



COINVEST

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Dissemination level

PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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All materials relating to this project such as data, meetings, publications, working papers etc. are all to be found on www.coinvest.org.uk.

Summaries of our papers and scientific findings are to be found in the abstract of each paper and the covering notes of the deliverables. Thus summaries here are kept very short and the interested reader can find more details in these sources, all of which are on www.coinvest.org.uk

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1. ABOUT THE COINVEST PROJECT, www.coinvest.org.uk

The COINVEST project, COINVEST- Competitiveness, Innovation and Intangible Investments in Europe was a 30 month collaborative research project funded under the European Commission Seventh Framework Programme (Theme 9, Socio-economic Sciences and Humanities). It was co-ordinated by Imperial College Business School London, under the leadership of the principal investigator Professor Jonathan Haskel.

The project aimed to understand the contribution of intangible investments to innovation, competitiveness, growth and productivity in Europe. Researchers, experts in the new field of

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intangible investments in economics came together to examine whether Europe has been performing very well in the knowledge economy. It was necessary to do this, because most intangible investments are “hidden” in national accounts and micro data. In national accounts this is because they are treated as intermediate inputs and so do not show up as part of investment either in GDP or as creating an asset that might account for changes in GDP. Similarly, intangibles are often not reported in micro work or are so reported in only an occasional way across countries. Researchers in the UK, Belgium, Bulgaria, France, Germany, Portugal and Sweden came together to investigate both micro and macro (market economy and industry) data in these countries.

Our lead investigator for Bulgaria died suddenly near the end of this project. We mourn his passing and thank co-investigators who took over from him.

What are intangible investments and how are these defined?

An intangible asset or intangible investment is defined as identifiable non-monetary assets that cannot be seen, touched or physically measured, which are created through time and/or effort and produce an enduring knowledge asset that provides a flow of knowledge services (for example, a databank). Some knowledge assets are protected by formal means e.g. trade secrets (e.g., customer lists), copyrights, patents, and trademarks. Others are not, such as know-how, knowledge, collaboration activities, leverage activities, and structural activities.

2. AIMS OF THE PROJECT

Work Package 1: Scoping of the data

Work package 1 was concerned with the scoping of the available data on intangible assets for our countries and other countries too. It was also tasked with developing guidelines for harmonization of the data across countries with the aim of establishing consistent definitions and applying the data to all other Member States and Associated Countries. So, for example, the meeting in May 2009 was at the OECD whom also have an interest in this work. During the COINVEST Policy Maker briefing, Sofia,

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July 13th 2010, methods were shared with the Eastern European delegates on how to adopt the guidelines for future use.

Work Package 2: Investment in Intangible Assets in the EU

We planned to develop estimates for the most recent year possible of investment in intangible assets by each country and to compare and contrast countries to see in what intangible assets areas they invest most. Each country in the Consortium developed estimates for as long a time-series as possible of investment in intangible assets by each country. The results can be seen in the papers under WP3 (D3-D9). In these papers, we compared and contrasted countries to see in what intangible assets areas they invest most and how this has changed. The results suggested both significant investment in intangibles and a significant increase in such investment over the period. In these deliverables, we also generated the time series to then fit into the growth accounting programme.

Within Country Analyses for whole economy

We used the data collected above to examine within country output and how the capitalisation of intangibles affects the calculation of output. We also used the data collected above to explain their contributions to within-country output, and how the inclusion of intangibles affects the explanation of how country productivity grows. These results were compared and contrast across countries, UK, Belgium, Bulgaria, France, Germany, Portugal and Sweden. Additional results have also been evaluated by The Conference Board Europe for Spain, Italy and Greece. This involved, as well as new data, a new programme to generate the estimates which we have created.

Cross Country Analysis

In Workpackage 5, we analysed cross-country productivity levels and the proximate reasons for their differences using the new output levels from the capitalisation of intangibles and the new input levels from the additional intangible asset input. Software in STATA was written to establish relative productivity calculations. Whilst the program can be applied to all countries, due to time and data availability we have carried out the analysis for the US and UK as pilot for future work.

Exploration of micro data

The results of these can be seen in Deliverable 12 and Deliverable 13. We analysed the micro-data within and across countries, depending on the sources in each country to shed light on a variety of

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assumptions underlying the macro work and to see if a similar exercise on the micro-data gives consistent answers with the macro data. In the reports, we tried to determine the impact of intangible expenditures on TFP, looked at accounting data to see if valuing intangibles helped account for the market and book value gap and developed a systematic questionnaire to help form a quantitative assessment of what companies spend on intangible asset building.

3. PARTNERS INVOLVED

Imperial College of Science, Technology and Medicine, UK, www.imperial.ac.uk

The Conference Board in Europe, Belgium, www.conference-board.org

Instituto Superior Técnico Lisboa, Portugal, www.ist.utl.pt/

Institutet för Näringslivsforskning, Sweden, www.ifn.se

Club Ekonomika 2000, Bulgaria, www.club2000.org

Zentrum fuer Europäische Wirtschaftsforschung GmbH, Germany, www.zew.de

GRECSTA/INSEE, France, www.crest.fr/grecsta, www.insee.fr

Queen Mary and Westfield College, University of London, UK, www.qmul.ac.uk

4. RESEARCH CARRIED OUT AND MAIN FINDINGS

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We believe we have produced a number of innovations on the macro and micro side.

1. Macro

We believe we have produced the first:

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- comparable study of the effects of intangibles on productivity and growth across different countries at macro level by extending the Corrado et al method with cross-country data with specific new data drawn from National Accounts and other sources, testing different approaches and drawing on information from within statistical agencies, with accompanying software
- comparable study of the effects of intangibles on productivity and growth across different countries at industry level (and the industry level studies outside of Japan for any country, with accompanying software)
- cross-country analysis of effect of institutions and regulations on intangible investment
- cross-country work on design and financial services using the OECD software method for the UK, Sweden and France.

Micro

- study using accounting data of the extent to which intangibles can account for the market/book value puzzle for a group of German and US firms
- comparison of German and Portuguese innovation systems.
- for the UK, micro-level survey specifically for spending on the CHS intangible assets range
- analysis, after Israel, of life-lengths for R&D intangible assets: but the first analysis of life lengths for range of intangible assets for the UK

Our work and findings can be arranged around our Work Packages as follows.

1. *To find out what data are available on intangible assets in different countries (Work Package 1, Macro data)*

This deliverable was an initial scoping exercise to survey data availability in different countries. More work was needed need to do to see what could be found at the industry level and how comparable such data are.

2. *To find out what intangible assets EU economies invest in and how much they spend (Work Package 2, Macro data)*

Workpackage 2 involved co-ordinating the collection of data on the categories of intangible assets set out by Corrado, Hulten and Sichel (2005, 9). We looked at comparability of data, depreciation methods for intangibles, the measurement of the output of those items, etc., deserve more research and

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harmonization. Based on available data, the approach was extended to an industry level, in the first instance between manufacturing and market services, with a more detailed disaggregation wherever possible. All this has allowed the first step of making a cross-country comparison, for the most recent year available, of investing in intangible assets.

3. *To measure the effects within each country of intangible asset expenditure on economic performance (Work Package 3 and 4, Macro data, see papers in deliverable 10 and 11)*

We looked at the consequence for a number of key variables. First, we looked to see the consequences for GDP. GDP potentially rises since more of what is currently regarded as intermediate spending is investment. Second, we also looked at the consequences for investment, where we expect the investment share to increase. Third, we looked too at the labour share, which will fall since the extra GDP goes to compensating the extra capital in the economy. Fourth, we looked at the consequences for labour productivity growth (LPG) and total factor productivity growth (MFPG). The level of labour productivity rises, but LPG only rises if the level of GDP rises increasingly over the period. The level of MFP falls, since there is an extra input in the economy, namely an intangible capital stock, though it is not clear if MFP growth (MFPG) rises or not, since we need to see how much the change in the intangible capital stock contributed to growth and productivity growth along with other inputs. Extending the growth accounting framework in order to include intangible capital, we found that LPG mostly rose and TFP fell. This was particularly the case in the late 1990s where many economies were investing strongly in intangible investment, with the internet boom, which is omitted in standard national accounting conventions.

We also looked at industry findings. This was possible for Germany, Sweden and UK. Some information could be presented on the distribution of intangible investment across sectors for France; we refer to D10 for further details.

Our overall comparative findings are as follows (as above, see the covering report for deliverable D10 and the papers therein for more details):

- a) At an aggregate level, the UK and Sweden are relatively intangible intensive, at around 14% of market sector value added (excluding real estate, including intangibles) in 2005. Germany, France and Portugal are just over 10%. Sweden and Germany are relative high investors in R&D, whilst the UK invests relatively heavily in “economic competencies”

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- b) Intangible investment in the UK is 30% in manufacturing and 70% in services. For Germany it is the opposite and in Sweden/France, it is about 50%, 50%.
- c) In manufacturing, intangible investment exceeds tangibles in all countries. In finance and business services the reverse is the case, but the UK is a particularly intensive intangible spender in these sectors.
- d) For growth accounting, industry by industry we have the following:
 - i. Manufacturing. Germany has the highest LPG, followed by Sweden and the UK. The key drivers of this high LPG in Germany are intermediate deepening, with TFP low and the use of intangibles similar to the UK. Sweden has much higher deepening from intangibles, whilst the UK has about the same use of intangibles as Germany but much higher TFP. The high contribution of intangibles in Sweden is consistent with their high R&D intensity. The high TFP in the UK is consistent with the UK having relatively low technology manufacturing that might benefit disproportionately from TFP spillovers.
 - ii. Retailing. Sweden has the highest LPG, driven by higher TFP and somewhat higher use of intangibles: the contribution of intangibles and TFP is very similar in both the UK and Germany.
 - iii. Financial and business services. The notable economy here is the UK, with a lead in TFP and intangible contributions, followed by Sweden.

Finally, we explored policy. In deliverable 11, the paper by Hao, with Haskel, rather than taking investment in intangibles as a given looks at the correlation between the share of intangible investment in GDP for 16 countries from 2001-2004 with various measures of product and employment market regulations. The main finding is that intangible investment (as a proportion of GDP) is negatively and significantly correlated with all variables of product market regulation and employment market

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regulation. Thus countries with regulation suffer low intangible investment levels. As the paper discusses, if causal, this is an important finding for policy.

4. *To see how comparative cross-country economic performance is affected by intangible investment (Work Package 5, Macro data).*

The idea was as follows. If intangible investment is counted as such then it raises GDP. This then potentially changes cross-country productivity and performance comparisons. Of course, if all countries invest a similar fraction of GDP in intangibles then relative rankings will not change, but we need to undertake the work to find this out. We similarly wanted to compare cross-country MFP which will change with the addition of intangibles. We looked at comparisons of GDP investment across countries by intangible asset and the impact on GDP levels for the UK and USA.

5. *To relate our findings to micro data analysis (Work Package 7, Micro data, Deliverable 12 to 13)*

This macro data work can be complemented by micro analysis. Thus our final step, we have examined the effects of intangible investment in firms and between firm differences in such investment. The major problem here is that the official statistics hardly collect information on intangibles systematically and hence few firms record such investments. Thus In some work we have used the EU Community Innovation Survey which does ask a number of firm-level questions about a range of intangible asset spending by firms (in the UK, for example, spending on training, branding, design etc.). We were able to do this for Germany and Portugal where we had good access to the micro data and the spending questions are relatively well answered. We did look in detail at the UK and found that the questions were generally not well answered. We therefore undertook our own questionnaire and were able to find different data and produces concrete recommendations for other questionnaires. The Conference Board looked at knowledge-intensive businesses, in particularly pharmaceuticals, comparing the results across countries and looking to see how much the market/book ratio was accounted for by intangible assets.

Thus some of our findings in the bundle of Deliverable 12-13 papers, were as follows.

On the accounting data, Hulten et al uses accounting data to explore if intangibles, capitalised in the way in macro data, can help understand the book/value puzzle and finds they can.

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On the micro CIS-type data, German and Portuguese data was used to compare intangibles investment across hi-tech environments and IPR regimes, as well as to use CIS data to explore the relation with productivity, where this relationship was found to hold.

Finally, regarding measurement issues we have done quite a lot of work. We have piloted and implemented an extended R&D survey to ask about spending and life lengths. We find support for intangibles lasting longer than a year, thus supporting the capitalisation notion. And we have support too for the depreciation rates typically assumed. We compare spending with other questionnaires and concluded with suggestions for improving them in particular pointing respondents to own account spending. We compared UK with US results and found high intensity of intangible spending in small firms, especially start ups. This suggests that in understanding small firms it is particularly important to understand their intangible assets. Finally, we looked at new price indices for R&D and found that R&D prices have been falling very substantially in the UK, as opposed to the conventional method which assumes they have been rising. We have been invited by the Chief Economists at BEA and BLS to present this paper to their staff, following a presentation at the NBER Summer Institute, 2010.

5. ENGAGEMENT AND DISSEMINATION

All details are on www.coinvest.org.uk, follow the right panel for meetings and presentations. Among other things:

We have completed all eight promised meetings, and co-organised 3 other meetings with COST, including the 2010 CAED meeting in London (with 179 attendees over three days).

The OECD has adopted COINVEST data and methods for its Innovation Strategy.

We have held meetings joint with OECD to ensure dissemination of the work and briefed the OECD, EU, UK Department of Business Innovation and Skills, UK Office of National Statistics and US Bureau of Economic Analysis.

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COINVEST work has been written up in a column in the Financial Times and Economist.

1. COINVEST work was directly quoted by , David Willetts, Minister of State for Universities and Science, in a speech called “Science, Innovation and the Economy”, 9 Jul 2010, Royal Institution, London. This shows directly that COINVEST work has influenced policy. He said “*I was particularly interested to read the recent Imperial College Discussion Paper by Jonathan Haskel and Gavin Wallis, “Public support for Innovation, Intangible investment and Productivity Growth in the UK Market Sector”. It shows particularly strong spillover benefits from R&D spend on research councils. It shows a positive return from other forms of R&D too, but the spillover benefits seem to be greatest from the research councils. This is interesting evidence that research council spend is doing the job it should be doing – generating wider benefits across the economy as a whole.*

These arguments about clusters, about absorptive capacity and the importance of basic research have already led me to a number of conclusions about the role of government in supporting science and innovation. I can't talk about levels of investment – that must await the CSR – but I do want to share my thinking on policy direction.”

(<http://www.bis.gov.uk/news/speeches/david-willetts-science-innovation-and-the-economy>)

A) Dissemination

Partner	Description	Date
Miss Annarosa Pesole (QMUL)	Presentation of the COINVEST project at the EPROS, EUROSTAT conference in Luxembourg.	November 2008
Professor Jonathan Haskel, (QMUL)	Presentation of the COINVEST project, Sheffield, UK	October 2008
Catherine Edlin (QMUL)	COINVEST project, FP7 networking event, Budapest	December 2008
Dr Harald Edquist, (IFN)	Dr Harald Edquist informed Andrew Wyckoff , the Head of the Economic Analysis and Statistics (EAS) Division of the Directorate for Science, Technology and Industry at the OECD about the COINVEST project.	
Prof Jonathan Haskel, (Imperial College)	'How can the UK achieve sustainable economic growth in the future? This event was organised by The Strategy Unit and the Department for Business, Innovation and Skills, UK Cabinet Office.	
Prof Jonathan Haskel	Jonathan Haskel has surveyed a large group of companies	

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	including those in the financial services sector piloting the innovation survey on intangibles. 2000 companies are taking part in the questionnaire. Jonathan Haskel presented the results to the NESTA group.	
Prof Jonathan Haskel (Imperial College)	' A taxpayer punt, a venture for fund for innovation',	
Prof Jonathan Haskel (Imperial College)	Options for improving medium to long-run growth, Professor Jonathan Haskel, HMT meeting, March 12th 2010. Fiscal Consolidation Seminar, presentation made by Jonathan Haskel	March 2010
Prof Jonathan Haskel (Imperial College)	Does innovation produce economic growth? Presentation by Professor Jonathan Haskel Joint British Academy and Economic and Social Research Council Event, 16th March	March 2010
Prof Jonathan Haskel (Imperial College)	"Public Support for Innovation, Intangible Investment and Productivity Growth in the UK Market Sector", Jonathan Haskel et al was recently listed on SSRN's Top Ten download list for ERN: Infrastructures; Other Public Investment & Capital Stock (Topic), ERPN: International (Topic) and ERPN: Public Policy (Innovation) (Topic).	
Dr Annarosa Pesole (Imperial College)	Results of the COINVEST project, presented by Dr Annarosa Pesole, Imperial College London, at the 'Results of the innovation-related projects from the Socio-economic Sciences and Humanities Programme (SSH)' for EU-2020 strategy, January 28th 2010, Brussels.	January 2010
Prof Jonathan Haskel (Imperial College)	Productivity and Innovation in UK Financial Services: An Intangible Asset Approach, Professor Jonathan Haskel and Dr Annarosa Pesole, presented by Jonathan Haskel at the workshop on Innovation and firm performance: are we measuring them correctly? Organized by Nottingham University Business School, February 3rd 2010	February 2010
Prof Jonathan Haskel (Imperial College London)	Presentation of 'EUKLEMS' cluster of projects in the context of the exploitation of results for the impact assessment of FPs 6 and 7 and the Innovation Union Communication	
Dr Janet Hao (The Conference Board)	Hao, Janet Xiaohui, Vlad Manole and Bart van Ark (2009): Intangible Capital and Growth – an International Comparison	
Dr Charles Hulten (The Conference Board)	Hulten, Charles, Janet Xiaohui Hao, and Kirsten Jaeger (2009): Intangible Capital and the Valuation of Companies: A Comparison of German and U.S. Corporations	
Dr Janet Hao (The Conference Board)	Conference on "R&D and the financing of innovation in Europe" European Investment Bank, Luxembourg 22 October 2009.	01/10/09
Dr Carol Corrado (The Conference Board)	Intangibles, Productivity, and Growth: Current Projects Potpourr, OECD/COINVEST conference, June 2009	01/06/09
Dr Kirsten Jaeger	What is a Company Really Worth? Intangible Capital and the "Market to Book Value" Puzzle in Germany	
Dr Pedro Faria and Dr Francisco Lima (IST)	Faria, P. and F. Lima (2009), Firm Decision on Innovation Types: Evidence on Product, Process and	01/08/09

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	Organizational Innovation, Academy of Management 2009 Annual Meeting, Chicago, US, August.	
Dr Pedro Faria and Dr Francisco Lima (IST)	Faria, P. and W. Sofka (2009), Formal and Strategic Appropriately Strategies of Multinational Firms - A Cross Country Comparison, Academy of Management 2009 Annual Meeting, Chicago, US, August.	01/08/09
Dr Pedro Faria and Dr Francisco Lima (IST)	Faria, P. and F. Lima (2009), Firm Decision on Innovation Types: Evidence on Product, Process and Organizational Innovation, DRUID Society Summer Conference 2009 on Innovation, Strategy and Knowledge, Copenhagen, Denmark, June.	01/06/09
Dr Pedro Faria (IST) and Dr Wolfgang Sofka (Zew)	Faria, P. and W. Sofka (2009), Knowledge Protection Capabilities and their Effects on Knowledge Creation and Exploitation in High- and Low-tech Environments, Advancing the Study of Innovation and Globalization in Organizations (ASIGO) Conference, Nuremberg, Germany, May.	01/05/09
Dr Pedro Faria and Dr Francisco Lima (IST)	Faria, P. and F. Lima (2009), Firm Decision on Innovation Types Evidence on Product, Process and Organizational Innovation, 7th Annual International Industrial Organization Conference, Boston, USA. - Mendonça, J, R. Baptista, and F. Lima (2009), "Differentiating the Role Played by Founders' Human Capital in the Performance of Firms", 29th Annual International Conference Strategic Management Society (SMS), Washington, US, October 11-14.	01/10/09
Dr Pedro Faria and Dr Francisco Lima (IST)	Faria, P. and F. Lima (2009), Firm Decision on Innovation Types Evidence on Product, Process and Organizational Innovation, 7th Annual International Industrial Organization Conference, Boston, USA.	
Dr J Mendonca, Dr R Baptista and Dr F Lima (IST)	Mendonça, J, R. Baptista, and F. Lima (2009), "Differentiating the Role Played by Founders' Human Capital in the Performance of Firms", 29th Annual International Conference Strategic Management Society (SMS), Washington, US, October 11-14.	01/10/09
Dr Wolfgang Sofka (ZEW) and Dr Pedro Faria (IST)	Sofka, Wolfgang and Pedro Faria (2010), "Knowledge Protection Capabilities and their Effects on Knowledge Creation and Exploitation in High and Low-tech Environments", COINVEST Conference -Intangible Investments at Macro and Micro Levels and Their Role in Innovation, Competitiveness and Growth, Lisbon, IST, March 18-19.	01/03/10
Dr Francisco Lima (IST)	Lima, Francisco (2010) "Intangible investments in Portugal," COINVEST Conference - Intangible Investments at Macro and Micro Levels and Their Role in Innovation, Competitiveness and Growth, Lisbon, IST, March 18-19. Included also the presentation of "The value of training" co-authored with Susana Neves from Statistics Portugal.	01/03/10
Dr Harald Edquist (IFN)	Harald Edquist attended the 2009 EIB Conference in Economics & Finance "R&D and the financing of innovation in Europe", Luxembourg, October 22, 2009.	01/10/09
Dr Harald Edquist and	Harald Edquist and Henrik Jordahl presented the	01/10/09

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Dr Henrik Jordahl (IFN)	COINVEST project and discussed intangibles in the National Accounts at Tjänstesektorn i Samverkan [Partnership in the service sector], Stockholm, October 8, 2009. 13	
Dr Harald Edquist (IFN)	Harald Edquist presented his report “Så skapas kunskapsintensiv tjänstetillväxt” (see Papers/publications produced above) at the Almedalen Week (see http://en.wikipedia.org/wiki/Almedalen_Week), Visby, June 30, 2009.	01/06/09
Dr Harald Edquist (IFN)	Harald Edquist presented Swedish time series on intangibles at the joint COINVEST-OECD conference at the OECD, Paris, June 2, 2009.	01/06/09
Dr Harald Edquist (IFN)	Harald Edquist presented his IFN Working Paper No. 785 “How much does Sweden invest in intangible assets?” at the The 11th Annual SNEE European Integration Conference, Mölle, May 2009.	01/05/09
Dr Harald Edquist (IFN)	Policy seminar on intangible investment, IFN, Stockholm, April 2, 2009, Harald Edquist presented his IFN Working Paper No. 785 “How much does Sweden invest in intangible assets?”, (see http://www.ifn.se/web/Kan_man_alltid_ta_pa_en_investering.aspx)	01/04/09
Dr Harald Edquist and Dr Henrik Jordahl (IFN)	Interview with Harald Edquist and Henrik Jordahl on intangibles in the National Accounts to appear in Dagens Handel (published by The Swedish Trade Federation).”SCB underskattar tjänstesektorn” [Statistics Sweden underestimates the service sector], Op-ed by Harald Edquist and Henrik Jordahl in Svenska Dagbladet (daily national newspaper) September 23, 2009. Report in Swedish: Report in Swedish: “Hur viktiga är immateriella investeringar i tjänstesektorn och tillverkningsindustrin för näringslivets tillväxt?” (How important are intangible investments in the service sector and manufacturing for business sector growth?), policy report, Almega [Employer and trade organisation for the Swedish service sector].	01/09/09
Dr Harald Edquist (IFN)	COINVEST conference “Intangible investment at the macro and micro levels and their role for innovation, competitiveness and growth”, Lisbon	01/03/10
Dr Lubomir Dimitrov, Dr, Todor Gradev, Dr Spartak Keremidchiev (Club Ekonomika)	Lubomir Dimitrov, Todor Gradev, Spartak Keremidchiev, “Investment in intangible assets: the case of Bulgaria, 1991-2006”	
Dr Lubomir Dimitrov and Dr Todor Gradev (Club Ekonomika)	Lubomir Dimitrov and Todor Gradev, “Productivity, Technology Ladder and Optimal Product Mix” (preliminary)	
Dr Lubomir Dimitrov and Dr Todor Gradev (Club Ekonomika)	The paper “Productivity, Technology Ladder and Optimal Product Mix” by Dimitrov & Gradev was presented at the Annual Conference of the European Economic Association, Barcelona, August 2009.	01/08/09
Dr Lubomir Dimitrov	A shorter version of the paper with main results of time-	

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and Dr Todor Gradev (Club Ekonomika)	series estimates (Deliverable 5) to be submitted to the popular Bulgarian journal "Economica"	
Dr Lubomir Dimitrov and Dr Todor Gradev (Club Ekonomika)	Based on the macro-results for Bulgaria to be submitted to the academic journal of the Bulgarian Academy of Sciences "Economic Thought".	
Dr Spartak Keremidchiev and Dr Lyubomit Dimitrov (Club Ekonomika)	Spartak Keremidchiev and Lyubomit Dimitrov attended the conference: A COINVEST Conference: Intangible Investments at Macro and Micro Levels and Their Role in Innovation, Competitiveness and Growth, 18-19 March 2010, Lisbon, Portugal	01/03/10
Dr Dirk Crass (ZEW)	Presentation "Do Intangibles Enhance Productivity Growth? Microeconomic Evidence from Germany" at COINVEST Conference "Intangible Investments at Macro and Micro Levels and Their Role in Innovation, Competitiveness and Growth", Lisboa, March 19th 2010.	01/03/10
Dr Bettina Peters (ZEW)	Presentation "Do Intangibles Enhance Productivity Growth? Microeconomic Evidence from Germany" at COST MC Meeting and Workshop on Firm-level Micro Data, Amsterdam, May 28th 2010.	01/05/10
Dr Bettina Peters (ZEW)	The results of the ZEW (German) micro data analysis will be published as ZEW Discussion Paper "Do Intangibles Enhance Productivity Growth? Microeconomic Evidence from Germany" and will be submitted to a scientific journal.	
Dr Vincent Delbecque (INSEE/GRECSTA)	12th May, Vincent Delbecque presented the Coinvest project and preliminary results at the Centre d'Etudes pour l'Emploi (Paris)	01/05/10
Dr Vincent Delbecque (INSEE/GRECSTA)	28th and 29th May, Vincent Delbecque presented the Coinvest project and preliminary results at the IC5 Conference organised by the World Bank (Paris)	01/05/10
Dr Jacques Mairesse (INSEE/GRECSTA)	Jacques Mairesse presented an analysis on "Comparing the Contribution of R&D and ICT in the Growth Accounting Framework : Issues and Orders of Magnitude"	
Dr Jacques Mairesse (INSEE/GRECSTA)	2nd June Jacques Mairesse presented an analysis on "Comparing the Contribution of R&D and ICT in the Growth Accounting Framework : Issues and Orders of Magnitude" at the joint COINVEST/OECD conference	01/06/09
(INSEE/GRECSTA)	31st French COINVEST members submitted a paper for the IARIW Conference taking place in St Gallen in August 2010.	01/08/10
Dr Vincent Delbecque (INSEE/GRECSTA)	7th and 8th September, Vincent Delbecque presented results from WP2 and WP3 at the FIRB-RISC Conference at Bocconi University (Milan)	01/09/10
(INSEE/GRECSTA)	26th November 2009, French COINVEST members presented their work at the National Accounting seminar at the INSEE.	01/11/09
(INSEE/GRECSTA)	French COINVEST members, jointly with other COINVEST members, presented the project results at the IARIW conference in August 2010.	01/08/10

All of the corresponding papers can be accessed via our website,

<http://www.coinvest.org.uk/bin/view/CoInvest/CoinvestPub> and are categorised under workpackage number, deliverable number, title and aggregation level.

B) further dissemination

We had a lunch time meeting with the EU Commissionre for Innovation, Mrs. Georgan Quinn in June 2010 were we presented her with COINVEST work.

http://ec.europa.eu/commission_2010-2014/geoghegan-quinn/hlp/index_en.htm

This work was refereed to in the EU high level inquiry on innovation indices who noted that the EU should move in the direction of collecting intangibles data. http://ec.europa.eu/commission_2010-2014/geoghegan-quinn/hlp/index_en.htm

B) Some of our conferences

(for all conference details visit

<http://www.coinvest.org.uk/bin/view/CoInvest/CoinvestMeetings>)

- COST/COINVEST- London, February 2009
- OECD/COINVEST, Paris, June 2009
- IFN Sweden/COINVEST, September 2009
- COINVEST, Lisbon, March 2010
- COINVEST Academic Conference, Lisbon, 18th & 19th March. This was an extremely successful event, 22 papers were presented and 48 people in attendance.
- COST/COINVEST, Amsterdam, June 2010
- COINVEST, Sofia, July 2010
- COINVEST final dissemination event, September 2010

Members of the COINVEST Consortium have attended events organised by the following organisations,, OECD (Organisation for Economic Development and Co-Operation), COST (European Co-operation in Science and Technology), NBER (National Bureau of Economic Research) and US National Academy of Sciences.

COST programme (European Cooperation in Science and Technology) and COINVEST workshop on Intangible investment and firm performance which took place on 20th February, 2009 at Imperial College London, (see appendix for report).

All of the corresponding papers can be accessed via our website,
<http://www.coinvest.org.uk/bin/view/CoInvest/CoinvestPub> **and are categorised under workpackage number,**
deliverable number, title and aggregation level.

In June, COINVEST hosted a joint conference with the OECD in Paris, at the OECD Conference Centre. Dr Yoshiaki Tojo, OECD and Professor Jonathan Haskel (Imperial College) hosted the event. We had expert guest speakers in the field of intangibles including, Carol Corrado, The Conference Board, USA. Chuck Hulten, University of Maryland, NBER, The Conference Board, USA and Jacques Mairesse, ENSAE, France. The title of the conference was 'Measuring Investment in Intangibles'. The conference was attended by 57 delegates (COINVEST members and others).

6. FOLLOW ON WORK AND ACTIVITIES

We are involved in a number of follow on activities. We are attending the final meeting of the INNODRIVE Project to summarise our work and compare it with their findings. We gave talks at the INDICSER and SERVICEGAP project launch event and will do at the next INDISECER and have talked at the follow up meetings to EUKLEMS. We are involved in the ICTNET project too. We are in ongoing talks with NESTA, OECD and statistics bureaus and will be submitting papers to academic journals.

All of the corresponding papers can be accessed via our website, <http://www.coinvest.org.uk/bin/view/CoInvest/CoinvestPub> and are categorised under workpackage number, deliverable number, title and aggregation level.



PROJECT PERIODIC REPORT

Grant Agreement number: 217512

Project acronym: COINVEST

Project title: Competitiveness, Innovation and Intangible Investments in Europe

Funding Scheme: SEVENTH FRAMEWORK PROGRAMME THEME 9, SOCIO-ECONOMIC SCIENCES AND HUMANITIES

Date of latest version of Annex I against which the assessment will be made:

Periodic report: 1st 2nd

Period covered: from April 2009 to September 2010

Project co-ordinator name, title and organisation: Professor Jonathan Haskel, Imperial College of Science, Technology and Medicine

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Project website address: www.coinvest.org.uk

Declaration by the project coordinator

I, as co-ordinator of this project and in line with my obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate):
 - has fully achieved its objectives and technical goals for the period;
 - has achieved most of its objectives and technical goals for the period with relatively minor deviations
 - has failed to achieve critical objectives and/or is not at all on schedule.
- The public Website is up to date, if applicable.
- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 3.6) and if applicable with the certificate on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of Coordinator: Professor Jonathan Haskel

Date: 28/01/2011

A handwritten signature in cursive script, appearing to read 'J. Haskel', written over a horizontal dotted line.

Signature of Coordinator:

1 PUBLISHABLE SUMMARY

The COINVEST project, COINVEST- Competitiveness, Innovation and Intangible Investments in Europe was a 30 month collaborative research project funded under the European Commission Seventh Framework Programme (Theme 9, Socio-economic Sciences and Humanities). It was co-ordinated by Imperial College Business School London, under the leadership of the principal investigator Professor Jonathan Haskel. The project aimed to understand the contribution of intangible investments to innovation, competitiveness, growth and productivity in Europe. Researchers, experts in the new field of intangible investments in economics came together to examine whether Europe has been performing very well in the knowledge economy. It was necessary to do this, because most intangible investments are “hidden” in national accounts and micro data.. In national accounts this is because they are treated as intermediate inputs and so do not show up as part of investment either in GDP or as creating an asset that might account for changes in GDP. Similarly, intangibles are often not reported in micro work or are so reported in only an occasional way across countries. Researchers in the UK, Belgium, Bulgaria, France, Germany, Portugal and Sweden came together to investigate both micro and macro (market economy and industry) data in these countries.

2 PROJECT OBJECTIVES FOR THE PERIOD

To see how comparative cross-country economic performance is affected by intangible investment (Work Package 5). The idea here is as follows. If intangible investment is counted as such then it raises GDP. This then potentially changes cross-country productivity and performance comparisons. Of course, if all countries invest a similar fraction of GDP in intangibles then relative rankings will not change, but we need to undertake the work to find this out. We similarly will want to compare cross-country MFP which will change with the addition of intangibles.

Data allowing, we shall look here at the above issues but by industry. The industry definition is difficult and we are not clear what data are available and hence this is speculative. We shall have to develop conventions to be consistently applied across countries in line with the availability of industry data.

To relate our findings to micro data analysis

This macro data work is an essential first step to pointing towards what area of work might be developed, in particular by micro analysis. Thus our final step, data allowing, we shall also try to examine the effects of intangible investment in firms and between firm differences in such investment. The major problem here is that the official statistics hardly collect information on intangibles systematically and hence few firms record such investments. Thus we shall proceed in a number of ways. First, competition authorities often seek to measure intangible assets in the course of inquiries and we shall examine these data and methods. Second, the EU Community Innovation Survey does ask a number of firm-level questions about a range of intangible asset spending by firms (in the UK, for example, spending on training, branding, design etc.). There are formidable problems with using CIS for this purpose, in particular in a cross-country

comparative framework. For example, the precise implementation of the survey may differ between countries, and information on actual expenditures is often lacking. But since the CIS can be matched, in some countries at least, to the Production Census, this offers us the best chance of looking at micro data in parallel to the macro data that we shall try to assemble. Third, one can also make direct use of financial information from business. For example, on the basis of annual income statements, expenditures (e.g. on R&D) that are clearly intended to increase future income are not treated as a cost but as an investment. The new capital item then needs to be depreciated, and other items, such as the part advertising budget designed to launch new products and gain market share, is also added. The Conference Board has already begun some exploratory work with knowledge-intensive businesses themselves in developing a set of metrics to help business measure and evaluate intangibles.

3 WORK PROGRESS AND ACHIEVEMENTS DURING THE PERIOD

PARTNER 1, IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE & Partner 8, Queen Mary, University of London

Summary of progress

WP4

Imperial College London lead on the deliverable 10 ' a paper providing a within-country analysis of intangible assets and investments at sector-level and the level of the enterprise allowing for specific countries with the data. The results of this are as follows;

WP6

Imperial College London staff assisted with deliverable 12, 'A taxonomy of quality indicators and measurements for the assessment and valorisation of intangible assets and investments based on micro-data work' and lead on deliverables, 13 and 19; 'Based on the above work (of the project), a distillation of the findings of the above work culminating in the country-specific micro-data exercises, leading to a drafting and publication of report' and 'Distillation of above to formulate best practice in policy orientated report for the development of tools to accurately assess and measure the impact of intangible assets and investments and that, furthermore, can lead to improving policies aimed at promotion'.

PARTNER 2, THE CONFERENCE BOARD IN EUROPE

Summary of progress

We have delivered the results of Deliverables 6 and 8. Deliverable 6 is a paper quantifying figures on time series for Germany, and Deliverable 8 Paper quantifying figures on time series estimates dating back to 1980 for France. We have estimated investment in intangible in Germany, France, Italy, and Spain from 1980 to 2006 (with updated data) and calculated the contribution of intangibles to labour productivity growth accounts for 1995-2000 and 2000-2004 for the four countries. Furthermore, we compared the results for Germany, France, Italy and Spain with the results for the US and the UK in the same time frame.

Significant results

We use the same methodology as CHS (2005) and Morrano, Haskel and Wallis (2007) to measure how much Germany, France, Italy and Spain invested in intangible assets back to the 1970s for some types of intangible assets, back to the 1980s for some intangible assets, and back to 1991 for the rest of intangible assets. We use a wide range of data sources including national accounts, surveys provided by statistical offices, surveys provided by trade associations and corporate financial reports. We estimate that Germany, France, Italy and Spain respectively invested 7.1%, 7.8%, 5.2% and 5.2% of GDP in intangible assets in the market sector in 2004. From 1995 to 2003, intangible assets contributed to 0.6 percentage points of the annual growth of labor productivity in France and Germany, followed by Italy (0.4 percentage points) and Spain (0.2 percentage points). We chose the period from 1995 to 2003, to be consistent with CHS (2006) and MHW (2007). We also carry out growth accounting for 1995-2000 and 2000-2004 for Germany, France, Italy and Spain. The growth rate of labor productivity was higher in the first period, and was lower in the second period. The contribution of intangible assets decreased from the first to the second period.

Problems encountered

It is hard to compare intangible investment across countries, because different authors use different data sources, including national accounts, surveys carried out by national statistical agencies and surveys carried out by trade associations. In addition, we have no data on import and export of intangible assets.

Contribution to the realization of the project

Deliverables 6 and 8 help COINVEST to reach the first three objectives listed in “COINVEST Description of Work”. Those three objectives are (1) “To find out what data are available on intangible assets in different countries”, (2) “to find out what intangible assets EU economies invest in and how much they spend”, and (3) “to measure the effects within each country of intangible asset expenditure on economic performance”. We estimated investment in intangibles and their contribution to labour productivity in Germany, France, Italy, and Spain and are therefore an important contributor of work package 3. Furthermore, The Conference Board calculated intangible investment and growth accounts for Austria, Czech Republic, Denmark, Greece, and Slovakia from 1995 to 2006

beyond the scope of the COINVEST project for the European Investment Bank. We offer to extent the list of countries analyzed within the COINVEST project by the countries mentioned above.

Moreover, TCB helped COINVEST develop a uniform Stata program codes of growth accounting.

Other information

There are no deviations from the DOW Annex 1, we achieved all objectives. However actual person-months per work package exceed planned.

Work package number 4: Within-country analysis

Significant results

A growing body of research has documented the rapid growth of investments by U.S. companies in research and development, sales and marketing, and organizational capital, and found that these investments, collectively called intangibles, are an important driver of output growth and company value. Similar studies have been carried out for Japan and selected countries in Europe, and generally find the intangibles are an important source of growth. However, these findings refer to the average performance of companies in their respective economies, and not the leading participants in the global economy. This paper looks behind these aggregate numbers to the experience of individual multinational companies with large research budgets in Germany and the U.S. Unlike the average German company that trailed the U.S. in the rate of R&D spending, German companies were found to be comparably R&D intensive but less intangible-intensive when organizational capital is taken into account. These results suggest that while German companies on average exhibit lower R&D intensities, at the margin of international competition they are hard to distinguish from their U.S. counterparts in this dimension.

Problems encountered

The data for the German companies is directly derived from annual reports instead from huge database such as Amadeus, Dafne, Worldscope or Compustat. These databases publish most data from German financial statements but not all required variables for our analysis such as R&D and advertising expenditures; or not for a time series of ten year. That is the reason why the German sample is much smaller than the US sample in Hulten and Hao (2008). There is no comparable database for German companies as for US companies (Compustat).

Contribution to the realization of the project

This research helps COINVEST to reach deliverable 10 “Paper providing a within-country analysis of intangible assets and investments at sector-level and the level of the enterprise allowing for specific countries with the data and the objective to relate the findings on macro level to micro data analysis”.

We use financial statements from joint stock companies to develop some metrics for measuring intangibles and their value for companies to use. This approach provides a potentially interesting bridge to company work and opens up a new research field. In addition, we also compare R&D investment rates from our micro paper for German and US companies with R&D investment rates on macro level in the same countries. This exercise is an

important link between the micro and macro level and is a good exercise to demonstrate the consistency of our results on both levels.

Other information

There are no deviations from the DOW Annex 1, we achieved all objectives. However actual person-months per work package exceed planned.

We developed a 12-page computer program to calculate intangible investment and to carry out growth accounting of each country. We worked with Jonathan Haskel to standardize that program, so other COINVEST partners could use that program for their individual country. If other partners loaded raw data into the program, the program could generate key results of the research project. Jonathan Haskel sent that program to all the COINVEST partners.

PARTNER 3, Instituto Superior Técnico Lisboa (IST)

Summary of progress

WP3 - Paper quantifying figures on time-series estimates for Portugal – Estimates improved using the available datasets.

WP4 - Analysis of intangible assets and investments at sector level for Portugal and the level of the enterprise –it was not possible to obtain the necessary data to ensure estimates with a minimum level of quality, in spite of the efforts of the PT team, namely by maintaining regular contacts with Statistics Portugal. However, the role of intangibles was assessed at the firm level in WP6 using the Community Innovation Survey for Portugal.. This survey is not suitable to obtain macro estimates in Portugal, but allows performing firm level studies for certain type of firms (larger and more innovative).

WP5 - Cross-country analysis of productivity levels incorporating intangible assets for whole economy plus analysis of industries – contributing with data for Portugal

WP6 – Micro work - Several papers were produced and some of them published or are undergoing the submission process for publication in a journal. The following lists those papers:

1. “Establishment of higher education institutions and new firm entry”
Rui Baptista, Francisco Lima, Joana Mendonça
2. “Differentiating the role played by founders’ human capital in the performance of firms”
Rui Baptista, Francisco Lima, Joana Mendonça

3. “Innovation types: evidence on product, process and organizational innovation”
Pedro Faria and Francisco Lima
4. “Cooperation in innovation activities: the importance of partners”
Pedro Faria, Francisco Lima and Rui Santos
5. “Interdependence and spillovers: is firm performance affected by others’ innovation activities? ”
Pedro Faria and Francisco Lima
6. “International cooperation on innovation: firm-level evidence from two European countries”
Pedro Faria and Tobias Schmidt
7. “Knowledge protection strategies of multinational firms – a cross country comparison”
Pedro Faria and Wolfgang Sofka
8. “Knowledge protection capabilities and their effects on knowledge creation and exploitation in high- and low-tech environments”
Pedro Faria and Wolfgang Sofka
9. “Innovation strategy by firms: do innovative firms grow more?”
Pedro Faria and Joana Mendonça
10. “Technological regimes: firm size and R&D”
Pedro Faria, Francisco Lima and Rui Baptista

Papers/publications produced

11. Faria, Pedro, Francisco Lima and Rui Santos (2010), Cooperation in Innovation Activities: The Importance of Partners, *Research Policy* 39(8), 1082–1092.
12. Mendonça, Joana, Rui Baptista and Francisco Lima (2009), The creation of higher education institutions and firm entry: a policy evaluation, in *Entrepreneurship and Growth in Local Regional and National Economies*, ed. D. Smallbone, H. Landstrom, & D. Jones-Evans, 207-230. Edward Elgar, Cheltenham–UK/Northampton, MA, USA.
13. Faria, Pedro and Francisco Lima (2009), Firm Decision on Innovation Types Evidence on Product, Process and Organizational Innovation, *7th Annual International Industrial Organization Conference*, Boston, US, April.

https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=IIOC2009&paper_id=323)

14. Faria, Pedro and Francisco Lima (2009), Firm Decision on Innovation Types: Evidence on Product, Process and Organizational Innovation, *DRUID Society Summer Conference 2009 on Innovation, Strategy and Knowledge*, Copenhagen, Denmark, June. (<http://www2.druid.dk/conferences/viewpaper.php?id=5590&cf=32>).
15. Mendonça, Joana, Rui Baptista and Francisco Lima (2009), Differentiating the Role Played by Founders' Human Capital in the Performance of Firms, *Academy of Management 2009 Annual Meeting*, Chicago, US, August.
16. Faria, Pedro and Francisco Lima (2009), Firm Decision on Innovation Types: Evidence on Product, Process and Organizational Innovation, *Academy of Management 2009 Annual Meeting*, Chicago, US, August.
17. Lima, Francisco (2009), Intangibles and growth accounting results for Portugal, *COINVEST Steering Committee Meeting*, Stockholm, September 28-29.
18. Mendonça, Joana, Rui Baptista and Francisco Lima (2009), Differentiating the Role Played by Founders' Human Capital in the Performance of Firms, *29th Annual International Conference Strategic Management Society (SMS)*, Washington, US, October 11-14.
19. Sofka , Wolfgang and Pedro Faria (2010), Knowledge Protection Capabilities and their Effects on Knowledge Creation and Exploitation in High and Low-tech Environments, *COINVEST Conference - Intangible Investments at Macro and Micro Levels and Their Role in Innovation, Competitiveness and Growth*, Lisbon, IST, March 18-19.
20. Lima, Francisco (2010) Intangible investments in Portugal, *COINVEST Conference - Intangible Investments at Macro and Micro Levels and Their Role in Innovation, Competitiveness and Growth*, Lisbon, IST, March 18-19. (Included also the presentation of "The value of training" co-authored with Susana Neves from Statistics Portugal.)
21. Faria, Pedro and Francisco Lima (2010), Organizational Change and Firm Performance, *COST MC Meeting and Workshop on Firm-level Micro Data*, Amsterdam University College, May 28-29.
22. Lima, Francisco (2010), Micro-data Exercises: Results for Portugal, *COINVEST London Dissemination Conference*, Imperial College, September 23.

PARTNER 4, Institutet för Näringslivsforskning (IFN)

Summary of progress

Work Package 3, deliverable 4

Paper quantifying figures on time series estimates dating back to 1980 for Sweden

We delivered this before 1st April, 2009. We have already made clear that we couldn't produce any estimates for the period 1980–2002.

Work Package 3, deliverable 9

Database comprising the figures produced for cross-section estimates to 2005 and time-series estimates dating back to 1980 for all countries.

Harald Edquist has collected data on intangible investment and sent them to Catherine Edlin. Data for the period 1980–2002 have not been available.

Work Package 3, deliverable 10

Paper providing a within-country analysis of intangible assets and investments at sector-level and the level of the enterprise allowing for specific countries with the data.

Data have been collected for this paper and can be provided on demand. We have not been able to complete the analysis of the data, but expect to do so within 2 weeks time.

Work Package 4

Paper providing a within-country analysis of intangible assets and investments at sector-level and the level of the enterprise allowing for specific countries with the data.

Harald Edquist has sent growth accounting data to Annarosa Pesole, who will put them together.

PARTNER 5, CLUB EKONOMIKA 2000

Summary of progress

During the reporting period the team of Club2000 participated in preparation of deliverables No. 5, 9, 10, 11, 12, 15, 16, 18, 19, 21 and 22.

Deliverable 5: Paper qualifying figures on time-series estimates dating back to 1980 for Bulgaria

The delivered paper quantifies intangible investments from 1990 to 2006. We were not able to cover intangible investments before 1990 (as it was also doubted in the DoW) because of the different statistical methodology for measurement of national income compared to GDP, different nomenclature of economic activities and lack of reliable data.

This deliverable contributes directly to the following objectives:

- To find out what intangible assets EU economies invest in and how much they spend;
- To measure the effects within each country of intangible asset expenditure on economic performance and indirectly
- To: see how comparative cross-country economic performance is affected by intangible investment and
- to relate our findings to micro data analysis.

Deliverable 9: Database comprising the figures produced for cross-section estimates to 2005 and time-series estimates dating back to 1980 for all countries

The produced data for intangible investments in Bulgaria were incorporated in the international database.

This deliverable contributes to the following objectives:

- To find out what intangible assets EU economies invest in and how much they spend
- To see how comparative cross-country economic performance is affected by intangible investment.

Deliverable 10: Paper providing within-country analysis of intangible assets and investments at sector-level and the level of the enterprise allowing for specific countries with the data

The raw statistical information and data for intangible investments in Bulgaria cannot be divided among the public and private sector. The breakdown of intangible investments in Bulgaria that we are able to produce consists of purchased and in-house intangibles for the covered period.

Deliverable 11: Major cross-country analysis comprising pan-European overview of the effects of intangible assets and investment on European competitiveness and innovation

The results produced in Bulgaria are used and could be used in comparative pan-European studies in order to measure the scope of intangible investments.

This deliverable contributes to the following objectives:

- To find out what intangible assets EU economies invest in and how much they spend
- To see how comparative cross-country economic performance is affected by intangible investment.

Deliverable 12: A taxonomy of quality indicators and measurements for the assessment and valorisation of intangible assets and investments based on micro-data work

In our studies we used different surveys collected at the micro level. Among them are: NSI Business Statistics data, National Accounts Data, Vocational Training Surveys, Labour Force Survey Data, Survey on Information and

Communication Technologies in Non-Financial Enterprises, Structure of Earnings Surveys (2002 & 2006). These surveys allow us to assess the level of intangibles at micro level.

This deliverable contributes to relate our findings to micro data analysis.

Deliverable 15: Organisation and execution of the Steering Committee meetings

During the reporting period T. Gradev participated in IV Steering Committee Meeting, 28th and 29th of September, 2009 in Stockholm where he did a presentation on the topic: “Productivity, technology ladder and optimal product mix”.

This deliverable contributes to the exchange of ideas, information, results, participation in discussions and further project planning among project partners.

Deliverable 16: Organisation and execution of the mid-term review meeting in Paris

T. Gradev did a presentation on the topic: “Intangible Assets in Bulgaria 1990-2005” at the COINVEST-OECD Joint Conference, Tuesday, June 2nd, 2009, OECD Conference Centre, Paris.

This deliverable contributes to the exchange of ideas, information, results and participation in discussions among project partners and representatives of OECD.

Deliverable 18: COINVEST Policy Maker Briefing

The Policy Maker Briefing was organised on 13th of July, 2010 in Sheraton hotel, Sofia. About 20 participants from the Bulgarian government and its agencies, BNB, The World Bank, BAS and universities took part in the briefing. The presented three papers about IA in the UK, Sweden and Bulgaria from project partners contributed to the dissemination of main results of the project to policy makers and a better understanding of the role of intangible investments to economic growth, innovation, and national competitiveness.

This deliverable provides a unique opportunity for dissemination, consultation, and discussion of project results with policy makers and external academics.

Deliverable 19: Distillation of Deliverable 18 to formulate best practice in policy orientated report for the development of tools to accurate assess and measure the impact of intangible assets and investments and that, furthermore, can lead to improving policies aimed at their promotion.

A special paper devoted to measurement problems that we faced was prepared and will be published in Economic Thought journal. Also, some points and findings concerning the measurement of intangibles were presented by us at the Final Conference in London.

This deliverable helps developing the methodology for measurement of intangible investments and understanding their role.

Deliverable 21: Drafting and publication of Final Report.

The results produced in Bulgaria are incorporated into the COINVEST Final Report. This deliverable summarises and presents the final results to the EC and the public.

Deliverable 22: Six monthly progress reports together with policy findings, if any

The Bulgarian team regularly provided all needed project information and reports to the project coordinator to facilitate exchange of information and coordination of project activities.

This deliverable contributes to smooth COINVEST project management.

PARTNER 6, ZEW**Summary of progress**

The ZEW team has worked on the following work packages this period:

WP 3:

Based on the results and discussion of the mid-term review, we updated deliverable 3.6 (Paper quantifying figures on time series estimates dating back to 1980 for Germany, updated version November 2010, originally submitted in October 2009). The updated version

- i) explains that due to German reunification we could not provide consistent estimates for all time series back to 1980, but had to restrict the time period from 1991 onwards;
- ii) in connection with work package WP 4 (sector analysis), we updated all time series and included data until 2008.

WP 2:

The work done in WP 3 also feeds into the cross-section estimates of intangible investments (WP 2).

WP 4:

We collected data on intangible assets and investments at the sector level for Germany. Sector level means that we could consistently gather figures for the following sectors: agriculture/fishing/mining (NACE: A,B,C), manufacturing (NACE: D), electricity/gas/water supply (NACE: E), construction (NACE: F), wholesale/retail/hotels/restaurants/transport/communication (NACE: G,H,I) and financial intermediation/business services (NACE: J,K). This sector breakdown is consistent across the countries and thus allows the comparison of intangible assets at the sector level across countries. Since the last reporting in May, we have completed the data collection and we have explored the role of intangible investments for economic growth at the sector level.

The results are published in Crass, D., G. Licht and B. Peters (2010), The Role of Intangible Investments for Economic Growth at the Sector Level in Germany (forthcoming as ZEW Discussion Paper). They will feed into Deliverable 10 (A joint paper providing a within-country analysis of intangible assets and investments at the sector-level).

The results elucidate remarkable differences in terms of the distribution of intangible investments across sectors. For instance, innovative property make up 55% of investments in intangible investments in manufacturing, but only

27% in financial intermediation and business services. On the other hand, investments in economics competences account for 62% of total intangible investments in the latter sector and for 39% in manufacturing. Looking at the distribution across sectors for each category of intangible assets, we surprisingly find that manufacturing and financial businesses invest the same amount into economic competences (both sectors account for 37% in total investment). Another picture emerges for innovative property. Here, we clearly ascertain that more than 70% of the economy-wide investments stems from manufacturing firms and that this share is increasing over time.

WP 6:

We carried out work related to deliverable 14. That is, we used microeconomic approaches to explore the role of intangible investments for productivity growth at the firm level in Germany.

We used three waves of the German community innovation survey (CIS) to construct a panel of around 5000 firms. The data set includes different kinds of intangible assets at the firm level (R&D, non-R&D related innovation behaviour (like design or expenses for design), training investments, marketing expenditure and a dummy for organisational innovations).

We estimate the effect of these different types of intangible investments on productivity using a production function approach and panel data techniques.

Regarding major results, we find strong positive productivity effects for R&D, marketing and training. The effects of marketing are highest, even higher than those of R&D. However, one should keep in mind, that investments in R&D can usually be used by a company for a longer period of time. Thus it is not surprising that in the short term marketing show a higher return. We furthermore find only weak evidence for positive productivity effects of non-R&D related innovation assets like design, licences and product preparation. Finally, our results illustrate mixed productivity effects of firms increasing their organizational capital by introducing organizational innovations. That is, we find a stimulating effect of a change in business practices but not for a change in workplace organization.

The results will be published in December 2010 as a ZEW discussion paper (Crass, D. and B. Peters (2010), Do Intangibles Enhance Productivity Growth? Microeconomic Evidence from Germany).

PARTNER 7, CNRS/GRECSTA

Summary of progress

Vincent Delbecque has carried out an industry-level analysis for France for the period 1980-2006. An associated paper will follow.

- Harald Edquist (IFN) visited the French team for 5 days in December in order to improve joint work and harmonisation, especially on employment cost based estimations.
- Vincent Delbecque has been working jointly with Annarosa Pesole (IC) on financial innovation issues and measurement harmonisation
- Major macro-level issues have forced us to postpone micro-level studies

DISSEMINATION

- 26th November 2009, French COINVEST members presented their work at the National Accounting seminar at the INSEE.
- 2nd March 2010, Vincent Delbecque attended the COINVEST project review in Brussels
- 18th and 19th March 2010, French COINVEST members attended the COINVEST conference in Lisbon
- French team will present macro-level results and propose an extensive discussion covering conceptual issues linked to the project
- French COINVEST members, jointly with other COINVEST members, will present project results at the IARIW conference in August 2010.

4 DELIVERABLES AND MILESTONES TABLES

Deliverables (excluding the periodic and final reports)

TABLE 1. DELIVERABLES									
Del. no.	Deliverable name	WP no.	Lead participant	Nature	Dissemination level	Due delivery date from Annex I	Delivered Yes/No	Actual / Forecast delivery date	Comments
1	A pan-European scoping of exemplar countries to determine nature of intangible investments	1	QMUL	R	PU	Month 8	Yes	M8	
2	Using data from the above scoping exercise, a paper that provides cross-section estimates of intangible assets for all countries	2	QMUL	R	PU	Month 8	Yes	M15	

	represented in the consortium								
3	Paper quantifying figures on time-series estimates dating back to 1980 for the United Kingdom	3	QMUL	R	PU	Month 12	Yes	M11	
4	Paper quantifying figures on time-series estimates dating back to 1980 for Sweden	3	IFN	R	PU	Month 12	Yes	M14	
5	Paper quantifying figures on time-series estimates dating back to 1980 for Bulgaria	3	CLUB2000	R	PU	Month 12	Yes	M15	
6	Paper quantifying figures on time-series estimates dating back to 1980 for Germany	3	ZEW/ TCBE	R	PU	Month 12	Yes	M15	
7	Paper quantifying figures on time-series estimates dating back to 1980 for Portugal	3	IST	R	PU	Month 12	Yes	M15	
8	Paper quantifying figures on time-series	3	CNRS- GRECSTA/	R	PU	Month 12	Yes	M14	

	estimates dating back to 1980 for France		TCBE						
9	Database comprising the figures produced for cross-section estimates to 2005 and time-series estimates dating back to 1980 for all countries	3	QMUL	R	PU	Month 18	Yes	M15	
10	Paper providing a within-country analysis of intangible assets and investments at sector-level and the level of the enterprise allowing for specific countries with the data	4	IC	R	PU	Month 22	Yes	M33	Submitted after formal project end
11	Major cross-country analysis comprising pan-European overview of the effects of intangible assets and investment on European	5	TCBE	R	PU	Month 30	Yes	M34	Submitted after formal project end

	competitiveness and innovation								
12	A taxonomy of quality indicators and measurements for the assessment and valorisation of intangible assets and investments based on micro-data work	6	IC	R	PU	Month 30	Yes	M34	Submitted after formal project end
13	Based on the above work, a distillation of the findings of the above work culminating in the country-specific micro-data exercises, leading to a drafting and publication of report	1-6	IC	R	PU	Month 30	Yes	M34	Submitted after formal project end
14	Organisation and execution of the opening meeting in Brussels.	7	QMUL	O	PU	Month 3	Yes	M2	
15	Organisation and execution of the	7	QMUL/IC	O	PU	Months 1, 8, 13, 22	Yes	M2	

	Steering Committee meetings								
16	Organisation and execution of the mid-term review meeting in Paris	7	QMUL	O	PU	Month 13	Yes	M22	
17	Organisation and execution of the final academic conference in Lisbon	7	IC	O	PU	Month 24	Yes	M24	
18	Organisation and execution of a policymaker briefing in Sofia	7	IC	O	PU	Month 27	Yes	M28	
19	Distillation of above to formulate best practice in policy-orientated report for the development of tools to accurately assess and measure the impact of intangible assets and investments and that, furthermore, can lead to improving policies	7	IC	O	PU	Month 30	Yes	M34	Submitted after formal project end

	aimed at their promotion.								
20	Organisation and execution of the final policy and dissemination meeting in London	7	IC	O	PU	Month 30	Yes	M30	
21	Drafting and publication of Final Report	7	IC	O	PU	Month 30	Yes	M34	Submitted after formal project end
22	Six monthly progress reports together with policy findings, if any	7	QMUL/IC	R	PU	Months 7,13,19, 24 and 30	Yes	M7, M13, M19, M24, M34	

Milestones

I.

TABLE 2. MILESTONES							
Milestone no.	Milestone name	WP no.	Lead participant	Due achievement date from Annex I	Achieved Yes/No	Actual / Forecast achievement date	Comments
1	Opening meeting, London	7	QMUL	Month 1	Yes	Month 2	Meeting
2	Steering Committee meeting	7	QMUL	Month 1	Yes	Month 2	Meeting
3	Steering Committee meeting	7	QMUL	Month 7	Yes	Month 8	Meeting
4	Mid-Term Review, Paris	7	QMUL/IC	Month 13	Yes	Month 23	Meeting
5	Steering Committee meeting	7	IC	Month 13	Yes	Month 17	Meeting

6	Computer program for calculating rates of intangible investment	7	IC	Month 14	Yes	Month 14	New computer program produced
7	Steering Committee meeting	7	IC	Month 24	Yes	Month 24	Meeting
8	Final policy conference, London	7	IC	Month 30	Yes	Month 30	Meeting
9	Final academic conference, Lisbon	7	IC	Month 24	Yes	Month 24	Meeting
10	Practitioners' briefing for newer Member States and Associated Countries, Sofia	7	IC	Month 27	Yes	Month 28	Meeting

11	Policy paper based on micro-data work and company surveys	7	IC	Month 30	Yes	Month 34	A taxonomy of quality indicators and measurements and systematic questionnaire based on companies' analysis
12	Final report	7	IC	Month 30	Yes	Month 34	Publication

5 PROJECT MANAGEMENT

The project has continued to be guided under the project management of Professor Jonathan Haskel (Imperial College) and Miss Catherine Edlin (Imperial College). In terms of managing the project, a six monthly progress report has been successfully submitted at each six monthly point, enabling a closer monitoring of the project.

Project website

A large part of the project management function has been an active dissemination programme encouraged by Professor Haskel. The project website, www.coinvest.org is an up to date account of all of the dissemination activities of the consortium, be they papers, presentations or reports. The deliverables themselves are available at <http://www.coinvest.org.uk/bin/view/CoInvest/CoinvestProjects> categorised under workpackage number, workpackage name and the aggregation level. The papers produced by the Consortium can also be found under <http://www.coinvest.org.uk/bin/view/CoInvest/CoinvestPub> and these are categorised under date of publication, workpackage number and aggregation level.

It will be necessary to keep the website online for at least 2 more years following the project end, and any related publications to this subject will continue to be published there. The website operated by a free software and therefore there is a small charge for domain hosting.

Statistics

Publications- 25 publications as a direct result of this project research/funding

Deliverables- 17 technical deliverables

Deliverables- 5 periodic progress reports

Dissemination events organised by COINVEST- 7 events;

COINVEST/COST workshop, London, February 2009

COINVEST/OECD conference, Paris, June 2009

COINVEST Workshop, Stockholm, September 2009

COINVEST Academic Conference, Lisbon, March 2010

COINVEST Policy Maker Briefing, Sofia, July 2010

COINVEST Final Dissemination Conference, September 2010

Meetings- 6 official meetings

Impact of the project

Europe impact

Adoption by UK Innovation Index work presented to Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science

Outside Europe and in the US

Adoption by OECD innovation strategy-

http://www.athenaalliance.org/weblog/archives/2010/06/economics_innovation_central_to_boosting_growth_an.html

Seminars and presentations on work to US BEA and BLS. Personal invitation to present work at BEA and BLS from Heads of Economics at both institutions

Presentations to US National Academy of Science.

Adoption of micro questionnaire by Kauffman Foundation.

Impact on other projects

INNODRIVE Project- attendance of COINVEST members at meetings, members of INNODRIVE at COINVEST conference in Stockholm, and some follow on work.

ICTNET- FP7-Imperial College are a partner in this project focusing on ICT, R&D and intangibles.

6 EXPLANATION OF THE USE OF THE RESOURCES

TABLE 3.1 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 1 FOR THE PERIOD-IMPERIAL COLLEGE			
Work Package(s)	Item description	Amount	Explanations
4,5,6	Personnel costs 1	€114,520.19	A. Pesole, J. Haskel
	Personnel costs 2	€50,021.60	C. Edlin, J. Haskel, A. Pesole
	Direct costs 1	€19,766.65	Travel costs, and conferences
	Direct costs 2	€3,560.13	Travel costs
TOTAL DIRECT COSTS AS CLAIMED ON FORM C		€187,868.57	
	Adjustment 08/09	-2,616.60	EC contribution

TABLE 3.2 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 2 FOR THE PERIOD-THE CONFERENCE BOARD			
Work Package(s)	Item description	Amount	Explanations
3, 4	Personnel costs	€175,718	Staffing costs for: 1 Research Director - Carol Corrado, R&D deflator for UK, 2.1 person months. 2 Economists - Janet Hao, WP 3 & 4, 9 person months. Kirsten Jaeger, WP4, 9 person months 1 senior fellow on intangibles – Chuck Hulten, WP4, 1.25 person months.
	Direct Costs	€8,699	Travel and Incidental
TOTAL DIRECT COSTS AS CLAIMED ON FORM C		€184,417	

TABLE 3.3 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 3 FOR THE PERIOD-IST			
Work Package(s)	Item description	Amount	Explanations
WP3-WP6	Personnel costs 1	€32,218.64	2 senior researchers (7 person-months) F. Lima, P. Faria
WP7	Personnel costs 2	€3,972.04	F. Lima (MGT)
	Direct costs 1	€11,710.07	Missions – Coinvest meetings and conferences
TOTAL DIRECT COSTS AS CLAIMED ON FORM C		€47,900.75	
Adjustment direct 08-09		€723.25	EC contribution

TABLE 3.4 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 4 FOR THE PERIOD-IFN			
Work Package(s)	Item description	Amount	Explanations
WP3, 4, 5	Personnel costs	€65,823	Salary of one researcher (Harald Edquist)
WP7	Management costs	€2,500	
	Travel	€4,919	Meetings in Paris (Henrik Jordahl and Harald Edquist, June 2009), in Lisbon (Harald Edquist, March 2010), in Sofia (Harald Edquist, July 2010), and in London (Harald Edquist, September 2010).
	Other direct cost	€1,702	Data software from Statistics Sweden
TOTAL DIRECT COSTS AS CLAIMED ON FORM C		€74,944	

TABLE 3.5 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 5 FOR THE PERIOD-CLUB 2000			
Work Package(s)	Item description	Amount	Explanations
	Personnel costs	€48,298.40	2 senior researchers: Todor Gradev, Spartak Keremidchiev (4.5 PM); 5 assistant researchers: Lyubomir Dimitrov, Yordan Kalchev, Veronika Shopova, Boryana Yotova, Konstantin Konstantinov (12.09 PM).
	Direct costs	€9,745.96	Travel and conferences
TOTAL DIRECT COSTS AS CLAIMED ON FORM C		€58,044.36	

TABLE 3.6 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 6 FOR THE PERIOD-ZEW			
Work Package(s)	Item description	Amount	Explanations
1,2,3,4,6	Personnel costs 1	€124,536.44	Salaries of 2 postdoctoral students and 1 PhD student, work on data updates in particular for training expenditure, advertising, branding, software and coordination with other partners (WP 1, 2, 3), data availability on intangible investments at the sector level (WP 4) and microeconomic work on effects of intangibles on innovation performance (WP 6)
WP7	Personnel costs 2	€1,164.68	G. Licht
	Travel costs- RTD and MGT	€6,704,36 (€4,563.48 & €2,140.88)	Participation of ZEW researchers in project meetings Lisbon (2 people), London (2 people), Brüssel (1 people), Amsterdam (1 people)

	TOTAL DIRECT COSTS AS CLAIMED ON FORM C	€132.405,48	

TABLE 3.7 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 7 FOR THE PERIOD-CNRS-GRECSTA			
Work Package(s)	Item description	Amount	Explanations
	Personnel costs	€69,480.48	V. Delbecque, J. Mairesse, S. LeLaidier, L. Nayman
	Direct costs	€6,182.33	
	TOTAL DIRECT COSTS AS CLAIMED ON FORM C	€75,662.73	

TABLE 3.8 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR COST ITEMS FOR BENEFICIARY 8 FOR THE PERIOD-QMUL			
Work Package(s)	Item description	Amount	Explanations
WP3, WP4	Personnel costs	€14,898.58	A.Pesole 4 person months
WP7	Personnel costs	€5,958.92	C. Edlin, 1.6 person months
RTD	Direct costs 1	€745.53	Travel for A. Pesole
MGT	Direct costs 2	€2,048.36	Travel and conferences
	TOTAL DIRECT COSTS AS CLAIMED ON FORM C	€23,651.31	

**7 FINANCIAL STATEMENTS – FORM C AND SUMMARY
FINANCIAL REPORT**

PLEASE FIND ATTACHED THE FORM C 'S FOR THIS PERIOD

THE REQUESTED EC CONTRIBUTION IS €973,430.90

8 CERTIFICATES

No certificates to present