, Full professor, (PMs 0,72) / Colombo Luca, Full professor, (PMs 0,79) / Femminis Gianluca, Full professor, (PMs 0,51) / Lossani Marco, Full professor, (PMs 0,62) / Motolese Maurizio, Full professor, (PMs 0,26) / Grazzini Jakob, Junior researcher, (PMs 11) / Gobbi Alessandro, Junior researcher, (PMs 11) / Spelta Alessandro, Junior researcher, (PMs 6,42) / George Papageorgiou Eleni, Facilitator, (PMs 0,48)
WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8	Travel costs	12.019,00	Oxford (UK), 12-14th November 2013, Integration group meeting, Jakob Grazzini / Brussels (BE), 25-27th November 2013, III <sup>rd</sup> Technical Review, Domenico Delli Gatti / Oxford (UK), 8-12th December 2013, Integration group meeting, Jakob Grazzini / Amsterdam (NL), 25 January - 7 February 2014, work with UVA - JECD special issue, Tiziana Assenza, Jakob Grazzini / Amsterdam (NL), 4-5 February 2014, work with UVA - JECD special issue, Domenico Delli Gatti / Oxford (UK), 16-18 March 2014, V <sup>th</sup> CRISIS Workshop, Domenico Delli Gatti, Tiziana Assenza, Jakob Grazzini, Alessandro Gobbi / Oslo (NO), 21-25 June 2014, CEF 2014, Tiziana Assenza, Jakob Grazzini, Alessandro Gobbi / Spelta
WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8	Equipment	1.282,00	Depreciation of 3 laptops and 1 monitor
WP9, WP10	Personnel costs	23.744,00	Delli Gatti Domenico, Full professor, (PMs 0,19) / George Papageorgiou Eleni, Facilitator, (PMs 5,36)
WP9, WP10	Travel costs	1.586,00	Oxford (UK), 16-18 March 2014, V <sup>th</sup> CRISIS Workshop, Eleni Papageorgiou / London (UK), 14-15 October 2014, CRISIS AB Meeting Bank of England, Domenico Delli Gatti
WP9, WP10	Equipment	273,00	Depreciation of 1 laptop
WP9, WP10	Other costs	1.382,00	Litografia Fratelli Verderio, Invoice no. 001203 - 30/11/2013, Brochure/Interviews printing costs (471,00) / Citrix, Invoice no. 1202075048 - 24/04/2014, Conf call system licence for 6 months (474,00) / Litografia Solari, Invoice no. 787/14 - 29/10/2014, Poster Final conference (printing costs) (18,90) / UCSC, Invoice no. CF000301 - 09/10/2014, Final conference photographic service (100,00) / Tutorial: meal for participants (canteen), EDUCatt, Invoice no. FA002773 and no FA002792 (318,18)
WP9, WP10	Audit certificate	2.080,00	CFS submitted
WP9, WP10	Subcontracting	10.753,00	Avallone Gaia, Invoice no. 11/2013 - 28/11/2013, Brochure Interviews - graph design (510) / Fondaz. Museo Leonardo da Vinci, Invoice no. 294/c - 31/10/2014, Final conference: renting of social dinner room (3050) / Piaceri d'Italia, Invoice no. 355/2014 - 09/10/2013, Final conference: catering social dinner (3725) / Il Partycolore, Invoice no. 225.2014 - 09/10/2014, Final conference: catering (3300) / GE-BAR Srl, Invoice no. 158 - 31/10/2014, Tutorial session: coffee break, (168,5)
TOTAL DIRECT COSTS		160.367,00	
INDIRECT COSTS		88.520,00	
TOTAL COSTS		248.887,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Delli Gatti Domenico	Full professor	WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9, WP10	2,08
Assenza Tiziana	Assistant professor	WP2, WP3, WP4, WP5, WP6, WP8	1,76

Baglioni Angelo	Full professor	WP2, WP3	0,72
Colombo Luca	Full professor	WP2, WP3	0,79
Femminis Gianluca	Full professor	WP2, WP3	0,51
Lossani Marco	Full professor	WP2, WP3	0,62
Motolese Maurizio	Full professor	WP3	0,26
Grazzini Jakob	Junior researcher	WP1, WP2, WP3, WP4, WP5, WP6, WP8	11,00
Gobbi Alessandro	Junior researcher	WP1, WP2, WP3, WP4, WP5, WP6	11,00
Spelta Alessandro	Junior researcher	WP2, WP3, WP8	6,42
George Papageorgiou Eleni	Facilitator	WP3, WP8, WP9, WP10	5,84
			<b>41,00</b>

### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Oxford (UK), 12-14th November 2013, Integration group meeting, Jakob Grazzini
- Brussels (BE), 25-27th November 2013, III° Technical Review, Domenico Delli Gatti
- Oxford (UK), 8-12th December 2013, Integration group meeting, Jakob Grazzini
- Amsterdam (NL), 25 January - 7 February 2014, work with UVA - JECD special issue, Tiziana Assenza, Jakob Grazzini
- Amsterdam (NL), 4-5 February 2014, work with UVA - JECD special issue, Domenico Delli Gatti
- Oxford (UK), 16-18 March 2014, V° CRISIS Workshop, Domenico Delli Gatti, Tiziana Assenza, Jakob Grazzini, Alessandro Gobbi
- Oslo (NO), 21-25 June 2014, CEF 2014, Tiziana Assenza, Jakob Grazzini, Alessandro Spelta

### Events organization

- Tutorial session 7 October 2014
- CRISIS Final conference 8-9 October 2014

### Effort

PARTNER		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	TOTAL
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	
UCSC	Planned PMs	9,00	4,00	61,00	13,00	4,00	4,00	1,00	4,00	2,00	8,00	110,00
	Actual PMs - First report	0,22	0,37	22,67	1,89	0,02	0,00	0,47	0,60	1,22	2,78	30,24
	Actual PMs - Second report	5,35	2,52	18,48	6,56	1,80	2,71	0,44	1,55	1,56	3,99	44,96
	Actual PMs - Third report	1,72	2,93	18,56	5,57	2,16	1,50	0,12	2,89	1,36	4,19	41,00
	Actual PMs - TOTAL	7,29	5,82	59,71	14,02	3,98	4,21	1,03	5,04	4,14	10,96	116,20

### Budget/actual costs

1-UCSC					
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)			
		Period 1	Period 2	Period 3	TOTAL
Person Months	0,00	30,24	44,96	41,00	116,20
Personnel costs	379.750,00	136.065,00	168.625,00	130.992,00	435.682,00
Travel costs	70.525,00	34.415,00	33.061,00	13.605,00	81.081,00
Equipment costs	3.000,00	174,00	1.418,00	1.555,00	3.147,00
Consumables costs	0,00	0,00	0,00	0,00	0,00
Other costs	9.650,00	4.578,00	1.448,00	1.382,00	7.408,00
Audit costs	10.000,00	0,00	0,00	2.080,00	2.080,00
Subcontracting costs	23.191,00	7.002,00	1.600,00	10.753,00	19.355,00
Indirect costs	277.755,00	105.139,00	122.731,00	88.520,00	316.390,00
TOTAL COSTS	773.871,00	287.373,00	328.883,00	248.887,00	865.143,00
EU CONTRIBUTION	607.811,00	226.073,00	258.392,00	200.667,00	685.132,00

UCSC\_end

## 03 UvA

### Explanation of the use of the resources From month 25 to month 36 Partner No. 3 – UvA

**Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period**

Work Package	Item description	Amount	Explanations
WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8	Personnel costs	150.359,00	Cars Hommes, Full professor (PMs 6,20); Domenico Massaro, Post-doc (PMs 13,48), van der Leij M, Post-doc (PM's 3), Ochea M. , Post-doc (PM 1)
WP4.WP9	Travel and Subsistence	0,00	Brussels (BE)-25/11-27/11-13, Crisis Review meeting , C.H. Hommes; Budapest (HU), 02/12-07/12-2013 Workshop AITA D.Massaro; Oxford 16/3-18/3-2014 Conference D. Massaro; Hampshire 23/3-26/3-2014 Collaboration D.Massaro with Joao da Gama Batista; Jordan Amman 2/5-11/6-2014 IEA World Congress D.Massaro; Amsterdam (NL) 22/5/2014 Pilot Trading Experiments at UvA, C.H. Hommes; Oslo (NO), 21/6-25/6-2014 CEF Conference D. Massaro; London (UK) Advisory Board meeting, C.H. Hommes Milano (IT), CRISIS Final Conference C.H. Hommes
WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8	Equipment	1.383,00	Depreciation of 1 laptop
WP4	Other costs	6.652,00	Complexity Models, 18 november, University Leiden/Lorenz Center - Reprints, 11/10/2014, Elsevier / Journal of economics.
WP4	Other costs	20.141,00	Experiment costs and Payment for subjects in a lab experiment
WP4	Other costs	240,00	Books purchase
WP9	Audit Costs	1.500,00	Audit costs PWC
TOTAL DIRECT COSTS		180.275,00	
INDIRECT COSTS		82.881,00	
TOTAL COSTS		263.156,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Hommes Cars	Full professor	WP2, WP3, WP4	6,20
Massaro Domenico	Post-doc	WP1, WP2, WP4, WP5, WP6, WP7, WP8	13,48
van der Leij M,	Post-doc	WP2, WP4	3
Ochea M.	Post-doc	WP4	1
			<b>23,61</b>

#### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Brussels (BE)-25/11-27/11-13, Crisis Review meeting , C.H. Hommes;
- Budapest (HU), 02/12-07/12-2013 Workshop AITA D.Massaro;
- Oxford 16/3-18/3-2014 Conference D. Massaro;
- Hampshire 23/3-26/3-2014 Collaboration D.Massaro with Joao da Gama Batista;
- Jordan Amman 2/5-11/6-2014 IEA World Congress D.Massaro;
- Oslo (NO), 21/6-25/6-2014 CEF Conference D. Massaro;
- London (UK) Advisory Board meeting, C.H. Hommes
- Milano (IT), CRISIS Final Conference C.H. Hommes

#### Event organization:

- Amsterdam (NL) 22/5/2014 Pilot Trading Experiments at UvA, C.H. Hommes;

## Effort

		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	
PARTNER		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10		TOTAL
UvA	Planned PMs	1,00	20,00	1,00	26,00	2,00	2,00	2,00	2,00	0,00	0,00		56,00
	Actual PMs - First report	0,00	4,87	0,13	6,13	0,50	0,50	0,50	0,50	0,00	0,00		13,13
	Adjustment to first report	0,00	0,21	0,22	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,43
	Acutal PMs - Second report	1,00	5,88	0,30	8,20	0,60	0,50	0,50	0,50	0,00	0,00		17,48
	Adjustment to second report	0,00	-0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		-0,02
	Actual PMs - Third report	1,00	7,20	2,00	9,41	1,00	1,00	1,00	1,00	0,00	0,00		23,61
	Actual PMs - TOTAL	2,00	18,14	2,65	23,74	2,10	2,00	2,00	2,00	0,00	0,00		54,63

## Budget/actual costs

03 UvA		Actual costs (Eur)						
Type of expenditure (as foreseen by the budget)	BUDGET							TOTAL
		Period 1	ADJUSTMENT TO PERIOD 1	ADJUSTMENT TO PERIOD 1 TO BE SUBMITTED	Period 2	ADJUSTMENT TO PERIOD 2	Period 3	
Person Months	56,00	13,13	0,00	0,43	17,48	-0,02	23,61	54,63
Personnel costs	292.974,00	78.367,00	0,00	-285,00	122.846,00	-263,00	150.359,00	351.024,00
Travel costs	12.000,00	9.406,00	1.948,00	-11.354,00	9.957,00	-9.958,00	0,00	-1,00
Equipment costs	4.000,00	39,00	0,00	-176,00	461,00	-461,00	1.383,00	1.246,00
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Other costs	50.000,00	137,00	0,00	0,00	10.220,00	-287,00	27.033,00	37.103,00
Audit costs	1.500,00	0,00	0,00	0,00	0,00	0,00	1.500,00	1.500,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Indirect costs	199.136,00	60.436,00	0,00	5.455,00	73.971,00	-9.315,00	82.881,00	213.428,00
<b>TOTAL COSTS</b>	<b>559.610,00</b>	<b>148.385,00</b>	<b>1.948,00</b>	<b>-6.360,00</b>	<b>217.455,00</b>	<b>-20.284,00</b>	<b>263.156,00</b>	<b>604.300,00</b>
<b>EU CONTRIBUTION</b>	<b>430.082,00</b>	<b>111.288,00</b>	<b>1.461,00</b>	<b>-4.770,00</b>	<b>163.091,00</b>	<b>-15.213,00</b>	<b>197.742,00</b>	<b>453.599,00</b>

03\_UvA\_end



## 04 CREI

### Explanation of the use of the resources From month 25 to month 36 Partner No. 4 – CREI

Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period

Work Package	Item description	Amount	Explanations
		0,00	
TOTAL INDIRECT COSTS		0,00	
	TOTAL COSTS	0,00	

CREI costs statement is equal to 0 since we have already carried out all the activities and reached the max EU financing at the end of the second year.

#### Effort(\*)

PARTNER		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	TOTAL
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	
CREI	New Planned PMs	1,50	0,50	23,00	1,00	0,25	0,25	0,50	1,00	0,00	0,00	28,00
	Actual PMs - First report	0,30	0,00	2,80	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,10
	Actual PMs - Second report	1,00	0,00	13,90	0,50	0,00	0,00	0,50	0,70	0,00	0,00	16,60
	Actual PMs - Third report	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Actual PMs - TOTAL	1,30	0,00	16,70	0,50	0,00	0,00	0,50	0,70	0,00	0,00	19,70

At the beginning of the third year the unit leader moved to University of Cambridge

#### Budget/actual costs

04 CREI					
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)			
		Period 1	Period 2	Period 3	TOTAL
Person Months	43,50	3,10	16,60	0,00	19,70
Personnel costs	79.914,00	18.599,00	55.627,00	0,00	74.226,00
Travel costs	5.000,00	1.498,00	1.044,00	0,00	2.542,00
Equipment costs	4.000,00	0,00	533,00	0,00	533,00
Consumables costs	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	0,00	0,00	0,00	0,00
Audit costs	0,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00
Indirect costs	53.348,00	12.058,00	34.222,00	0,00	46.280,00
<b>TOTAL COSTS</b>	<b>142.262,00</b>	<b>32.155,00</b>	<b>91.426,00</b>	<b>0,00</b>	<b>123.581,00</b>
<b>EU CONTRIBUTION</b>	<b>80.022,00</b>	<b>24.116,00</b>	<b>55.906,00</b>	<b>0,00</b>	<b>80.022,00</b>

## 04 CREI\_end

## 05 MUW

### Explanation of the use of the resources From month 25 to month 36 Partner No. 5 – MUW

Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period

Work Package	Item description	Amount	Explanations
WP2, WP3, WP6, WP8	Personnel costs	47.051,00	S.Thurner, full professor, (PMs 0,4) / S. Poledna, MSc researcher, (PMs 9) / P. Klimek, post-doc researcher, (PMs 1)
WP2, WP3, WP6, WP8	Travel costs	2.593,00	Paris (FR), 14-16 October 2013, Fourth CRISIS Workshop, S.Poledna, P.Klimek / Oxford (UK), 8-12th December 2013, Integration group meeting, P. Klimek / Oxford (UK), 16-18 March 2014, V° CRISIS Workshop, S.Poledna, Stefan Thurner / Milano (IT), 7-9 October 2014, CRISIS Final Workshop, S.Poledna, Stefan Thurner
TOTAL DIRECT COSTS		49.644,00	
INDIRECT COSTS		29.786,00	
TOTAL COSTS		79.430,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Stefan Thurner	Full professor	WP2, WP6, WP8	0,4
Poledna Sebastian	MSc researcher	WP2, WP3, WP6, WP8	9
Klimek Peter	Post-doc	WP6	1
			<b>10,40</b>

#### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Paris (FR), 14-16 October 2013, Fourth CRISIS Workshop, S.Poledna, P.Klimek
- Oxford (UK), 8-12th December 2013, Integration group meeting, P. Klimek
- Oxford (UK), 16-18 March 2014, V° CRISIS Workshop, S.Poledna, Stefan Thurner
- Milano (IT), 7-9 October 2014, CRISIS Final Workshop, S.Poledna, Stefan Thurner

#### Effort

PARTNER		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MG	MG	TOTAL
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	
MUW	Planned PMs	3,50	30,50	3,50	2,50	3,00	3,00	2,50	2,50	0,00	0,00	51,00
	Actual PMs - First report	0,00	18,38	0,88	0,00	0,00	0,00	0,00	0,00	0,00	0,00	19,25
	Actual PMs - Second report	2,00	11,10	3,00	0,00	1,10	3,00	1,10	2,00	0,00	0,00	23,30
	Actual PMs - Third report	0,00	6,20	1,00	0,00	0,00	2,60	0,00	0,60	0,00	0,00	10,40
	Actual PMs - TOTAL	2,00	35,68	4,88	0,00	1,10	5,60	1,10	2,60	0,00	0,00	52,95

## Budget/actual costs

05 MUW					
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)			
		Period 1	Period 2	Period 3	TOTAL
<i>Person Months</i>	51,00	19,25	23,30	10,40	52,95
Personnel costs	226.720,00	86.285,00	122.137,00	47.051,00	255.473,00
Travel costs	10.000,00	2.519,00	2.654,00	2.593,00	7.766,00
Equipment costs	0,00	0,00	0,00	0,00	0,00
Consumables costs	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	0,00	0,00	0,00	0,00
Audit costs	0,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00
Indirect costs	142.032,00	53.282,00	74.874,00	29.786,00	157.942,00
<b>TOTAL COSTS</b>	<b>378.752,00</b>	<b>142.086,00</b>	<b>199.665,00</b>	<b>79.430,00</b>	<b>421.181,00</b>
<b>EU CONTRIBUTION</b>	<b>284.064,00</b>	<b>106.564,00</b>	<b>149.748,00</b>	<b>59.572,00</b>	<b>315.884,00</b>

05 MUW\_end

## 06 CITY

### Explanation of the use of the resources From month 25 to month 36 Partner No. 6 – CITY

**Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period**

Work Package	Item description	Amount	Explanations
WP2, WP8, WP9, WP10	Personnel costs	108.342,00	Giulia Iori, Principal Investigator, (PMs 3.01) /James Porter, Researcher, (PMs 7) /P Kovaleva, Research Assistant, (PMs 0.25) / Burcu Kapar, Research Assistant, (PMs 0.06) /Saqib Jafarey, Researcher, (PMs 2.84)
WP2	Travel costs	4.977,00	Oslo (Norway), 22-24 June 2014, CEF 2014, presented paper on Market transparency and market quality, Giulia Iori / Oxford (UK), 17-18 Mar 2014, Diversity in macroeconomics conference in Colchester and Oxford Crisis meeting , Giulia Iori, James Porter / Brussels (Belgium), 25-27 Nov 2013, 2nd Annual Review, Giulia Iori / Rome (Italy), 25-29 Aug 2014, meeting at Newton Institute on Systemic Risk (while based in Rome over the summer), Giulia Iori / Milan (Italy), 08-09 Oct 2014 CRISIS Final workshop, Giulia Iori / Cambridge (UK), 22-26 Sep 2014, Meeting at the Newton Institute on Systemic Risk, Giulia Iori
WP2	Publication	550,00	Submission fees for "Journal of Financial Intermediation" and Journal of Banking and Finance
TOTAL DIRECT COSTS		113.869,00	
INDIRECT COSTS		68.321,00	
TOTAL COSTS		182.190,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Giulia Iori	Full professor	WP2, WP8, WP9, WP10	3,01
James Porter	Researcher	WP2	7
Polina Kovaleva	Research Ass.	WP2	0,25
Burcu Kapar	Research Ass.	WP2	0,06
Saqib Jafarey	Researcher	WP8, WP9	2,84
			<b>13,16</b>

#### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Oslo (Norway), 22-24 June 2014, CEF 2014, presented paper on Market transparency and market quality, Giulia Iori;
- Oxford (UK), 17-18 Mar 2014, Diversity in macroeconomics conference in Colchester and Oxford Crisis meeting , Giulia Iori, James Porter;
- Brussels (Belgium), 25-27 Nov 2013, 2nd Annual Review, Giulia Iori;
- Rome (Italy), 25-29 Aug 2014, meeting at Newton Institute on Systemic Risk (while based in Rome over the summer), Giulia Iori;
- Milan (Italy), 08-09 Oct 2014 CRISIS Final workshop, Giulia Iori;
- Cambridge (UK), 22-26 Sep 2014, Meeting at the Newton Institute on Systemic Risk, Giulia Iori.

## Effort

		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	
PARTNER		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10		TOTAL
CITY	Planned PMs	1,50	20,50	1,50	1,50	1,00	1,00	1,50	1,50	0,00	0,00		30,00
	Actual PMs - First report	0,00	7,26	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		7,26
	Acutal PMs - Second report	0,00	13,50	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		13,50
	Actual PMs - Third report	0,00	12,31	0,00	0,00	0,00	0,00	0,00	0,08	0,67	0,10		13,16
	Actual PMs - TOTAL	0,00	33,07	0,00	0,00	0,00	0,00	0,00	0,08	0,67	0,10		33,92

## Budget/actual costs

06 CITY								
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)						
		Period 1	ADJUSTMENT TO PERIOD 1	Period 2	ADJUSTMENT TO PERIOD 2	Period 3	TOTAL	
Person Months	30,00	7,26	0,00	13,50	0,00	13,16	33,92	
Personnel costs	206.998,00	44.418,00	0,00	66.522,00	0,00	108.342,00	219.282,00	
Travel costs	26.000,00	2.251,00	1.266,00	5.636,00	667,00	4.977,00	14.797,00	
Equipment costs	3.000,00	0,00	0,00	0,00	0,00	0,00	0,00	
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
Other costs	0,00	428,00	0,00	803,00	0,00	550,00	1.781,00	
Audit costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
Subcontracting costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
Indirect costs	141.598,00	28.258,00	759,00	43.776,00	400,00	68.321,00	141.514,00	
TOTAL COSTS	377.596,00	75.355,00	2.025,00	116.737,00	1.067,00	182.190,00	377.374,00	
EU CONTRIBUTION	283.197,00	56.516,00	1.518,00	87.552,00	800,00	136.642,00	283.028,00	

06 CITY\_end

## 08 AITIA

### Explanation of the use of the resources From month 25 to month 36 Partner No. 8 – AITIA

**Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period**

Work Package	Item description	Amount	Explanations
WP5, WP6	Personnel costs SME Owners	82.488,00	Gabor Tatai, owner, (PMs 6), Laszlo Gulyas, owner, (PMs 9)
WP5, WP6	Personnel costs	47.960,00	Vilmos Kozma, employee, (PMs 5), Gergo Zsiak, employee, (PMs 5), Richard Legendi, employee, (PMs 2,25), Peter Rieger, employee, (PMs 9), Tamas Mahr, employee, (PMs 2,5)
WP5, WP6	Travel costs	6.650,00	Vilnius (LT), 05-09 November 2013, ICT 2013: Create, Connect, Grow, EC event on Horizon 2020, Tamas Mahr / Brussel (BE), 25-28 November 2013, Review meeting, Tamas Mahr, Laszlo Gulyas / Oxford (UK), 08-10 December 2013, Integration group meeting, Tamas Mahr, Laszlo Gulyas / Oxford (UK), 16-18 March 2014, V° CRISIS workshop, Laszlo Gulyas / Barcelona (ES), 31 August - 05 September 2014, SSC 2014 Social Simulation Conference, disseminating PET2, the game software, Laszlo Gulyas / Milano (IT) 06-10 October 2014 CRISIS final workshop, Tamas Mahr, Laszlo Gulyas / London (UK), 10-16 October 2014, Advisory group meeting, Tamas Mahr, Laszlo Gulyas / Brest (FR), 29-31 October 2014, Decision Deck workshop, disseminating PET2, the game software, Tamas Mahr
TOTAL DIRECT COSTS		137.098,00	
INDIRECT COSTS		82.258,00	
TOTAL COSTS		219.356,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Gabor Tatai	Owner(*)	WP5	6,00
Laszlo Gulyas	Owner(*)	WP6	9,00
Vilmos Kozma	Employee	WP5	5,00
Gergo Zsiak	employee	WP5	5,00
Richard Legendi	employee	WP6	2,25
Peter Rieger	employee	WP6	9,00
Tamas Mahr	employee	WP5, WP6, WP9	2,50
			<b>38,75</b>

(\*) As described in the DoW, AITIA is a Hungarian SME and has been applying the flat rate for SME owners.

#### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Vilnius (LT), 05-09 November 2013, ICT 2013: Create, Connect, Grow, EC event on Horizon 2020, Tamas Mahr
- Brussel (BE), 25-28 November 2013, Review meeting, Tamas Mahr, Laszlo Gulyas
- Oxford (UK), 08-10 December 2013, Integration group meeting, Tamas Mahr, Laszlo Gulyas
- Oxford (UK), 16-18 March 2014, V° CRISIS workshop, Laszlo Gulyas
- Barcelona (ES), 31 August - 05 September 2014, SSC 2014 Social Simulation Conference, disseminating PET2, the game software, Laszlo Gulyas
- Milano (IT) 06-10 October 2014 CRISIS final workshop, Tamas Mahr, Laszlo Gulyas

- London (UK), 10-16 October 2014, Advisory group meeting, Tamas Mahr, Laszlo Gulyas
- Brest (FR), 29-31 October 2014, Decision Deck workshop, disseminating PET2, the game software, Tamas Mahr

## Effort

PARTNER		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	TOTAL
AITIA	Planned PMs	0,00	0,00	0,00	0,00	46,00	47,00	0,00	0,00	1,00	0,00	94,00
	Actual PMs - First report	0,00	0,00	0,00	0,00	18,75	10,00	0,00	0,00	0,00	0,00	28,75
	Actual PMs - Second report	0,00	0,00	0,00	0,00	12,00	19,00	0,00	0,00	0,00	0,00	31,00
	Actual PMs - Third report	0,00	0,00	0,00	0,00	17,00	20,75	0,00	0,00	1,00	0,00	38,75
	Actual PMs - TOTAL	0,00	0,00	0,00	0,00	47,75	49,75	0,00	0,00	1,00	0,00	98,50

## Budget/actual costs

08 AITIA					
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)			
		Period 1	Period 2	Period 3	TOTAL
Person Months	94,00	28,75	31,00	38,75	98,50
Personnel costs	379.680,00	126.393,00	131.409,00	130.448,00	388.250,00
Travel costs	25.000,00	9.350,00	8.089,00	6.650,00	24.089,00
Equipment costs	0,00	354,00	229,00	0,00	583,00
Consumables costs	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	813,00	0,00	0,00	813,00
Audit costs	5.000,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00
Indirect costs	242.808,00	82.146,00	83.836,00	82.258,00	248.240,00
<b>TOTAL COSTS</b>	<b>652.488,00</b>	<b>219.056,00</b>	<b>223.563,00</b>	<b>219.356,00</b>	<b>661.975,00</b>
<b>EU CONTRIBUTION</b>	<b>370.724,00</b>	<b>164.292,00</b>	<b>167.672,00</b>	<b>43.000,00</b>	<b>374.964,00</b>

At the beginning of the project AITIA changed the overheads rate. The initial budget was with 20% of overheads, then the EU approved the use of the 60% as foreseen for SMEs.

## 08 AITIA\_end



## 09 UNIPA

### Explanation of the use of the resources From month 25 to month 36 Partner No. 9 – UNIPA

Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period

Work Package	Item description	Amount	Explanations
WP1, WP2, WP3, WP5, WP6, WP8	Personnel costs	49.516,00	Rosario Nunzio Mantegna, Full professor, (PMs 0,8); Salvatore Miccichè, Assistant professor, (PMs 0,8); Luca Marotta, Post-doc 1, (PMs 12); Onofrio Rosario Battaglia, Post-doc 2, (PMs 7)
WP2	Travel costs	2.363,00	Paris (FR), 13-16 October 2013, IV° CRISIS Workshop, Luca Marotta / Oxford (UK), 08 -11 December 2013, Integration group meeting, Luca Marotta / Oxford (UK), 16-18 March 2014, V° CRISIS Workshop, Rosario Mantegna, Luca Marotta
TOTAL DIRECT COSTS		51.879,00	
INDIRECT COSTS		31.127,00	
TOTAL COSTS		83.006,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Rosario Nunzio Mantegna	Full professor	WP2, WP3, WP7	0,8
Salvatore Miccichè	Assistant professor	WP2, WP3	0,8
Luca Marotta	Post-doc	WP1, WP2, WP3, WP5, WP6, WP8	12
Onofrio Rosario Battaglia	Post-doc	WP2	7
			<b>20,60</b>

#### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Paris (FR), 13-16 October 2013, IV° CRISIS Workshop, Luca Marotta
- Oxford (UK), 08 -11 December 2013, Integration group meeting, Luca Marotta
- Oxford (UK), 16-18 March 2014, V° CRISIS Workshop, Rosario Mantegna, Luca Marotta

#### Effort

PARTNER		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	TOTAL
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	
UNIPA	Planned PMs	8,00	18,00	3,00	0,00	0,00	3,00	1,00	1,00	0,00	0,00	34,00
	Actual PMs - First report	1,00	8,23	1,04	0,00	0,00	1,20	0,36	0,36	0,00	0,00	12,19
	Actual PMs - Second report	3,00	7,00	1,00	0,00	0,00	1,00	0,26	0,20	0,00	0,00	12,46
	Actual PMs - Third report	4,00	14,02	0,96	0,00	0,00	0,80	0,38	0,44	0,00	0,00	20,60
	Actual PMs - TOTAL	8,00	29,25	3,00	0,00	0,00	3,00	1,00	1,00	0,00	0,00	45,25

## Budget/actual costs

09 UNIPA					
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)			
		Period 1	Period 2	Period 3	TOTAL
<i>Person Months</i>	34,00	12,19	12,47	20,60	45,26
Personnel costs	104.954,00	51.474,00	25.950,00	49.516,00	126.940,00
Travel costs	8.000,00	7.482,00	605,00	2.363,00	10.450,00
Equipment costs	0,00	0,00	0,00	0,00	0,00
Consumables costs	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	0,00	0,00	0,00	0,00
Audit costs	0,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00
Indirect costs	67.772,00	35.373,00	15.933,00	31.127,00	82.433,00
<b>TOTAL COSTS</b>	<b>180.726,00</b>	<b>94.329,00</b>	<b>42.488,00</b>	<b>83.006,00</b>	<b>219.823,00</b>
<b>EU CONTRIBUTION</b>	<b>135.544,00</b>	<b>70.746,00</b>	<b>31.866,00</b>	<b>62.254,00</b>	<b>164.866,00</b>

09 UNIPA\_end

## 10 CEA

### Explanation of the use of the resources From month 25 to month 36 Partner No. 10 – CEA

**Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period**

Work Package	Item description	Amount	Explanations
WP7	Personnel costs	69.891,00	Giulio Biroli, Senior researcher, (PMs 1,85); K. Primicerio, Trainee, (PMs 4); Stanislao Gualdi, Junior researcher, (PMs 12)
WP7	Travel costs	3.728,00	Oxford (UK), 22- 28 February 2014, Work with UOXF partner: software integration and scientific discussion, Stanislao Gualdi / Oxford (UK), 17-18 March 2014, Crisis Workshop, Stanislao Gualdi /Amsterdam (NL), 23-29 March 2014, Pilot Trading experiments at UvA, Joao Da Gama Batista / Les Houches (FR), 07-18 April 2014, School on structure and dynamics of complex networks, Joao Da Gama Batista / Amsterdam (NL), 18-24 May 2014, Pilot Trading experiments at UvA, Joao Da Gama Batista / Milan (IT), 07-09 October 2014, Crisis Final Workshop, Stanislao Gualdi
WP7	Other costs	861,00	Paris (FR), 14-16 October 2013, IV° Crisis workshop, coffee break and lunches
TOTAL DIRECT COSTS		74.480,00	
INDIRECT COSTS		38.964,00	
TOTAL COSTS		113.444,00	

#### Staff list and person months:

Name	Category	WP(s)	PMs
Giulio Biroli	Researcher	WP7	1,85
Stanislao Gualdi	Junior Researcher	WP7	12
K. Primicerio	Trainee	WP7	4
			<b>17,85</b>

(\*) As described in the DoW, CEA will not claim the personnel costs related to some researchers (Bouchaud, Zamponi, De Gama Batista) while they will claim the travel costs related to these persons and their effort is included in the table below.

#### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Oxford (UK), 22- 28 February 2014, Work with UOXF partner: software integration and scientific discussion, Stanislao Gualdi
- Oxford (UK), 17-18 March 2014, Crisis Workshop, Stanislao Gualdi
- Amsterdam (NL), 23-29 March 2014, Pilot Trading experiments at UvA, Joao Da Gama Batista
- Les Houches (FR), 07-18 April 2014, School on structure and dynamics of complex networks, Joao Da Gama Batista
- Amsterdam (NL), 18-24 May 2014, Pilot Trading experiments at UvA, Joao Da Gama Batista
- Milan (IT), 07-09 October 2014, Crisis Final Workshop, Stanislao Gualdi

#### Events organization

- Paris (FR), 14-16 October 2013, IV° Crisis workshop

## Effort

		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	
PARTNER		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10		TOTAL
CEA	Planned PMs	5,00	3,00	1,00	1,00	3,00	3,00	38,00	7,00	0,00	0,00		61,00
	Actual PMs - First report	0,00	0,00	0,00	0,00	0,00	0,00	6,20	0,00	0,00	0,00		6,20
	Acutal PMs - Second report	0,00	1,50	6,00	2,00	0,00	0,00	24,52	0,00	0,00	0,00		34,02
	Actual PMs - Third report	0,00	0,00	0,00	0,00	0,00	0,00	17,85	0,00	0,00	0,00		17,85
	Actual PMs - TOTAL	0,00	1,50	6,00	2,00	0,00	0,00	48,57	0,00	0,00	0,00		58,07

## Budget/actual costs

10 CEA						
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)				
		Period 1	ADJUSTMENT TO PERIOD 1	Period 2	Period 3	TOTAL
Person Months	61,00	6,20	0,00	34,02	17,85	58,07
Personnel costs	215.598,00	55.368,00	0,00	129.828,00	69.891,00	255.087,00
Travel costs	20.000,00	3.671,00	3.259,00	15.121,00	3.728,00	25.779,00
Equipment costs	0,00	0,00	0,00	0,00	0,00	0,00
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	0,00	0,00	0,00	861,00	861,00
Audit costs	0,00	0,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00	0,00
Indirect costs	141.358,80	30.868,00	0,00	72.379,00	38.964,00	142.211,00
<b>TOTAL COSTS</b>	<b>376.956,80</b>	<b>89.907,00</b>	<b>3.259,00</b>	<b>217.328,00</b>	<b>113.444,00</b>	<b>423.938,00</b>
<b>EU CONTRIBUTION</b>	<b>282.717,00</b>	<b>67.430,00</b>	<b>2.444,00</b>	<b>162.996,00</b>	<b>85.083,00</b>	<b>315.509,00</b>

10 CEA\_end

# 11 UNIVPM

## Explanation of the use of the resources From month 25 to month 36 Partner No. 11 – UNIVPM

**Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period**

Work Package	Item description	Amount	Explanations
WP1, WP3, WP8	Personnel costs	19.958,00	Gallegati Mauro, Full professor, (PMs 0,15) / Catullo Ermanno, post doc, (PMs 10,72)
WP3, WP8	Travel costs	1.868,00	Oxford (UK), 16-19 March 2014, V° Crisis workshop, Catullo Ermanno / New York (US), 13-18 April 2014, Conference "Nonlinear Time Series I (Special session in Honor of James B. Ramsey) Baruch College CUNY, N.Y., Catullo Ermanno / Milano (IT), 7-9 October 2014, Crisis final workshop, Mauro Gallegati, Ermanno Catullo
TOTAL DIRECT COSTS		21.826,00	
INDIRECT COSTS		13.095,00	
TOTAL COSTS		34.921,00	

### Staff list and person months:

Name	Category	WP(s)	PMs
Mauro Gallegati	Full professor	WP3	0,15
Ermanno Catullo	Post-doc	WP1, WP3, WP8	10,72
			<b>10,87</b>

### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Oxford (UK), 16-19 March 2014, V° Crisis workshop, Catullo Ermanno
- New York (US), 13-18 April 2014, Conference "Nonlinear Time Series I (Special session in Honor of James B. Ramsey) Baruch College CUNY, N.Y., Catullo Ermanno
- Milano (IT), 7-9 October 2014, Crisis final workshop, Mauro Gallegati, Ermanno Catullo

### Effort

PARTNER		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	TOTAL
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	
UNIVPM	Planned PMs	5,00	1,00	12,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	21,00
	Actual PMs - First report	2,00	0,00	3,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00	5,14
	Actual PMs - Second report	0,30	0,00	4,30	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,60
	Actual PMs - Third report	3,10	0,00	6,61	0,00	0,00	0,00	0,00	1,16	0,00	0,00	10,87
	Actual PMs - TOTAL	5,40	0,00	14,05	0,00	0,00	0,00	0,00	1,16	0,00	0,00	20,61

## Budget/actual costs

11 UNIVPM								
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)						
		Period 1	ADJUSTMENT TO PERIOD 1 ALREADY SUBMITTED	ADJUSTMENT TO PERIOD 1 TO BE SUBMITTED	Period 2	ADJUSTMENT TO PERIOD II	Period 3	TOTAL
Person Months	21,00	5,14	0,00	0,00	4,60	0,00	10,87	20,61
Personnel costs	48.000,00	17.518,00	0,00	0,00	10.915,00	-462,00	19.958,00	47.929,00
Travel costs	10.000,00	5.265,00	299,00	-280,00	4.565,00	2.447,00	1.868,00	14.164,00
Equipment costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Audit costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Indirect costs	34.800,00	13.669,00	179,00	-168,00	9.288,00	1.191,00	13.095,00	37.254,00
<b>TOTAL COSTS</b>	<b>92.800,00</b>	<b>36.452,00</b>	<b>478,00</b>	<b>-448,00</b>	<b>24.768,00</b>	<b>3.176,00</b>	<b>34.921,00</b>	<b>99.347,00</b>
<b>EU CONTRIBUTION</b>	<b>69.600,00</b>	<b>27.339,00</b>	<b>358,00</b>	<b>-336,00</b>	<b>18.576,00</b>	<b>2.382,00</b>	<b>26.190,00</b>	<b>74.509,00</b>

11 UNIVPM end

# 12 SNS

## Explanation of the use of the resources From month 25 to month 36 Partner No. 12 – SNS

Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period

Work Package	Item description	Amount	Explanations
WP1, WP2, WP3, WP5, WP8	Personnel costs	30.068,00	Fabrizio Lillo, Associate Professor, (PMs 1,51), Gerald Gurtner, Post doc researcher, (PMs 12)
WP2, WP8	Travel costs	3.429,00	Oxford (UK), 8-11 December 2013, Meeting with the Oxford unit on the integration of the agent based model, Gurtner Gerald / Oxford (UK), 9-19 March 2014, Meeting with the Oxford unit on the integration of the agent based model and V° CRISIS Workshop, Gurtner Gerald / Oxford (UK) 16-19 March 2014, V° CRISIS Workshop, Lillo Fabrizio / Milano (IT), 7-9 October 2014, CRISIS final conference , Lillo Fabrizio, Gurtner Gerald
TOTAL DIRECT COSTS		33.497,00	
INDIRECT COSTS		20.097,00	
TOTAL COSTS		53.594,00	

### Staff list and person months:

Name	Category	WP(s)	PMs
Fabrizio Lillo	Professor	WP2	1,51
Gurtner Gerald	Post doc	WP1, WP2, WP3, WP5, WP8	12
			<b>13,51</b>

### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Oxford (UK), 8-11 December 2013, Meeting with the Oxford unit on the integration of the agent based model, Gurtner Gerald
- Oxford (UK), 9-19 March 2014, Meeting with the Oxford unit on the integration of the agent based model and V° CRISIS Workshop, Gurtner Gerald
- Oxford (UK) 16-19 March 2014, V° CRISIS Workshop, Lillo Fabrizio / Milano (IT), 7-9 October 2014, CRISIS final conference , Lillo Fabrizio, Gurtner Gerald

### Effort(\*)

PARTNER		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	TOTAL
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	
SNS	New planned PMs	1,50	36,50	1,00	0,00	0,50	0,00	0,00	2,50	0,00	0,00	42,00
	Actual PMs - First report	0,50	12,50	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	13,00
	Actual PMs - Second report	0,50	13,94	0,00	0,00	0,00	0,00	0,00	0,50	0,00	0,00	14,94
	Actual PMs - Third report	0,50	10,00	0,51	0,00	0,50	0,00	0,00	2,00	0,00	0,00	13,51
	Actual PMs - TOTAL	1,50	36,44	0,51	0,00	0,50	0,00	0,00	2,50	0,00	0,00	41,45



## Budget/actual costs

12 SNS						
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)				
		Period 1	ADJUSTMENT TO PERIOD 1	Period 2	Period 3	TOTAL
Person Months	42,00	13,00	0,00	14,94	13,51	41,45
Personnel costs	103.844,00	39.092,00	0,00	36.274,00	30.068,00	105.434,00
Travel costs	9.000,00	5.510,00	850,00	4.410,00	3.429,00	14.199,00
Equipment costs	0,00	0,00	0,00	0,00	0,00	0,00
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00
Other costs	0,00	0,00	0,00	0,00	0,00	0,00
Audit costs	0,00	0,00	0,00	0,00	0,00	0,00
Subcontracting costs	0,00	0,00	0,00	0,00	0,00	0,00
Indirect costs	67.706,00	26.761,00	510,00	24.410,00	20.097,00	71.778,00
<b>TOTAL COSTS</b>	<b>180.550,00</b>	<b>71.363,00</b>	<b>1.360,00</b>	<b>65.094,00</b>	<b>53.594,00</b>	<b>191.411,00</b>
<b>EU CONTRIBUTION</b>	<b>135.412,00</b>	<b>53.522,00</b>	<b>1.200,00</b>	<b>48.820,00</b>	<b>40.195,00</b>	<b>142.537,00</b>

12 SNS\_end

# 13 UOXF

## Explanation of the use of the resources From month 25 to month 36 Partner No. 13 – UOXF

Table 3.2 Personnel, subcontracting and other major Direct cost items for Beneficiary for the period			
Work Package	Item description	Amount	Explanations
WP2, WP3, WP8	Personnel costs	268.290,00	Victor Spirin, Graduate student, (PMs 6,5) / Dr Daniel Fricke, Research (postdoc) / Fixed term employee, (PMs 10) / Dr Olaf Bochmann, Fixed term employee, (PMs 12) / Mr Christoph Aymanns, Graduate student, (PMs 9,5) / Dr Kieran Philips, Fixed term employee, (PMs 11) / Dr Ross Richardson, Fixed term employee, (PMs 10) / Dr David Pugh, Fixed term employee, (PMs 8,5) / Dr Daniel Tang, Fixed term employee, (PMs 6) / Anatolij Gelimson, Graduate student, (PMs 10)
WP2, WP3, WP8	Travel costs & other	58.309,00	<p>Paris (FR), 13 - 16 October 2013, IV<sup>th</sup> CRISIS workshop, Dooyne Farmer, Eric Beinhocker, Christoph Aymanns / Oxford (UK), 12 - 15 November 2013, Work with UOXF partner, Ermanno Catullo (from partner UNIVPM) / Brussels (BE), 25 - 27 November 2013, CRISIS Review, Dooyne Farmer, Eric Beinhocker</p> <p>Oxford (UK), 8 - 13th of December 2013, CRISIS - Meeting 9th to the 10th of December 2013, Kieran Phillips, David Pugh / Frankfurt (DE) 22 Feb - 2 March 2014, Project collaboration visit to Bundesbank, Daniel Fricke / Cambridge (UK), 27 - 28 March 2014, Presentation at conference in Cambridge, Christoph Aymanns / London (UK), 27 March 2014, Presentation at Bank of England - advisory board for the project, Christoph Aymanns, David Pugh, Kieran Phillips, Olaf Bochman, Ross Richardson, Victor Spirin / Santa Fe (US), Apr-14, Santa Fe Graduate Workshop in Computational Social Science: tuition fee for Christoph Aymanns / Oxford (UK), 06-apr-14, Presentation for visitors from Bank of England, Christoph Aymanns / London (UK), 24-apr-14, Meeting with Bank of England - advisory board for the project, Dooyne Farmer, Ross Richardson / Warwick (UK), 23-24 April 2014, FRONTIERS OF FINANCE CONF, UNI OF WARWICK, Daniel Fricke / Oxford (UK), 30 April - 1 May 2014, Interview with Dooyne Farmer, Daniel Tang / Frankfurt (UK), 04-10 May2014, Project collaboration visit to Bundesbank, Daniel Fricke / Oxford (UK), 15-20 June 2014, Technical meeting for the implementation of the shadow banking system in Java, Gerald Gurtner (SNS) / Lisbon (PT), 17-20 June 2014, IFABS LISBON CONFERENCE, Daniel Fricke / Daresbury Park (UK), 20 - 25 July 2014, Hartree Summer School in Daresbury Lab, Olaf Bochmann, Ross Richardson / London (UK), 23 July 2014, Bank of England meeting for CRISIS - advisory board for the project, Dooyne Farmer, Kieran Phillips / Wien (AT), 29 August - 31 October 2014, Research visit, Olaf Bochmann / London (UK), 14-15 October 2014, Bank of England AB meeting, Dooyne Farmer, Eric Beinhocker (12-17Oct), Stefan Thurner (from partner MUW), Susan Mousley (15 Oct) / Frankfurt (DE), 18-31 October 2014, Project collaboration visit to Bundesbank, Daniel Fricke / Milano (IT), 7 - 9 October 2014, Final CRISIS Workshop: A Complexity View of CRISIS, Dooyne Farmer, Eric Beinhocker, Christoph Aymanns, Olaf Bochmann, David Pugh, Daniel Tang, Ross Richardson, Victor Spirin / London, 8 - 9 January 2015, Final Review of CRISIS Project, Dooyne Farmer, Ross Richardson, Daniel Tang</p> <p>Other travel costs: Oxford (UK), 9 - 10 October 2013, ABM Workshop, Speakers: Herbert Dawid, Antoine Godin, Antoine Mandel, Tommaso Ciarli, Murat Yildizoglu, Andrea Roventini, Alberto Russo / London (UK), 16-19th March 2014, V<sup>th</sup> CRISIS Workshop, Milan Lovric / London (UK), 7 - 11th of December 2013, CRISIS - Meeting 9th to the 10th of December 2013, Luke Friendshuh, Milan Lovric / London (UK), 23 July 2014, Bank of England meeting for CRISIS - advisory board for the project, Milan Lovric / Oxford (UK), 1 June - 31 October 2014, Visit to Oxford for research/collaboration on CRISIS project, Milan Lovric / Milan (UK), 7 - 9 October 2014, Final CRISIS Workshop: A Complexity View of CRISIS, Guests: Luke Friendshuh, Matteo Richiardi, Milan Lovric, Nils Rochowicz, Ji Young Park / London (UK), 12-17 October 2014, Bank of England meeting for CRISIS - advisory board for the project Guests: Gonzalez-Hermosillo, Mrs Brenda, Paul Jenkins, William White, Mark Lee Buchanan / Oxford (UK), 16 October 2014, Presentation to researchers at INET Oxford - title "Transmission of Global Liquidity Through Capital Flows" and discuss INET findings with Eric Beinhocker and Dooyne Farmer, Gonzalez-Hermosillo, Mrs Brenda /</p> <p>ABM Workshop (Oxford, 10-11 October 2013) – ABM platform meeting – Dinner for participants, Dooyne Farmer and costs for participants transportation / Oxford (UK) 9 December 2013 CRISIS Integration meeting, dinner for participants Dooyne Farmer / Oxford (UK), 17-18 March 2014, V<sup>th</sup> CRISIS Workshop, Lunches and Dinner, Dooyne Farmer / London (UK), 14-15 October 2014 AB Meeting @ BoE</p>
WP8	Other costs	10.732,00	Usage of ARC Advanced Research Computing (ARC) @University of Oxford for CRISIS project
WP8	Other costs	2.023,00	London (UK), 14-15 October 2014 AB Meeting @ BoE - refreshments, lunch and dinner
WP8	Other costs	1.149,00	London (UK), 14-15 October 2014 AB Meeting @ BoE - Event packs
WP8	Other costs	662,00	Oxford (UK), 9 December 2013 CRISIS Integration meeting
WP8	Other costs	241,00	Submission fee for Journal of Banking and Finance
WP9	Travel costs		London (UK), 8 - 9 January 2015, Final Review of CRISIS Project, Dooyne Farmer, Ross Richardson, Daniel Tang
WP9	Subcontracting	2.497,00	Dissemination Activities for CRISIS website
WP9	Subcontracting	3.138,00	Design of website.
WP9	Subcontracting	2.641,00	Audit certificate
TOTAL DIRECT COSTS		349.682,00	
INDIRECT COSTS		204.842,00	
TOTAL COSTS		554.524,00	

### Staff list and person months:

Name	Category	WP(s)	PMs
Doyne Farmer (*)	Full professor	WP2, WP8	(*)
Eric Beinhocker (*)	Executive Director Inet@OXFORD	WP1, WP9	(*)
Victor Spirin	Graduate student	WP8	6,50
Daniel Fricke	Research (postdoc) / Fixed term employee	WP2	10,00
Olaf Bochmann	Fixed term employee	20% WP2, 80% WP8	12,00
Christoph Aymanns	Graduate student	WP2	9,50
Kieran Philips	Fixed term employee	10% WP3, 90% WP8	11,00
Ross Richardson	Fixed term employee	WP8	10,00
David Pugh	Fixed term employee	80% WP2, 20% WP8	8,50
Daniel Tang	Fixed term employee	80% WP2, 20% WP8	6,00
Anatolij Gelimson	Graduate student		10,00
			<b>83,50</b>

(\*) UOXF will not claim the personnel costs related to their leaders, although they will actively collaborate in the project, while they will claim the travel costs related to these persons as described in the DoW.

### Project meetings and travels during the reporting period (date, venue, title of meeting, persons involved)

- Paris (FR), 13 - 16 October 2013, IV° CRISIS workshop, Doyne Farmer, Eric Beinhocker, Christoph Aymanns
- Oxford (UK), 12 - 15 November 2013, Work with UOXF partner, Ermanno Catullo (from partner UNIVPM)
- Brussels (BE), 25 - 27 November 2013, CRISIS Review, Doyne Farmer, Eric Beinhocker
- Oxford (UK), 8 - 13th of December 2013, CRISIS - Meeting 9th to the 10th of December 2013, Kieran Phillips, David Pugh
- Frankfurt (DE) 22 Feb - 2 March 2014, Project collaboration visit to Bundesbank, Daniel Fricke
- Cambridge (UK), 27 - 28 March 2014, Presentation at conference in Cambridge, Christoph Aymanns
- London (UK), 27 March 2014, Presentation at Bank of England - advisory board for the project, Christoph Aymanns, David Pugh, Kieran Philips, Olaf Bochman, Ross Richardson, Victor Spirin
- Santa Fe (US), Apr-14, Santa Fe Graduate Workshop in Computational Social Science: tuition fee for Christoph Aymanns
- Oxford (UK), 06-apr-14, Presentation for visitors from Bank of England, Christoph Aymanns
- London (UK), 24-apr-14, Meeting with Bank of England - advisory board for the project, Doyne Farmer, Ross Richardson
- Warwick (UK), 23-24 April 2014, FRONTIERS OF FINANCE CONF, UNI OF WARWICK, Daniel Fricke
- Oxford (UK), 30 April - 1 May 2014, Interview with Doyne Farmer, Daniel Tang
- Frankfurt (UK), 04-10 May2014, Project collaboration visit to Bundesbank , Daniel Fricke
- Oxford (UK), 15-20 June 2014, Technical meeting for the implementation of the shadow banking system in Java, Gerald Gurtner (SNS)
- Lisbon (PT), 17-20 June 2014, IFABS LISBON CONFERENCE, Daniel Fricke
- Daresbury Park (UK), 20 - 25 July 2014, Hartree Summer School in Daresbury Lab, Olaf Bochmann, Ross Richardson
- London (UK), 23 July 2014, Bank of England meeting for CRISIS - advisory board for the project, Doyne Farmer, Kieran Philips
- Wien (AT), 29 August - 31 October 2014, Research visit, Olaf Bochmann
- London (UK), 14-15 October 2014, Bank of England AB meeting, Doyne Farmer, Eric Beinhocker (12-17Oct), Stefan Thurner (from partner MUW), Susan Mousley (15 Oct)
- Frankfurt (DE), 18-31 October 2014, Project collaboration visit to Bundesbank, Daniel Fricke
- Milano (IT), 7 - 9 October 2014, Final CRISIS Workshop: A Complexity View of CRISIS, Doyne Farmer, Eric Beinhocker, Christoph Aymanns, Olaf Bochmann, David Pugh, Daniel Tang, Ross Richardson, Victor Spirin

- London, 8 - 9 January 2015, Final Review of CRISIS Project, Doyne Farmer, Ross Richardson, Daniel Tang

#### Other travel costs (AB and SWG members):

- Oxford (UK), 9 - 10 October 2013, ABM Workshop, Speakers: Herbert Dawid, Antoine Godin, Antoine Mandel, Tommaso Ciarli, Murat Yildizoglov, Andrea Roventini, Alberto Russo
- London (UK), 16-19th March 2014, V° CRISIS Workshop, Milan Lovric
- London (UK), 7 - 11th of December 2013, CRISIS - Meeting 9th to the 10th of December 2013, Luke Friendshuh, Milan Lovric
- London (UK), 23 July 2014, Bank of England meeting for CRISIS - advisory board for the project, Milan Lovric
- Oxford (UK), 1 June - 31 October 2014, Visit to Oxford for research/collaboration on CRISIS project, Milan Lovric
- Milan (UK), 7 - 9 October 2014, Final CRISIS Workshop: A Complexity View of CRISIS, Guests: Luke Friendshuh, Matteo Richiardi, Milan Lovric, Nils Rochowicz, Ji Young Park
- London (UK), 12-17 October 2014, Bank of England meeting for CRISIS - advisory board for the project Guests: Gonzalez-Hermosillo, Mrs Brenda, Paul Jenkins, William White, Mark Lee Buchanan
- Oxford (UK), 16 October 2014, Presentation to researchers at INET Oxford - title " Transmission of Global Liquidity Through Capital Flows" and discuss INET findings with Eric Beinhocker and Doyne Farmer, Gonzalez-Hermosillo, Mrs Brenda

#### Events organization

- ABM Workshop (Oxford, 10-11 October 2013) – ABM platform meeting – Dinner for participants, Doyne Farmer and costs for participants transportation
- Oxford (UK), 9 December 2013 CRISIS Integration meeting, dinner for participants Doyne Farmer
- Oxford (UK), 17-18 March 2014, V° CRISIS Workshop, Lunches and Dinner, Doyne Farmer
- London (UK), 14-15 October 2014, AB Meeting @ Bank of England

#### Effort(\*)

		RTD	RTD	RTD	RTD	RTD	RTD	RTD	RTD	MGT	MGT	
PARTNER		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	TOTAL
UOXF	New planned PMs	2,70	18,00	1,50	1,50	1,50	1,50	1,00	72,60	1,00	0,00	101,30
	Actual PMs - First report	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	4,00
	Actual PMs - Second report	0,00	1,00	0,00	0,00	0,00	0,00	0,00	12,00	0,00	0,00	13,00
	Actual PMs - Third report	0,00	24,80	1,10	0,00	0,00	0,00	0,00	57,60	0,00	0,00	83,50
	Actual PMs - TOTAL	0,00	25,80	1,10	0,00	0,00	0,00	0,00	73,60	0,00	0,00	100,50

(\*) UOXF will not claim the personnel costs related to their leaders, although they will actively collaborate in the project, while they will claim the travel costs related to these persons as described in the DoW. The same is for person months used by two leaders.

#### Budget/actual costs

13 UOXF						
Type of expenditure (as foreseen by the budget)	BUDGET	Actual costs (Eur)				
		Period 1	Period 2	Period 3	ADJUSTMENT PERIOD 3	TOTAL
Person Months	101,30	4,00	13,00	100,50	0,00	117,50
Personnel costs	410.199,00	18.433,00	58.498,00	268.290,00	0,00	345.221,00
Travel costs	38.716,00	0,00	11.020,00	58.309,00	391,00	69.329,00
Equipment costs	0,00	0,00	0,00	0,00	0,00	0,00
Consumables costs	0,00	0,00	0,00	0,00	0,00	0,00
Other costs	12.842,00	0,00	4.048,00	14.807,00	0,00	18.855,00
Audit costs	4.200,00	0,00	0,00	2.641,00	0,00	2.641,00
Subcontracting costs	41.758,00	0,00	14.907,00	5.635,00	0,00	20.542,00
Indirect costs	277.054,00	11.059,00	44.139,00	204.842,00	234,00	260.040,00
TOTAL COSTS	784.769,00	29.492,00	132.612,00	554.524,00	625,00	716.628,00
EU CONTRIBUTION	595.835,00	22.119,00	99.459,00	417.962,00	625,00	539.540,00

13 UOXF