

INNO-Policy TrendChart –
Innovation Policy Progress Report

MALTA

2009

PREFACE

Innovation is a priority of all Member States and of the European Commission. Throughout Europe, hundreds of policy measures and support schemes aimed at innovation have been implemented or are under preparation. The diversity of these measures and schemes reflects the diversity of the framework conditions, cultural preferences and political priorities in the Member States.

PRO INNO Europe® is an initiative of the Directorate-General Enterprise and Industry (DG ENTR) which aims to become the focal point for innovation policy analysis, learning and development in Europe, with a view to learning from the best and contributing to the development of new and better innovation policies in Europe. Run by the Innovation Policy Directorate of DG ENTR, it pursues the collection, regular updating and analysis of information on innovation policies at national and European level.

INNO-Policy TrendChart serves the 'open method of coordination' approach laid down by the Lisbon Council in March 2000. It supports policy makers and innovation support measure managers in Europe by providing summarised and concise information and statistics on innovation policies, performances and trends. It is also a European forum for benchmarking and the exchange of good practices in the area of innovation policy.

INNO-Policy TrendChart products

INNO-Policy TrendChart, previously the TrendChart on Innovation, has been running since January 2000. It currently tracks innovation policy developments in all 27 EU Member States, plus Brazil, Canada, China, Croatia, Japan, Iceland, India, Israel, Norway, Switzerland, Turkey and the US. The INNO-Policy TrendChart website⁽¹⁾ provides access to the following services and publications, as they become available:

- a database of innovation policy measures in the 39 countries;
- a news service and related innovation policy information database;
- annual policy monitoring reports for all countries covered;
- the European Innovation Progress Report, an annual synthesis report bringing together key points in the INNO-Policy TrendChart.

This document has been prepared within the framework of an initiative of the European Commission's Enterprise and Industry Directorate-General, Innovation Policy Development Unit. Official responsible: Cesar Santos (Cesar.SANTOS@ec.europa.eu).

The present report was prepared by Lisa Pace, lisa.a.pace@gmail.com. The contents and views expressed in this report do not necessarily reflect the opinions or policies of the Member States or the European Commission.

The report covers the period from July 2008 to June 2009.

Copyright of the document belongs to the European Commission. Neither the European Commission, nor any person acting on its behalf, may be held responsible for the use to which information contained in this document may be put, or for any errors which, despite careful preparation and checking, may appear.

¹ See <http://www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=52&parentID=52>

CONTENTS

EXECUTIVE SUMMARY: PUBLIC SUPPORT FOR INNOVATION – A SNAPSHOT	I
1. MAIN TRENDS AND CHALLENGES IN THE NATIONAL INNOVATION SYSTEM.....	1
1.1 RECENT ECONOMIC TRENDS AND MARKET DEVELOPMENTS	1
1.1.1 <i>The credit crisis and its effect on innovation activity</i>	2
1.2 RECENT TRENDS IN THE NATIONAL INNOVATION PERFORMANCE	4
1.3 IDENTIFIED CHALLENGES	6
2. PUBLIC SUPPORT TO INNOVATION	10
2.1 MAIN OBJECTIVES FOR INNOVATION POLICY	10
2.2 INNOVATION GOVERNANCE SYSTEM	11
2.2.1 <i>Governmental bodies</i>	11
2.2.2 <i>Main bodies managing implementation of policies</i>	11
2.3 PUBLIC FUNDING TO INNOVATION	12
2.3.1 <i>Review of the current range of support measures for innovation</i>	12
2.3.2 <i>New or modified support measures</i>	13
2.3.3 <i>Strengths and weaknesses in the innovation policy support system</i>	15
3. INNOVATION POLICY AND COMPETITIVENESS: AN APPRAISAL	16
3.1 THE ABILITY OF POLICY TO ADDRESS CHALLENGES	16
3.1.1 <i>How well does policy respond to innovation challenges?</i>	16
3.2 EFFECTIVENESS OF POLICY DESIGN	17
3.2.1 <i>Process of delivery</i>	18
3.3 IMPACT OF PUBLIC SUPPORT FOR INNOVATION	18
3.3.1 <i>Conclusions: possible future actions and opportunities for innovation policy</i>	20
ANNEXES	22

Exhibits

Exhibit 1: Comparable indicators of economic performance..... 2
Exhibit 2: European Innovation Scoreboard..... 5
Exhibit 3: Main innovation policy challenges 8
Exhibit 4: Main innovation policy documents..... 10
Exhibit 5: New Innovation Policy Support Measures (since the last report)..... 13
Exhibit 6: Policy measures and initiatives addressing innovation challenges and corresponding trends
in EIS Indicators 18

Executive Summary: public support for innovation – a snapshot

1. Main trends in the National Innovation System

In the period covered by this report (June 2008-2009), there is evidence that the global economic crisis has had impacts on the financial and operational performance of given sectors in Malta mainly due to rising electricity tariffs, and declining demand from overseas⁽²⁾. Manufacturing, tourism and real estate are amongst the most heavily hit. Other sectors including financial services, gaming and ICT remain more optimistic. The government's stimulus package in response to the crisis has focused on securing jobs and sustaining existing industry. Apart from this, government strategy is to support emerging fast-growing sectors such as eco-innovations and the green economy, pharmaceuticals, aviation and biotechnology.

In terms of innovation performance, Malta remains in the group of 'catching-up' countries with an innovation performance (SII⁽³⁾)= 0.329) that is well below the EU average (SII= 0.475); however in 2008, it exhibited a fast rate of improvement that was well above that of the EU-27. Malta is experiencing fast performance growth rates in certain indicators such as throughputs, with a substantial increase in community designs. It leads in high-tech exports and sales of new-to-market products. Broadband penetration amongst firms has increased steadily and is expected to reach 100% in 2009. On the other hand, the innovation performance of small and medium-sized enterprises (SMEs) remains a weakness in terms of the low percentage introducing product or process innovations (14.4%) which is well below the EU-27 average (32.9%). SMEs do, however, perform better with regard to the introduction of organisational and marketing innovations. In fact, non-research and development (R&D) innovation expenditures lie above the EU average.

In 2007, total investments in R&D (GERD, gross domestic expenditure on research and development) reached 0.6% of GDP, of which the business sector (BERD) accounted for 0.39% GDP and the public sector 0.21% GDP. Public expenditure on R&D stabilised in 2004 to 2006, however it experienced a 2.2% decrease in 2008 compared to 2007⁽⁴⁾, whilst BERD decreased over 2005 to 2007 and is projected to decrease further in 2009 according to Eurostat extrapolations. This leaves Malta struggling to achieve its Lisbon target of investing 0.75% of GDP in research and innovation and a GERD/GDP that is well below the EU-27 average of 1.83%⁽⁵⁾.

The innovation challenges for Malta, based on macro-economic indicators and EIS indicators (as reported in the TrendChart over the period 2005 to 2009), are those related to boosting financial and human resources in research and innovation, stimulating research and innovation (R&I) in enterprise and inculcating an entrepreneurial culture.

2. Main developments in public support for innovation

The innovation policy mix for Malta shows that the largest proportion of measures, expressed as a percentage of the total measures, targets the promotion and growth of innovative enterprises. This is followed by research and technology measures providing direct support, in the form of grants, to business R&D. Horizontal R&I policies aimed at strengthening research infrastructures feature more prominently as part of a longer-term strategy to build a national R&I framework that is supportive of research excellence and facilitates international collaboration.

The new innovation and research measures (2008 to 2009) include a variety of aid schemes for enterprise that offer higher intensity aid for SMEs, a research and development incentive package for

² Deloitte Malta Business Sentiment Survey 2009.

³ SII is the Summary Innovation Index.

⁴ National Statistics Office (2009), Expenditure on Research & Development in the General Government Sector 2006-2008 Release No. 118/2009.

⁵ Eurostat data.

industry, and capacity building for research and innovation infrastructures. Many of these measures are co-financed through the second programming period of structural funds from 2007 to 2013 and target specific sectors – such as ICT, biotechnology and environment – that have been identified as areas offering Malta a comparative advantage.

3. Appraisal of national innovation policy

Since research and innovation were given a higher priority on the national policy agenda (with the launch of the national Strategic R&I Plan in 2006), the policy responses have become more targeted with a clearer definition on demand-side and supply-side measures that are addressing the recommendations of the National Strategic R&I Plan and the measures of the National Reform Programme (NRP) 2008-2010. The substantially larger proportion of structural funds deployed for research and innovation, approximately EUR 89 million, provides an opportunity for faster growth and 'catching-up'.

The dichotomy in the Maltese industrial system, with low-tech indigenous firms on one hand and high-tech manufacturing FDIs on the other, has necessitated a tailoring of innovation policy support. The enterprise aid schemes are supporting product, process and service innovations and encouraging internationalisation and market diversification through the provision of grants, fiscal incentives and equity financing. Work is underway to foster a 'business friendly' environment characterised by the simplification of procedures to favour the setting up of businesses in Malta; other factors such as fiscal consolidation and macro-economic stability serve as attractions for FDIs.

The shift to a knowledge-intensive economy requires creating jobs in the high-skills end of the labour market and supporting this with adequately qualified human resources. The shortage of skills across all levels from technicians to professionals in certain areas is an emerging problem in the system. Although the number of people who have received a tertiary education increased in 2003 to 2007, it still remains well below the EU average as does the number of science and engineering (S&E) graduates and doctoral graduates. Measures addressing these challenges are fairly recent such as the provision of post-graduate bursary schemes (2006) and post-doctoral fellowships (2009). This delay in policy response means that the impacts will only become visible in the medium to long term.

'Soft' measures are less easily captured and tend not be categorised as 'formal' R&I activities; nevertheless they have an impact on facilitating innovation performance. The measures aimed at increasing a culture for innovation provide an example of such soft measures including the promotion of entrepreneurial skills.

The main system failures relate to capability, network and institutional failures⁶. Capability failures refer to a situation where enterprises are lacking managerial skills, technological learning and absorption capacity, affording limited take-up of innovation support, whilst network failures relate to a need for the system to encourage and stimulate stronger synergy among actors providing innovation support and improved quality of links.

4. Conclusion

Future policy action needs to focus on developing and implementing a stand-alone national innovation policy that meets the specific contextual requirements of local industry and provides a framework coordinating the activity of those entities with competencies in innovation policy design and implementation. The drafting of specific action plans in strategic sectors will provide an opportunity to formulate targeted policies to stimulate innovation in these areas as well as encourage greater synergy among innovation actors.

⁶ Pro-Inno Policy Trendchart (2009). European Innovation Progress Report 2008 European Commission Enterprise and Industry.

A persistent weakness of the system is the lack of an evaluation culture of innovation programmes and measures; generally there is no systematic and sustained evaluation of research and innovation programmes and measures affording for limited policy learning.

1. Main trends and challenges in the National Innovation System

1.1 Recent economic trends and market developments

Malta's economy is in a 'state of transition' as it attempts to reorient towards service-based activities in knowledge-intensive sectors such as ICT, aviation maintenance, pharmaceuticals and financial services amongst others⁽⁷⁾. This state of flux, together with other characteristics, such as high labour costs compared to emerging economies, present specific challenges in the face of the current climate of economic uncertainty.

Although Malta has registered some progress in its overall economic development compared to the previous two years (as reported in a number of international studies - see below), the economy is experiencing a downturn as a result of the global economic crisis. Amongst the worst hit sectors are tourism, manufacturing, real estate, import and distribution whilst the financial services and e-gaming sectors are showing more resilience. The effects of the financial crisis are analysed in [Section 1.1.1](#) of this report.

The World Economic Forum ranked Malta 52nd out of the 134 countries ranked in the Global Competitiveness Index in 2008 to 2009, up four places compared to 2007⁽⁸⁾. Moreover, in its 2008 Review of the Lisbon Objectives, the World Economic Forum ranked Malta 18th amongst the EU-27 Member States with an overall Lisbon Review Index score of 4.43 out of 7⁽⁹⁾; this is up one place compared to the 2006 review. Out of the parameters covered by this review, Malta ranks very low in innovation and R&D (25th out of 27), enterprise environment (24th out of 27) and sustainable development (26th out of 27) whilst it maintains an average position in financial services (11th out of 27), network industries (15th out of 27) and social inclusion (11th out of 27). It is now well behind Cyprus - ranked 13th - though ahead of Lithuania and Latvia among the EU-10 new Member States.

GDP fell by 1.3% in the first quarter of 2009 compared with the previous quarter (compared to a 2.4% decrease in the EU-27 for the same period). Although the Government's fiscal policy kept public deficit below the set 3% target in 2007⁽¹⁰⁾, the general government deficit reached 4.7% of GDP in 2008 and general government debt stood at 64.1% (cf to the 60% cap).

A 2009 Europa press release stated, 'The 2008 figures [are] due in great part to specific developments on the expenditure side rather than to the impact of the economic downturn, as GDP growth in 2008 was still positive at 1.6%⁽¹¹⁾. Specifically, overspending occurred due to a 'higher than planned increase in the public wage bill, in particular in the healthcare sector, higher energy subsidies and the one-off cost related to early retirement schemes in preparation for the privatisation of the Malta Shipyards'⁽¹²⁾. For 2009, Malta's debt to GDP ratio was revised upwards from 57.2% to 61.9%, also in excess of the 60% threshold⁽¹³⁾. As a result, an excessive deficit procedure for Malta was opened by the Economic and Financial Affairs Council (ECOFIN) in May 2009 that called on Malta to reduce its deficit below the 3% of GDP threshold by 2010. The widening public deficit is putting a strain on public

⁷ Malta Council for Science & Technology (2006). National Strategic Plan for Research & Innovation 2007-2010.

⁸ Porter M. and Schwab K. The Global Competitiveness Report 2008-2009. World Economic Forum, Switzerland 2008.

⁹ World Economic Forum. The Lisbon Review 2008. Measuring Europe's Progress in Reform.

¹⁰ Retaining the Stability of Public Finances is one of the Macro-Economic Challenges of the National Reform Programme 2008-2010.

¹¹ Europa Press Release (2009). Commission presents reports under the excessive deficit procedure Lithuania, Malta, Poland and Romania. Press Release no. IP/09/752, 13 May 2009.

¹² COMM (2009). 34/2.

¹³ Malta Business Today (2009). EC to decide on Malta's Excessive Deficit Procedure. 29 April 2009.

finances and will make it more problematic to offset the shocks resulting from the global financial crisis⁽¹⁴⁾.

The country has secured FDIs in a number of sectors that are attracted by the stable macroeconomic environment, the ongoing structural reforms and Malta's enhanced position as a financial and ICT hub in the Mediterranean⁽¹⁵⁾. The main recipient of FDI inflows in 2005 and 2006 was the financial services sector⁽¹⁶⁾. In its World Investment Report for 2008, UNCTAD (United Nations Conference on Trade and Development) classified Malta 4th out of the top 20 ranking countries in its inward investment performance index. The same report estimates that world investment levels dropped by 21%, whilst in Malta, FDI slowed by 13%, but still reached 10% of GDP, according to the records of the National Statistics Office⁽¹⁷⁾.

Like all other Member States, Malta recorded an increase in its unemployment rate from 6% in May 2008 to 7.1% in May 2009 - a lower percentage increase compared to the EU-27 (which averaged a 2.1% increase over the same period)⁽¹⁸⁾. It has managed to contain the effects of the crisis in terms of unemployment levels; it is one of the few EU countries that saw an increase in employment in the first quarter of 2009, registering a rise of 1.8% as against a drop of 0.8% in the EU-27⁽¹⁹⁾. Employment in medium- to high-tech manufacturing as a percentage of the workforce decreased over 2003 to 2007 whilst in knowledge-intensive services it increased over the same period²⁰.

An Ernst & Young Investment Attractiveness Survey for Malta 2009 suggests that the gap in the availability of human resources skills seems to be felt across all sectors and at all levels from technicians to highly skilled professionals⁽²¹⁾.

Trends in national innovation performance are discussed in Section 1.2 of this report.

Exhibit 1: Comparable indicators of economic performance

Indicator	National Performance		EU Average	
	2004	2007	2004	2007
GDP per capita in PPS (EU-27=100)	77.2	77.9	100*	100*
Real GDP growth rate (% change previous year)	1.0	4.2	2.5	2.9
Labour productivity per person employed (EU-27=100)	90.1	90.7	100*	100*
Total employment growth (quarterly % change) (1)		1.1^	0.3	1.5^
Inflation rate (average annual)	2.7	0.7	2.0	2.3
Unit labour costs (growth rate)	-1.8	-2.1	-1.4	-.08
Public balance (net borrowing/lending) as a % of GDP	-4.7	-2.2	-2.9	-0.8
General government debt as a % of GDP	72.1	62.1	62.2	58.7
Unemployment rate (as % of active population)	3.4	2.7	4.2	3.0
Foreign direct investment intensity	3.6	6.5	0.9	3.4
Business investment as a percentage of GDP	17.2	:	:	:

Source: Eurostat - Structural Indicators and Long-term Indicators <http://epp.eurostat.ec.europa.eu>

Key: (*) EU-25 average, (^) or latest available year (2006); (:) not available

1.1.1 The credit crisis and its effect on innovation activity

Whilst acknowledging that the effects of the financial crisis are being felt in the economy and have resulted in a climate of economic recession, there is the understanding that the impacts of the recession on innovation and innovative activity are complex, not least because firms and other actors

¹⁴ Times of Malta. Malta Will Face Economic Downturn in 2009. 4 November 2008.

¹⁵ Central Bank of Malta. Malta's Economy on the Path to the Euro. July 2007.

¹⁶ National Statistics Office. News release no. 210/2008.

¹⁷ Minister of Finance, Economy & Investment (2009). Concluding Speech at Ernst & Young Conference, Weathering the Challenges, Floriana 15 July 2009.

¹⁸ Eurostat news release no. 97/2009. Euro area unemployment up to 9.5%, 2 July 2009.

¹⁹ Minister of Finance, Economy & Investment (2009). Concluding Speech at Ernst & Young Conference Weathering the Challenges, Floriana 15 July 2009.

²⁰ Eurostat.

²¹ Ernst and Young (2009). Malta Attractiveness Survey 2009.

in the innovation system may respond differently to the current situation of crisis, and such impacts unfold over the medium to long term.

The financial crisis is having impacts on the financial and operational performance of given sectors in Malta mainly due to rising electricity tariffs, and declining demand from overseas⁽²²⁾. Manufacturing, tourism and real estate are amongst the most heavily hit. Between January and April 2009, a number of firms, mainly the companies which are export driven and typically those that have foreign interests were reported to have reduced their working week to a four-days⁽²³⁾; four of these firms returned to a normal working week only after receiving government financial assistance for retraining of staff.

Other sectors including financial services, gaming and ICT remain more optimistic⁽²⁴⁾. The domestic banking sector has not disproportionately suffered an explicit negative impetus from the financial crisis. A report from the Malta Ministry of Finance, Economy & Investment in 2008 said, 'Malta is currently reaping the advantage of a conservative banking approach that is not reliant on wholesale markets for its funding requirements'⁽²⁵⁾.

A number of start ups were set up, typically following the sizing down of the dry docks. There have been also ICT start ups spinning out from employees of established companies who decided to branch out on their own. The small start up ERDF grant scheme (MT_46) has been crucial in facilitating the formation of these new businesses⁽²⁶⁾. Malta Enterprise approved 12 new start-up companies and 17 expansions in the first six months of 2009⁽²⁷⁾.

The government's fiscal stimulus is providing sectoral support, particularly to industry (such as higher incentives for foreign direct investors), tourism, SMEs and measures aimed to support employability.

Apart from sustaining existing industry, another approach is the government's strategy to support emerging fast-growing sectors such as eco-innovations, the green economy, pharmaceuticals and biotechnology. It is doing this through infrastructure development (in the case of biotech and renewables) and through providing incentives for technology adoption and diffusion. This is coupled with efforts to create a more 'business friendly' environment through the simplification of administrative procedures, e.g. for new businesses, including start-ups and SMEs, wishing to set up shop in Malta.

One new project championed by the Malta Council for Science & Technology (MCST), aims to develop a sector-specific research strategy for manufacturing and an action plan that should identify the areas in which to target research and innovation.

Developing new growth sectors must also be coupled with adequate regulatory support for effective diffusion and adoption of innovative technologies. There has been slower momentum on this front. For example, the current strategy to establish a low-carbon economy is based on incentives and voluntary schemes such as the provision of grants for the installation of renewables in industry and households and voluntary measures to increase energy efficiency (such as eco-labelling and eco-audits). The national energy and water providers (Enemalta and the Water Services Corporation) have partnered with IBM to install 'intelligent' electricity and water meters in all domestic and commercial outlets. This would make Malta the 'world's first smart grid island'. This approach does not warrant the creation of demand for these innovative technologies that is best addressed through an appropriate regulatory framework supporting innovation adoption and diffusion⁽²⁸⁾.

The government is also considering using procurement to stimulate demand for innovation. A pilot project led by MCST aims to identify niche areas for innovative public procurement, taking into account small scale and critical mass.

²² Deloitte. Malta Business Sentiment Survey 2009.

²³ Times of Malta. Dedicated Micros get Government Assistance. 28 April 2009.

²⁴ Deloitte. The Global Economic Crisis: A Local Perspective. Deloitte Malta Business Sentiment Survey Report 2009.

²⁵ Malta Ministry of Finance, Economy & Investment (2008): Malta: Update of Stability Programme 2008-2011, Addendum: Budgetary Stimulus Measures Proposed in the Framework of the European Economic Recovery Plan p1.

²⁶ Malta Enterprise. Personal communication.

²⁷ Minister of Finance. Economy & Investment (2009), Concluding Speech at Ernst & Young Conference, 'Weathering the Challenges', Floriana 15 July 2009.

²⁸ Meadway J. and Mateos-Garcia J. (2009), Demanding Growth: Why the UK needs a Recovery Plan based on Growth & Innovation, NESTA Policy Report 1March 2009.

Although Malta did not feel the full blown effects of the crisis mainly because it was successful in containing job losses, the recovery period may not be as smooth. The government's stimulus package in response to the crisis has been criticised for focusing too much on the short-term whilst less attention has been paid to investments in innovation, research and development which would help secure medium- to longer-term competitiveness⁽²⁹⁾.

1.2 Recent trends in the national innovation performance

This section analyses Malta's innovation performance based on a core set of European Innovation Scoreboard (EIS) indicators.

According to Eurostat data for 2007, total investment in R&D (GERD) reached 0.6% of GDP equivalent to approximately EUR 32.68 million; this is below Malta's Lisbon target of investing 0.75% of GDP in research and innovation and well below the EU-27 average of 1.83%⁽³⁰⁾. Of the total GERD, the business sector (BERD) accounted for 0.39% of the GDP, the government sector 0.02% and the higher education sector (HERD) 0.19% of the GDP. Public expenditure on R&D stabilised in 2004 to 2006, but experienced a 2.2% decrease in 2008 compared to 2007⁽³¹⁾, while BERD decreased over 2005 to 2007 and is projected to decrease further in 2009 according to Eurostat extrapolations.

Malta's innovation performance has progressively improved over 2004 to 2008, with its summary innovation index (SII) increasing over this period (from 0.274 in 2004 to 0.329 in 2008). However, this growth was not sufficient to keep up with developments at EU level so that Malta remains in the group of 'catching up' countries, with an innovation performance lying well below the EU-27 average (SII = 0.329 compared to the EU-27 SII average of 0.475 in 2008⁽³²⁾).

In 2004 to 2006, Malta and Cyprus, two of the smallest economies in the European Union, were classified amongst the catching up countries in terms of their innovation performance. Cyprus's summary innovation index (SII) experienced a rapid growth rate, increasing by 13.6% in 2006 to 2007 and increasing steadily in 2007 to 2008, while Malta's SII did not experience a similar growth rate and slowed down somewhat in 2007 to 2008. Thus the disparity among the countries widened so that while Cyprus climbed to join the moderate innovators in 2007, Malta is still trailing behind with the catching up countries. It leads in its group ahead of Lithuania and Latvia.

Malta is experiencing fast performance growth rates in certain indicators such as throughputs, with a substantial increase in patents and community designs. Thus the innovation system seems to have responded adequately to the challenge of increasing patents identified in the TrendChart Report of 2007, and has relative strengths in finance and economic effects, where it was the only catching-up country with an above-EU-average performance⁽³³⁾. Firm investments recorded an improvement. Medium to high tech exports are also showing a positive upward trend.

The strengths lay in certain applications indicators where Malta is a leader in high-tech exports and sales of new-to-market products. Broadband penetration amongst firms has increased steadily and is expected to reach 100% in 2009. On the other hand, the innovation performance of SMEs remains a weakness in terms of the low percentage introducing product or process innovations (14.4%) which is well below the EU-27 average (32.9%), whilst these perform better with regard to the introduction of organisational and marketing innovations. In fact, non-R&D innovation expenditures lie above the EU average.

Over the years, the low availability of a human resource base with skills in science, engineering and technology has been a persistent feature of the system and has represented a challenge⁽³⁴⁾. Although the number of graduates with a first degree in science and social sciences increased in 2005 to 2008

²⁹ Times of Malta, Medium Term Effects of Crisis Might Be Harder on Malta. Economist" 9 July 2009

³⁰ Eurostat data.

³¹ National Statistics Office (2009). Expenditure on Research & Development in the General Government Sector 2006-2008. Release no. 118/2009.

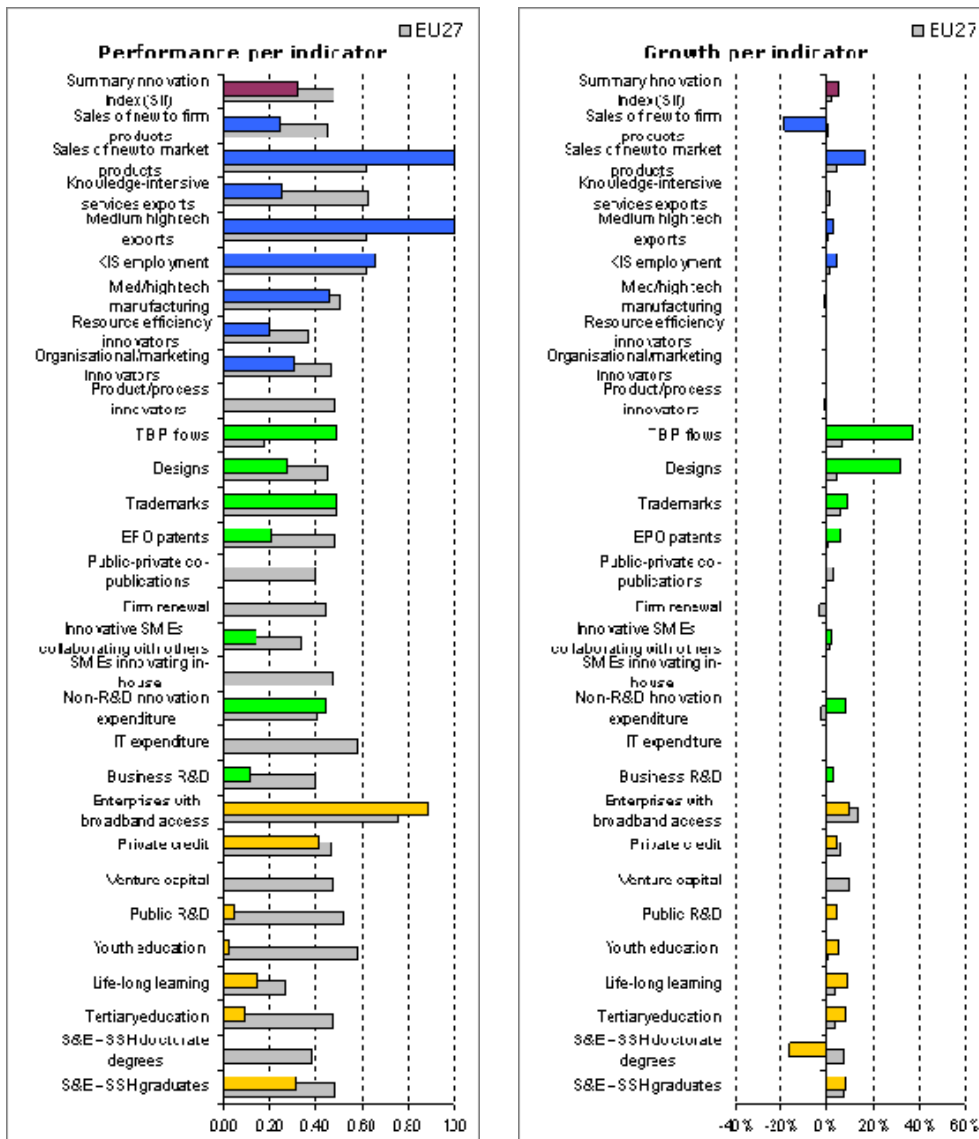
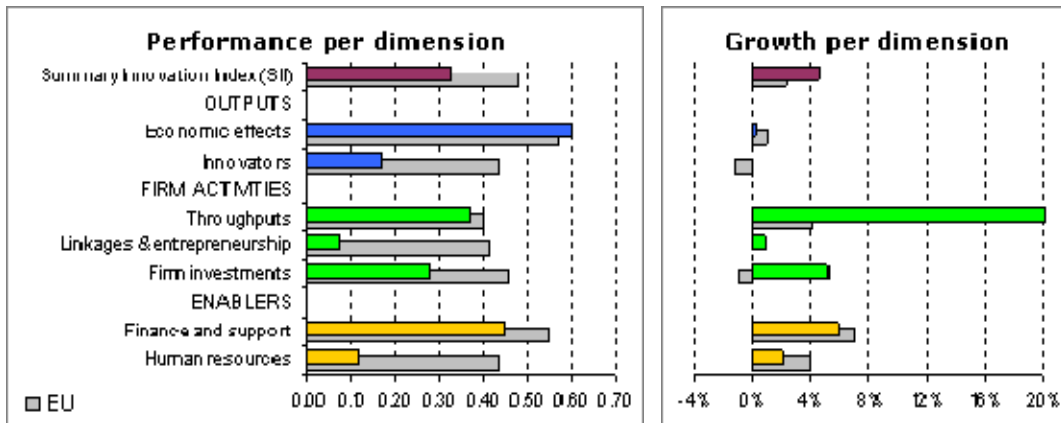
³² European Innovation Scoreboard 2008

³³ European Innovation Scoreboard 2008

³⁴ Human resource development in R&I is identified as a challenge in the TrendChart Reports 2004-2005, 2006, 2007, 2008, 2009.

contributing to nurturing a population with a tertiary education, it is below the EU average, and the percentage of doctoral graduates in these subjects has remained low in 2003 to 2007 and very much below the EU average.

Exhibit 2: European Innovation Scoreboard



	2001	2002	2003	2004	2005	2006	2007	2008	Growth
SII				0.274	0.280	0.292	0.315	0.329	4.7%
ENABLERS									3.4%
Human resources									2.0%
1.1.1 S&E and SSH graduates	18.9	23.4	24.0	--	27.8	31.8	--		7.9%
1.2.2 S&E and SSH doctorate graduates	0.15	0.13	0.04	--	0.07	0.03	--		-16.8%
1.1.3 Tertiary education	9.4	8.8	9.2	11.0	11.4	12.0	12.5		8.0%
1.1.4 Life-long learning	--	--	--	4.3	5.3	5.5	6.0		8.7%
1.1.5 Youth education	--	--	45.1	51.0	53.7	50.4	54.7		4.9%
Finance and support									5.8%
1.2.1 Public R&D expenditures	--	0.20	0.18	0.18	0.19	0.21	0.21		3.9%
1.2.2 Venture capital (3-year average)	--	--	--	--	--	--	--		--
1.2.3 Private credit	1.14	1.10	1.01	1.07	1.07	1.16	1.19		4.1%
1.2.4 Broadband access by firms	--	--	62.0	--	78.0	83.0	89.0		9.5%
FIRM ACTIVITIES									11.2%
Firm investments									5.2%
2.1.1 Business R&D expenditures	0.00	0.00	0.00	0.35	0.41	0.44	0.39		2.7%
2.1.2 IT expenditures	--	--	--	--	--	--	--		--
2.1.3 Non-R&D innovation expenditures	--	--	--	0.82	--	1.10	--		7.6%
Linkages & entrepreneurship									0.9%
2.2.1 SMEs innovating in-house	--	--	--	--	--	--	--		--
2.2.2 Innovative SMEs collaborating with others	--	--	--	5.3	--	5.7	--		1.9%
2.2.3 Firm renewal (SMEs entries + exits)	--	--	--	--	--	--	--		--
2.2.4 Public-private co-publications (2-year avg.)	--	0.0	0.0	0.0	0.0	0.0	--		0.0%
Throughputs									20.1%
2.3.1 EPO patents	13.9	10.1	13.4	11.3	21.6	--	--		5.6%
2.3.2 Community trademarks	20.4	12.6	55.2	67.3	74.3	157.5	127.1		8.3%
2.3.3 Community designs	--	--	7.6	--	2.5	19.8	46.7		32.4%
2.3.4 Technology Balance of Payments flows	--	0.34	0.33	0.38	1.72	2.77	--		37.5%
OUTPUTS									0.2%
Innovators									0.0%
3.1.1 Product/process innovators (SMEs)	--	--	--	14.4	--	--	--		0.0%
3.1.2 Marketing/organisational innovators (SMEs)	--	--	--	26.0	--	31.8	--		
3.1.3 Resource efficiency innovators									
3.1.3a Reduced labour costs	--	--	--	6.9	--	11.8	--		
3.1.3b Reduced use of materials and energy	--	--	--	4.9	--	7.7	--		
Economic effects									0.3%
3.2.1 Employment in medium-high/high-tech manuf	8.03	8.17	6.15	7.66	6.64	6.55	6.16		0.0%
3.2.2 Employment in knowledge-intensive service	12.34	11.35	12.86	12.01	13.06	13.41	15.22		4.3%
3.2.3 Medium/high-tech manufacturing exports	--	67.0	68.3	71.1	71.0	74.5	--		2.7%
3.2.4 Knowledge-intensive services exports	--	--	--	--	--	23.0	--		0.0%
3.2.5 New-to-market sales	--	--	--	13.6	--	24.8	--		16.3%
3.2.6 New-to-firm sales	--	--	--	8.7	--	3.8	--		-18.4%

1.3 Identified Challenges

An overarching challenge facing the innovation system is that of seeking more synergy amongst the numerous innovation (and research) initiatives and measures that have been launched and are being implemented by a number of public agencies, principally the Malta Council for Science & Technology and Malta Enterprise.

Challenge 1: Increasing financial resources in R&I in niche areas of economic importance

The challenge of increasing financial and human resources for research and innovation is addressed in the National Strategic Plan for Research & Innovation and the National Reform Programme (NRP) 2008-2010 and has gained positive momentum in the past three years with a number of measures aimed at increasing investments in infrastructures, scholarship schemes and incentives for businesses.

As indicated in Section 1.2 above, public investments in R&I experienced a 2.2% decline in 2008 compared to 2007 figures. Eurostat data extrapolations also point to a decrease in business sector

R&I for 2009. These trends leave Malta struggling to achieve its 'modest' Lisbon target⁽³⁵⁾ of investing a total of 0.75% of GDP in R&I by 2010.

The second programming period of structural funds (2007 to 2013) has provided the opportunity to earmark a substantially larger portion of funds for R&I compared to the first period. In fact, the bulk of long-term R&I investments are derived from these funds and tend to be targeted to strategic areas of economic importance (including ICT and biotechnology). Briefly, the investments are being channelled to support infrastructures, mainly at the university and the vocational college, bursary schemes and postdoctoral training and aid schemes for enterprise, all of these being priority themes in the NRP 2008-2010. A specific package of incentives promoting industrial research and development was launched in June 2009 by Malta Enterprise.

Challenge 2: Boosting human resources in science and technology in emerging sectors of the economy

The shift to a knowledge-intensive economy requires creating jobs in the high-skills end of the labour market and supporting this with adequately qualified people.

Although the number of people with a tertiary education increased in 2003 to 2007, it still remains well below the EU average as does the number of S&E and doctoral graduates. In 2008, the number of employees engaged in R&D activities in the general government sector that includes higher education, increased by 8%, although the majority were doing part-time R&D work. There was a predominance of men among PhD researchers and technicians, while women were in the majority among support staff⁽³⁶⁾. There are no data relating to researchers employed in the private sector.

The Investment Attractiveness Survey 2009 undertaken by Ernst & Young among foreign-owned companies based in Malta reports a 'skills shortage across all sectors and levels from technicians to professionals'⁽³⁷⁾.

In view of this scenario, the challenge lies firstly in ensuring an adequate supply of skilled professionals and secondly in providing necessary skills in upcoming and growing sectors of the economy such as Information & Communication Technology (ICT), aviation maintenance and engineering. The education system, including tertiary and vocational education, should be able to anticipate future skills needs in order to effectively serve these areas of the economy.

The challenge of increasing the number of science and technology graduates was a priority in the first NRP 2005-2008 and is reiterated in the second NRP 2008-2010 with specific measures supporting undergraduate and postgraduate training and vocational skills training, with a focus on ICT, engineering and aviation (see Section 3.1.1 of this report).

Challenge 3: Creating an enabling environment that nurtures innovation and entrepreneurship amongst business enterprise, including SMEs

The characteristics of the business environment in Malta require that policies aimed at stimulating innovation be tailored to its specific needs. The majority of indigenous firms, low-tech micro-enterprises and SMEs face specific barriers hampering innovation, namely the high innovation costs and lack of funds. The results of the Business & Innovation Survey 2006 undertaken by the National Statistics Office⁽³⁸⁾ indicate that a low percentage of enterprises (19% of the respondents) are effectively engaged in product and/or process innovations⁽³⁹⁾. On the other hand, the large firms that are typically multinational companies in high value added manufacturing sectors such as electronics and generic pharmaceuticals need to be incentivised to sustain their investments in Malta (and supplied with an adequate skills base – see Challenge 1 above).

³⁵ European Commission COMM (2009). Implementation of the Lisbon Strategy Structural Reforms in the context of the European Economic Recovery Plan: Annual country assessments – a detailed overview of progress made with the implementation of the Lisbon Strategy reforms in Member States in 2008, 34/2.

³⁶ National Statistics Office (2009). Expenditure on Research & Development in the General Government Sector 2006-2008. Release no. 118/2009.

³⁷ Ernst & Young (2009). Weathering the Challenges: Malta Investment Attractiveness Survey 2009, p5.

³⁸ National Statistics Office. Business Research & Innovation news release no.166/2008 released 23 September 2008.

³⁹ Ibid.

The NRP 2008-2010 touches on important factors that enable the sustenance of an innovative environment such the simplification of administrative burdens and reducing costs of doing business in Europe, speeding up reforms in the financial and labour markets and the urgent implementation of flexicurity principles, as well as adopting the Small Business Act. Malta Enterprise implements a variety of aid schemes for enterprise including supporting start-ups and e-business development as well as schemes aimed at tapping new (international) markets.

Challenge 4: Developing sector-specific innovation policies, strategies and measures in areas of national priority

In line with the National Strategic R&I Plan's objective of focusing national investments in select areas offering Malta a competitive advantage, an imminent challenge relates to developing sector-specific research strategies and action plans in these priority areas (namely ICT, energy and environment, health and biotech and high value-added manufacturing). The aim is that of setting up of platforms of strategic importance, with the involvement of key stakeholders in the public and private sectors, to formulate policies aimed at stimulating research in specific niche areas in these sector. The platforms will be supported by the investments in research infrastructures (such as the EUR 11 million allocated to set up a biotech park) and human resource capacity building.

A project supported through the ERDF⁽⁴⁰⁾ 2007-2013 funds targets the manufacturing sector. It intends to identify the competitive needs of the industry and also implement two research projects. A separate health strategy is also a target area in the NRP 2008-2010.

Indirect measures that are supporting this sectoral approach include the Innovative Clusters & Collaboration Scheme (MT_48)⁽⁴¹⁾ aimed at supporting formal collaboration between enterprises by assisting in the setting-up and expansion of innovation clusters, and EuroMediti, a public-private initiative that is implementing technology transfer projects in areas of interest to the Euro-Mediterranean region (such as renewable energies and ICTs).

Challenge 5: Creating demand for innovation through public procurement

One of the NRP objectives is to create demand for innovation through public procurement.

In 2008, the Malta Council for Science & Technology (MCST) in collaboration with the Commerce Division, launched a short seminar series for public officials on what constitutes innovative procurement, its uses, how it can leverage innovation and innovative solutions, and the issues that need to be considered when applying innovative procurement as a procurement vehicle of strategic choice.

The MCST is now working on an action plan in collaboration with the Department of Contracts in order to operationalise innovative public procurement; a pilot project should be launched by 2010. It is also coordinating the FP7 OMC-NET project called Era-Prism that is addressing in one of its work packages, public procurement for research and innovation with a focus on small scale markets.

Exhibit 3: Main innovation policy challenges

Description of challenge	Relevant indicators and trends
Challenge 1: Increasing financial resources in R&I in niche areas of economic importance	Total investments in R&I, at 0.6%GDP in 2007, fall short of Malta achieving its Lisbon target of investing 0.75% of GDP in R&I by 2010.
Challenge 2: Boosting human resources in science and technology in emerging sectors of the economy	Low level of S&T graduates compared to the EU; low female participation in R&D; skills shortages for emerging sectors of the economy.
Challenge 3: Creating an enabling environment that nurtures innovation and entrepreneurship among business enterprises, including SMEs	Low number of SMEs innovating in-house; lower technological innovations compared with non-R&D innovations.

⁴⁰ European Regional Development Fund Allocation for Malta 2007-2013.

⁴¹ Pro Inno TrendChart Policy Measure for Malta,

<http://www.proinno-europe.eu/index.cfm?fuseaction=wiw.measures&page=detail&id=9590&CO=40>

Challenge 4: Developing sector-specific innovation policies, strategies and measures in areas of national priority	There is a trend to channel public investments in sectors offering Malta a comparative advantage, namely ICT, health and biotech, high value-added manufacturing and energy and environment.
Challenge 5: Creating demand for innovation through public procurement	Low number of demand-side measures currently make up the innovation system.

Opportunities	Threats
<ul style="list-style-type: none"> • The strong drive on ICT policies and strategies and the highly developed ICT infrastructure is attractive for FDIs. • Higher proportion of structural funding for R&I infrastructures and human resources represents an opportunity for faster 'catching up'. • Platforms of strategic importance could provide the space for stronger linkages and coordination among innovation actors on policy priorities and areas of action. 	<ul style="list-style-type: none"> • Lack of skilled personnel in certain technology areas. • Higher labour costs compared to emerging economies. • High administrative burdens for businesses. • Delays in delivery and implementation of innovation measures. • Innovation support fragmented amongst the various support organisations (ME, MCST, Chamber).

2. Public Support to Innovation

2.1 Main objectives for innovation policy

The National Strategic Research & Innovation Plan 2007-2010 sets out a vision for 'research and innovation [to be] at the heart of the Maltese economy to spur value-added growth and wealth'. Against this backdrop, Malta has set a target of investing 0.75% of GDP in research and innovation expenditure by 2010, of which 0.30% GDP will be contributed by the public sector and 0.45% derived from private R&D expenditure.

Since Malta currently lacks a stand-alone national innovation policy, the objectives and goals for innovation are drawn out in a number of policy documents that address different aspects of the innovation system. The National Strategic Research & Innovation Plan 2007-2010 offers a broad framework, guiding public investments in research and innovation. The rationale for public intervention in research is for this to support business-oriented research and near-to-market innovations and thus the focus is on research for development and innovation. The Plan recommends the setting up of platforms in four areas that are considered strategic for Malta: ICT, health-biotech, energy and environment, with a focus on water and renewable energies and value-added manufacturing. These platforms could serve as interesting test beds for successfully customising and subsequently exporting locally-generated R&I know-how to the southern region, making Malta a bridge between the North and South.

The principal policy thrusts of the Plan relate to building critical mass in these priority areas both in terms of boosting the human resource capital in science and engineering and strengthening research infrastructures. It also calls for more coordinated approaches to innovation and research policymaking across ministries and departments.

With regard to stimulating innovation in the private sector, the recommendations of the National R&I Plan centre on the need to enable SMEs to innovate and instil an innovation culture as well as stimulating further industry-academia collaborations. However, it is principally the industry strategy that addresses issues of industry restructuring towards high value-added services and products and provides detail on clustering approaches and policies.

With a specific axis dedicated to knowledge and innovation, the National Reform Programme prioritises areas of intervention for 2008 to 2010 and gives an indication of the direction of policy response to current challenges in the innovation system. Thus apart from the objectives described above, the NRP calls for more demand-side innovation policies such as stimulating innovation through public procurement.

Exhibit 4 below summarises the objectives and targets for innovation policy as presented in the above-mentioned documents.

Exhibit 4: Main innovation policy documents

Policy document	Highlights of innovation policy objectives
National Strategic Research & Innovation Plan 2007-2010	<ul style="list-style-type: none"> leverage state R&I funding to address pressing national issues relating to water, energy and the environment. focus public resources and capabilities in a select number of value-added economic sectors in order to obtain value-added R&I. put in place the appropriate supporting and enabling environment for SMEs to innovate. facilitate the establishment of an enabling platform that will allow Maltese enterprises in partnership with overseas institutions and business to enhance imported know-how and technology for export to the Southern Mediterranean region.

	<ul style="list-style-type: none"> • establish the appropriate mechanism for a business to academia nexus and an intellectual property framework for public funded research. • develop a national pro-innovation culture supportive of invention, risk-taking and entrepreneurship.
Industry Strategy for Malta 2007-2010	<ul style="list-style-type: none"> • inculcate an entrepreneurial spirit in the Maltese business sector. • reinforce Malta's human resource capital comparative advantage. • promote the development of clusters and network industry and the government. • achieve quality high added-value and productivity growth in industry. • incentivise the research, development and innovation-capacity. • enable access to finance. • revitalise the infrastructure to secure competitiveness of industry.

2.2 Innovation governance system

2.2.1 Governmental bodies

The governance of the innovation system has not experienced significant changes since the previous reporting period (2007 to 2008).

The research and innovation portfolio falls under the responsibility of the Resources & Rural Affairs Ministry (MRRA). The Malta Council for Science & Technology (MCST) initiates policy on behalf of the Ministry, guided by the recommendations of the Strategic Research & Innovation Plan. The MCST is also undertaking to consult with key stakeholders in the public and private sectors on an ad hoc basis as necessary.

A related policy area which concerns enterprise growth and development, is overseen by the Ministry of Finance, Economy & Investment (MFEI). MFEI, through Malta Enterprise, implements policies aimed at supporting the diversification of industry, attracting foreign investment and stimulating innovation in local businesses.

The Planning & Priorities Coordination Division (PPCD) which is the national authority managing Structural Funds has played a central role in evaluating project proposals for national research and innovation projects under the priority axis on Knowledge & Innovation of Operational Programme I – Investing in Competitiveness for a Better Quality of Life.

On economic, fiscal and social policy issues, a broader level of consultation takes place within the Malta Council for Economic and Social Development (MCESD), where the Ministry of Finance is represented. Officially appointed by the Prime Minister, MCESD is a tripartite forum comprising trade unions, employers' organisations and the government, whose mission is to promote social dialogue and consensus amongst the social partners. MCESD is also responsible for discussing competitiveness issues, however, to date there has been no formal coordination with the Competitive Malta Foundation, the corporate lead set up to work on these issues.

2.2.2 Main bodies managing implementation of policies

The key public agencies implementing research and innovation initiatives are the Malta Council for Science & Technology (MCST) and Malta Enterprise (ME). The main remit of MCST is that of acting as the principal agency involved in developing science and technology policy and in implementing the recommendations of the National Strategic R&I Plan, including managing the national R&I funding programme. It cooperates very closely with Malta Enterprise (ME) which works more directly with local enterprise; ME administers the enterprise aid schemes launched in 2008 to 2009 and the research and development package for enterprise, including participation in Eureka (see Section 2.3.1 and 2.3.2. of this report). It also facilitates technology transfer opportunities through its involvement in the Enterprise Europe Network (EEN) that now also encompasses the Innovation Relay Network.

Both agencies maintain close links with the University of Malta which is the main research performer and provides RTDI services to public and private sectors and other entities including the National Commission for Higher Education (NCHE) which is currently overseeing the reform of the further and higher education sector.

The Malta Chamber of Commerce, Enterprise & Industry is the national contact organisation for SME participation in FP7. The Chamber enjoys broad membership from within the local industrial community and can act as an effective bridge, conveying the private sector's needs with respect to innovation support requirements to the relevant public agencies, namely MCST and ME. The Chamber coordinates participation of SMEs in EU-funded programmes, mainly FP7. It is also active in providing the government with feedback on national budget measures, including those concerning innovation support for enterprise⁽⁴²⁾.

2.3 Public funding to innovation

2.3.1 Review of the current range of support measures for innovation

The analysis in this section is based on the Policy Factsheet for Malta – see Annex I of this report.

The innovation policy mix for Malta shows that the largest proportion of measures, expressed as a percentage of the total measures, targets the promotion and growth of innovative enterprises. This is followed by research and technology measures providing direct support in the form of grants, to business R&D; this priority also features as the most important policy category for the EU-27. Horizontal R&I policies aimed at strengthening research infrastructures have grown in importance in recent years, and have been allocated a substantial budget. In fact, budgetary data show a positive skew towards supporting research infrastructures mainly at the university (with approximately EUR 45 million allocated for this purpose over 2007 to 2013); this is part of the government's long-term strategy to build a national R&I framework that is supportive of research excellence and facilitates international collaboration.

An in-depth analysis of the policy mix reveals that policy priorities for Malta lie in the provision of advisory support to enterprises, innovation in services and policies to stimulate innovative start-ups. These fall under the category of 'enterprise innovation' and they are also amongst the higher policy priority areas in the EU-27. The main aspects of the innovation process addressed are awareness raising amongst firms on innovation and the promotion of entrepreneurship as well as innovation diffusion and adoption.

Enterprise aid schemes have received a boost in 2008 to 2009 with a package of incentives that was revisited to cater for the needs of indigenous enterprises, mainly SMEs, and allocated EUR 20 million over a six-year period from Malta's structural funds allocation for 2007 to 2013. In addition, a separate package of incentives was launched in 2009 to encourage experimental development and research projects in industry. R&D collaborative projects are also priorities, mainly in terms of the number of measures that are promoting such collaboration, other than in real budgetary terms.

Although measures targeting human resource capacity building feature more prominently in the TrendChart-ERAWATCH database since 2006, mainly thanks to a series of scholarship grant schemes, these are ranked fourth amongst the five policy categories⁽⁴³⁾, both in terms of number of measures and budget allocation. Nevertheless, measures stimulating PhDs are higher when compared to the EU-27.

⁴² Malta Federation of Industry (2009). Position Paper on Pre-Budget 2009 Consultation Process.

⁴³ The five broad categories of policy measures in the TrendChart-ERAWATCH database of support measures are: 1) governance and horizontal research and innovation policies; 2) research and technologies; 3) human resources; 4) promoting and sustaining innovation in enterprise and 5) markets & innovation culture.

The targeted research and technology fields – ICT, environment and biotechnology amongst the top three – are compatible with the priority areas identified for the EU-27. These technology areas are those flagged in the National Strategic R&I Plan 2007-2010 as providing a comparative advantage for Malta's economy. Substantial investments in ICT infrastructures are underway such as a new ICT faculty at the University of Malta, as well as investments in building new laboratories and upgrading existing facilities in engineering, biotechnology and health, and renewable energy technologies. The enterprise aid schemes also prioritise innovative activity in similar areas. Sector research strategies and action plans are being drafted for the health and manufacturing sectors – these are expected to highlight specific areas where to focus research and innovation efforts.

Structural funds are playing an increasingly important role in co-financing research and innovation measures in the 2007 to 2013 period compared to the first programming period (2004 to 2006). Approximately 9% of the total structural funds allocation has been deployed so far for research and innovation measures. Although it is problematic to calculate, in absolute terms, the total amount of national funds allocated for innovation measures (one reason being that some of these are fiscal measures), it appears that the amount of public funding for innovation has increased, especially in view of the new schemes (enterprise aid and R&D). However, the proportion of national funds versus structural funds allocated for innovation measures, on an annual basis, is similar.

The above overview indicates that Malta's policy mix is geared at promoting and supporting innovation in enterprise on the one hand and building a research and innovation capacity, mainly in academia on the other. In fact the largest proportion of measures supports companies and specifically SMEs, followed by higher education institutions.

This profile is symptomatic of an innovation system that is in a 'catch-up' phase. In a country with a restricted R&D base, there is as yet limited scope for technology-push measures (0% of measures addressing pre-competitive research) and one finds that a large proportion of the measures intend to stimulate diffusion and adoption of innovation and raising awareness amongst enterprises on innovation and entrepreneurship.

The number of non-financial incentives is limited to two types – the provision of advisory services by the national innovation agency, Malta Enterprise and two tax credit schemes (R&D Tax Credit Scheme and Investment Aid Tax Credits MT_35) managed by ME in close collaboration with the Income Tax Department.

2.3.2 New or modified support measures

A list of new support measures is provided in Exhibit 5 below.

Exhibit 5: New Innovation Policy Support Measures (since the last report)

IPM N°	Title	Innovation policy framework category	Organisation responsible
Research and development incentive package for industry:			
MT_44	Equity Funding Programme	Promote and sustain the creation and growth of innovative enterprise	Malta Enterprise
MT_48	Innovative Clusters & Collaborations Scheme	Governance and horizontal research and innovation policies	Malta Enterprise
MT_2	R&D Tax Credit Scheme	Research and Technologies	Malta Enterprise, Income Tax Department
MT_	Preparatory Technical Feasibility Studies	Research and Technologies	Malta Enterprise
MT_	ERDF Research & Development Grant Scheme for Enterprise	Research and Technologies	Malta Enterprise

Capacity building in research and innovation infrastructures:			
MT_32	RTDI Measures under Cohesion Policy 2007-2013	Governance and horizontal research and innovation policies	MCST, Malta Enterprise, Planning & Priorities Coordination Division
Aid schemes for enterprise:			
MT_31	SME Development Grant Scheme	Research and Technologies	Malta Enterprise
MT_38	Innovation Action – Grant Scheme Innovation (InnovAct)	Promote and sustain the creation and growth of innovative enterprise	Malta Enterprise
MT_40	Innovation Action – Grant Scheme Environment	Promote and sustain the creation and growth of innovative enterprise	Malta Enterprise
MT_41	eBusiness Development Grant Scheme for SMEs	Promote and sustain the creation and growth of innovative enterprise	Malta Enterprise
MT_46	Small Start-up ERDF Grant Scheme	Promote and sustain the creation and growth of innovative enterprise	Malta Enterprise
MT_47	Enterprise Energy Grant Scheme ERDF	Markets and Innovation Culture	Malta Enterprise
MT_42	Sustainable Tourism Projects by Enterprise	Promote and sustain the creation and growth of innovative enterprise	Secretariat for Tourism, Office of Prime Minister
MT_43	International Competitiveness ERDF Grant Scheme	Promote and sustain the creation and growth of innovative enterprise	Malta Enterprise

For descriptive purposes, the new innovation (and research) measures were grouped in three main categories:

- Aid schemes for enterprise – these tend to prioritise aid towards SMEs.
- Research and development incentive package for industry.
- Capacity building in research and innovation infrastructures.

In 2008 to 2009, a package of aid schemes was approved under the Malta Enterprise Act 2007. These schemes, managed by Malta Enterprise, are in large part co-financed by the European Regional Development Fund (ERDF) under the Cohesion Policy 2007-2013 and are targeted at stimulating innovation and creating an innovation culture among SMEs that constitutes the bulk of indigenous firms. Some of these schemes have a thematic focus, e.g. ICT, renewable energy and biotechnology.

Another package of research and development incentives was launched by Malta Enterprise (ME) in June 2009. This consists of both cash grant schemes and tax credits, applicable to all types of industry (including small and large enterprises), and intends to support industrial research projects, experimental development, industrial property rights and cluster development (through exchange of knowledge and expertise and by contributing effectively to technology transfer, networking and information dissemination).

The investments in infrastructure capacity building address the longer term agenda of strengthening research infrastructures, namely at the university and college for arts, science and technology, in order to build an enabling R&I infrastructure that supports research locally and facilitates participation in international collaborative research and innovation projects.

2.3.3 Strengths and weaknesses in the innovation policy support system

The analysis shows that innovation policy support is running along two binaries: on one hand policies are stimulating and increasing innovation in enterprise with a thrust to support indigenous SMEs; on the other, a substantial (financial) effort is being channelled to strengthen research capacity in academia (the university). There is an apparent gap in policy measures linking the activities of these two actors, i.e. industry and academia. As reported in previous TrendChart reports, policies/programmes promoting industry-academia collaboration are limited, with the national R&I funding programme serving as the main instrument for R&D collaboration.

The question is whether there could be more scope for facilitating industry-academia inter-linkages; judging from industry's response to the national R&I funding programme, it seems that industry has the capacity to undertake R&D collaborative projects.

There is also more scope for investments in human resource capacity building in terms of providing necessary skills to support the transition to a knowledge-based economy.

3. Innovation policy and competitiveness: an appraisal

3.1 The ability of policy to address challenges

National innovation policies set priorities based on perceived challenges while they are often motivated by international agreements and commitments, i.e. the Lisbon Agenda. Therefore national policies act and react in a complex set of overall policy priorities and commitments. In this section, building on the analysis in the previous chapters, we are investigating how well national innovation policies identify and respond to systemic challenges, which may or may not be common in other EU Member States or even other countries outside the EU.

3.1.1 How well does policy respond to innovation challenges?

The innovation challenges for Malta, based on macro-economic indicators and EIS indicators (as reported in the TrendChart over the period 2005 to 2009), have remained consistently those related to boosting financial and human resources in R&I, stimulating research in enterprise and inculcating an entrepreneurial culture. The policy mix seems to be responding to these challenges with the largest proportion of measures in the EW-TC database⁴⁴ targeting the promotion and growth of innovative enterprises, providing direct support to business R&D and strengthening infrastructures (see Section 3.3 of this report).

Innovation policy measures are benefiting from an injection of funds through the second programming period of structural funds, from 2007 to 2013. This provides an opportunity for faster growth and 'catching-up', as the funds are being targeted to address the policy priorities of the National Strategic R&I Plan and implement the NRP 2008-2010 measures. Moreover, there is scope for improved governance as the cohesion instruments 'request the adoption of at least a basic organisational set-up and the introduction of rudimentary soft elements for monitoring and assessment of the Structural Funds' financial contributions'⁴⁵.

Although identified as a persistent challenge of the innovation system, human resources in R&I remain a weakness and according to the TrendChart-ERAWATCH database, measures addressing this challenge are not adequately represented in terms of budget and numbers of measures compared to the other policy categories mentioned above. However, as discussed in Section 3.3, it is more a question of policy response having been delayed other than absence of a response altogether. An emerging issue seems to be the inability of the system to provide skilled personnel for specific technology areas (with the exception of ICT) creating potential bottlenecks for securing additional FDIs. The Skills for the Future Report⁴⁶, published by the National Commission for Higher Education (NCHE), highlights the need to invest in new specialisations required by emerging sectors whilst at the same time attempting to maintain a balance between specific and generic skills.

The existing dichotomy in the Maltese industrial system, with low-tech indigenous firms on one hand and high-tech manufacturing FDIs (such as biotechnology and pharmaceuticals) on the other, has necessitated a tailoring of the innovation policy support.

The Malta Enterprise Act established the principle of positive action towards SMEs by offering higher intensity levels, i.e. a higher percentage of assistance to SMEs compared to that provided to large enterprises. It has also diversified its range of schemes that were originally focused on providing loan guarantees and has evolved to encompass principally grants, fiscal incentives and equity financing to encourage innovation, internationalisation and market diversification across small and large firms. The question remains as to whether indigenous firms, both start-ups and well-established companies, have

⁴⁴ TrendChart ERAWATCH-database of research and innovation support measures
<http://www.proinno-europe.eu/index.cfm?fuseaction=wiw.measures&page=list&CO=40>

⁴⁵ Pro-Inno Policy Trendchart (2009). European Innovation Progress Report 2008. European Commission Enterprise and Industry.

⁴⁶ National Commission for Higher Education (2009), Skills for the Future.

the absorption capacity to benefit from these schemes or whether they need further specific support related to more deep-seated problems such as the ability to recognise new market opportunities, and sourcing the knowledge they need on (technology) developments for new product and process developments.

The challenge to instil a culture for entrepreneurship is not adequately engrained in the education system from primary level through to university (with only a number of sporadic initiatives, e.g. Young Enterprise Competition and modules on creativity and entrepreneurship delivered at the university).

The above indicates that the main system failures relate to capability, network and institutional failures⁽⁴⁷⁾. Capability failures refer to a situation where enterprises are lacking managerial skills, technological learning and absorption capacity affording for limited take-up of innovation support, whilst network failures relate to a need for the system to encourage and stimulate stronger synergy among actors providing innovation support and improved quality of links.

The requirement for improved innovation governance is being tackled through the setting up of platforms of Strategic Importance that should serve to create 'more formal mechanisms for coordination'⁽⁴⁸⁾ amongst the private and public sectors and academia, in areas that have the potential to stimulate value-added RTDI.

3.2 Effectiveness of policy design

The Policy Mix Country Review for Malta⁽⁴⁹⁾ (2006) suggests that a broad challenge affecting the NIS system is that of 'ensuring appropriate dovetailing of change processes underway at many different levels and sectors, in particular university and higher education reform and Malta Enterprise's work on a national innovation strategy through its ongoing RIS project (MARIS)'. The Pro-Inno TrendChart country reports flag the importance of generating synergy among public agencies involved in implementing new strategies and policy measures.

There is evidence of greater synchronisation across different strategies with respect to determining the *strategic orientation* of research and innovation policies and measures. The recommendations of the National Strategic R&I Plan have served as a framework and guide in laying out the objectives of the National Strategic Reference Framework 2007-2013 and in formulating the measures of the Knowledge & Innovation pillar in the National Reform Programme 2008-2010. The drafting of the NRP measures for innovation and research was the result of inputs from MCST, ME and various sectoral ministries (e.g. IT) reporting back to the Management Efficiency Unit within the Office of the Prime Minister.

At the level of policy design, this concern is being addressed through bottom-up participatory approaches that encourage the engagement of broad stakeholder groups in developing sectoral strategies and action plans. Recent initiatives relate to a consultation process that was launched in 2008 by MCST to develop a sectoral research strategy for health, and a similar effort is planned for the manufacturing sector. The challenge will be to interlink these projects with related initiatives championed by sectoral ministries such as linking the health research strategy with the government's plans to develop healthcare as a sector of regional excellence.

There is, however, scope to determine more clear '*ownership*' on matters relating to innovation policy initiation and implementation. Although the two ministries with shared competencies on innovation have been collaborating more closely, for example in preparing Malta's position on innovation for the Competitiveness & Growth Working Party, there is a need to determine who will 'take the lead', such as on the implementation of the Industry Strategy for Malta 2007-2010. Probably this situation was made less clear when in 2007 the research and innovation portfolio shifted from the Office of the

⁴⁷ Pro-Inno Policy Trendchart (2009). European Innovation Progress Report 2008. European Commission Enterprise and Industry.

⁴⁸ Ibid.

⁴⁹ UNU-MERIT (2006): Policy Mix Country Review Malta 2006.

Prime Minister to the Ministry for Resources & Rural Affairs (MRRA) whilst enterprise policy was retained within MFEI.

3.2.1 Process of delivery

Innovation is being given more prominence by the national agency Malta Enterprise (ME) which has been designated as the agency responsible for implementing and monitoring the aid schemes for enterprise; an incentives division was set up within the agency to administer these schemes.

The Malta Council for Science & Technology (MCST) retains its central position as the public body implementing the recommendations of the National Strategic R&I Plan. The Plan is undergoing a review process that started in 2008 and aims to update the strategy in light of current developments.

The two entities have been collaborating more closely with other ministerial departments and agencies in coordinating the implementation of innovation policy measures. For example, the MCST has established contact with the Department of Contracts on the innovative public procurement initiative (NRP Measure). Malta Enterprise has also been working more closely with the National Statistics Office on R&D data collection in enterprise.

There have been some delays in the delivery of certain policy measures, notably the launch of the R&D incentive package which was delayed until June 2009.

3.3 Impact of public support for innovation

Exhibit 6: Policy measures and initiatives addressing innovation challenges and corresponding trends in EIS Indicators

TrendChart reporting period	Challenge identified in TrendChart country report	New policy measures and initiatives addressing the identified TrendChart challenges	Trends in EIS indicators (qualitative/quantitative)
2005	The development of an innovation system focused on the needs of the economy that seeks to stimulate business R&I.	Measures aimed at stimulating innovation in enterprise (some included in the Business Promotion Act 2001), e.g. fiscal incentives (MT_2), a start-up programme (MT_46) and public investments in ICT. RIS project to develop a regional innovation strategy (Malta Enterprise's MARIS Project). Use of foresight for strategic planning for national R&I investments.	Research and innovation given higher priority on national policy agenda. A review of national framework for research and innovation carried out. Malta leads in terms of 'Applications' indicators due to high tech exports.
	Improving patenting activity.	-	EPO patents per million population increased.
	Increasing the percentage of S&E graduates and people with tertiary degrees, including PhDs in science and technology.	-	-
	Improving the statistics for tracking progress in innovation.	The National Statistics Office (NSO) improved the methodology to capture R&I statistics that is more in line with approach used by Eurostat.	NSO publishes figures for R&D in the general government sector for the period 2004-2005. Public investments in R&D estimated at 0.19% in 2005.
2006	Increasing S&T graduates and stimulating science careers.	Grant scheme for post-graduate bursaries (MGSS) – MT_24.	Population of S&E graduates increased. Post-graduate population below the EU average.
	Increasing R&D expenditure in business enterprise.	National R&I funding programme is launched financing projects in four strategic areas MT_23.	BERD, at 0.08% in 2003, rose to 0.44% of GDP in 2006. GOVERD increased from 0.10% to

	Supporting business and entrepreneurship.	National Strategic Plan for R&I is launched, together with the Industry Policy for Malta. Participation in the Eureka Programme. Discover enterprise project launched to stimulate entrepreneurship education projects.	0.21% of GDP. SMEs innovating in-house remains below the EU average; Venture capital fund never took-off.
2007	Human resource development in R&I.	-	Population of S&E graduates increased post-graduate population below the EU average.
	Enhancing business R&D expenditure and innovating SMEs in-house.	Malta Enterprise Act (2007) supersedes the Business Promotion Act (2001) and proposes a new set of measures for business innovation and research. Simplification procedure launched and the Better Regulations Unit set-up.	BERD decreased in 2007.
	Increasing patents and community designs.	-	-
2008	Developing a human resource base with skills in science, research and innovation.	Skills training programme at vocational level. Reform of the higher education process addressing the issue of skills mismatches in the labour market.	Population of S&E graduates increased postgraduate population below the EU average.
	Sustaining enhanced investments in business R&D and encouraging innovation of SMEs.	Package of grant schemes for enterprise launched (MT_38, 40, 41, 46, 47). Exploratory award to stimulate participation in FP7 (MT_29). Investments in national R&I infrastructures, ICT.	BERD decreased in 2008.
	Improving the national statistical framework to better capture innovation progress.	-	-
2009	Increasing financial and human resources in R&I.	Capacity building in research and innovation infrastructures (MT_32). Aid schemes for enterprise. Research and development incentive package for industry.	-
	Creating an enabling environment that nurtures innovation and entrepreneurship amongst business enterprise, including SMEs.	Simplification of procedures for businesses.	-
	Developing sector-specific innovation policies, strategies and measures in areas of national priority.	Two initiatives relating to setting up a manufacturing and health platform and action plans for research.	-
	Creating demand for innovation through public procurement.	Initiative, led by MCST, to develop an action plan on how to operationalise innovative public procurement. MCST participation in the FP7 OMC-NET Project, Era-Prism that is investigating the potential for public procurement for R&I in a small country context.	-

Source: TrendChart Country Reports for Malta 2005 to 2009

Since research and innovation were given a higher priority on the national policy agenda (with the launch of the national Strategic R&I Plan in 2006), the policy responses have become more targeted with a more clear definition of demand-side and supply-side measures. As per the recommendations of the national strategy, public funds are being channelled in four areas that have been identified as offering a growth potential for Malta. This has resulted in some clustering activity in domains such as ICT and biotechnology.

While the percentage of S&T graduates has been increasing over the years, indicating that the government's incentives to promote science courses at the university are yielding fruits, the low level of PhDs in S&T has remained a persistent feature of the system (see Exhibit 6 above), with the number of people with S&T doctorates remaining well below the EU average over the 2005 to 2009 period. Other than attributing this to an ineffective policy response, it is probably fair to state that the government's initiatives to boost PhDs (measures MT_24 and MT_39) have not born fruit. In effect with a full-time PhD taking at least four years, perhaps a shift in the EIS indicators could be expected after 2010.

Similarly, the innovation measures stimulating innovation in the business sector (mainly the aid schemes for enterprise MT_31, 38, 40, 46 and the research and development package for industry MT_2, 45 and 48) have only recently been launched and thus it is difficult to assess their impacts against the EIS indicators. There are indications of successful uptake (such as of the Eureka scheme that over the past two years has leveraged EUR 1.2 million worth of local research and development, and the high interest registered for the International Competitiveness MT_43 and Start-Up Grant Schemes MT_46⁽⁵⁰⁾), with 12 new start-up companies and 17 expansions approved by Malta Enterprise in the first six months of 2009⁽⁵¹⁾.

Nonetheless, the analysis also points at the fact that the policy response was delayed: despite persistent problems and challenges facing the innovation system, innovation measures targeted at boosting the human resource base were only launched in 2006 and 2009 and those addressing business innovation were given a boost in 2008 to 2009, with a wider mix of incentives made available and a specific package of incentives focused specifically on SMEs.

This analysis cautions against a simplistic 'cause and effect' approach to understanding the impacts of public support for innovation. For example, Malta's above average performance in high-tech exports is attributable mainly to the activity of a cluster of multinational subsidiaries that rely on the government providing adequate 'enabling' conditions such as higher incentives for foreign director investors as well as an adequate skills base. The impact measures of interest thus relate not so much to monitoring 'Applications' indicators of the EIS but the 'Enablers' of innovation.

The current EIS indicators time series shows that business expenditure on R&D is declining and despite the injection of structural funds supporting public R&I intervention (mainly R&I infrastructures and R&I in industry), public sector R&D has also stabilised. These indicators seem to suggest that the innovation measures have not had a significant impact on the system and that Malta's innovation performance is not expected to improve in the coming years.

The performance of an innovation system isn't assessed solely on the basis of quantitative indicators. There are other 'soft' measures that are less easily captured and tend not be categorised as 'formal' R&I activities and that nonetheless have an impact on facilitating innovation and innovation performance. The measures aimed at increasing a culture for innovation provide an example of such soft measures including the promotion of entrepreneurial education (Discover Enterprise MT_7) and the setting up of a Business Technology Network. Unfortunately, many of these programmes have not been evaluated making it more difficult to assess their impacts.

3.3.1 Conclusions: possible future actions and opportunities for innovation policy

As indicated in the TrendChart report for Malta 2008, future policy action needs to focus on developing and implementing a stand alone national innovation policy that meets the specific contextual requirements of local industry and provides a framework coordinating the activity of those entities with competencies in innovation policy design and implementation.⁽⁵²⁾

The recent (2008) initiatives to develop specific action plans in strategic sectors provide an opportunity to formulate targeted policies to stimulate innovation in these areas ([Section 1.3](#)). The investments in

⁵⁰ Minister of Finance, Economy & Investment. Il-Holqien u s-Salvagwardja tax-xoghol fic-centru tal-hidma tal-gvern. Department of Information Press Release no. 0829, 14 May 2009.

⁵¹ Minister of Finance, Economy & Investment (2009). Concluding speech at Ernst & Young conference Weathering the Challenges. Floriana 15th July 2009.

⁵² UNU-MERIT (2006), Policy Mix Country Review Malta 2006.

'hard' R&I infrastructures currently underway (laboratories and equipment as well capital investments in a biotech park) will contribute to building capacity in these target areas as well as the incentive scheme to build collaborative clusters. Since most of these measures are tied to structural funding programmes, there is a risk of delay in their implementation due to monitoring and administrative procedures.

It is equally urgent to supply a skilled workforce that meets the demands of these areas of growth especially in the face of the apparent shortage of skills across all levels from technicians to professionals in certain areas. Higher education reform is addressing the problem of skills-mismatches and the challenge of balancing the need for new specialisations with the provision of generic skills.

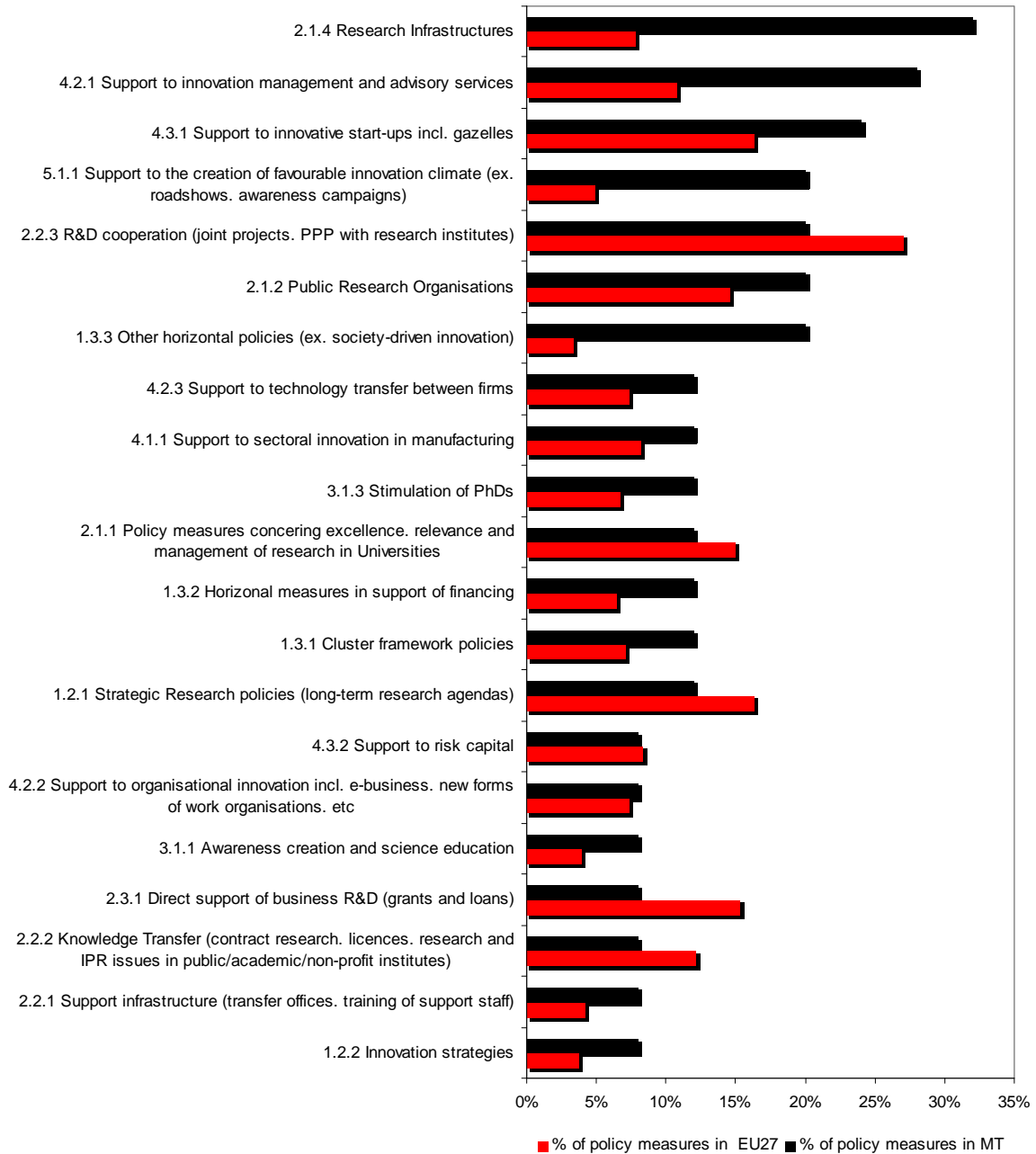
The improved methodology for data collection on R&I has enabled more accurate monitoring of Malta's innovation performance. A persistent weakness of the system is the lack of an evaluation culture of innovation programmes and measures. In fact, most of the research and innovation programmes and measures have not been evaluated so there is limited intelligence on their uptake and impact and this affords for limited policy learning.

Annexes

Annex I POLICY PRIORITIES ADDRESSED BY THE SUPPORT MEASURES IN MALTA AND EU27

	% of policy measures in EU27	% of policy measures in MT
1.1.2 Activities of official advisory and consultative forum	1%	0%
1.1.3 Policy Advisory services (technology foresight, scoreboard type activities, cluster mapping, sectoral studies of innovation)	2%	0%
2.3.2 Indirect support to business R&D (tax incentives and guarantees)	3%	0%
3.2.1 Recruitment of researchers (e.g. fiscal incentives)	7%	0%
3.2.2 Career development (e.g. long-term contracts for university researchers)	6%	0%
3.3.2 Recruitment of skilled personnel in enterprises	4%	0%
5.1.2 Innovation prizes incl. design prizes	2%	0%
5.2.1 Fiscal incentives in support of the diffusion of innovative technologies, products and services	4%	0%
5.2.2 Support and guidelines on innovative Green Public Procurement (GPP)	1%	0%
5.2.3 Impact assessments (on research and innovation issues) of new legislative or regulatory proposals in any policy field	0%	0%
5.3.3 Support to the innovative use of standards	1%	0%
1.1.1 Strategy policy documents (official documents, policy consultation papers, green or white papers, Operational Programmes of Structural Funds)	2%	4%
2.1.3 Research and Technology Organisation (private non-profit)	6%	4%
3.1.2 Relation between teaching and research	3%	4%
3.2.3 Mobility of researchers (e.g. brain-gain, transferability of rights)	9%	4%
3.3.1 Job training (LLL) of researchers and other personnel involved in innovation	4%	4%
4.1.2 Support to innovation in services	6%	4%
5.3.1 Measures to raise awareness and provide general information on IPR	3%	4%
5.3.2 Consultancy and financial incentives to the use of IPR	4%	4%
1.2.2 Innovation strategies	4%	8%
2.2.1 Support infrastructure (transfer offices, training of support staff)	4%	8%
2.2.2 Knowledge Transfer (contract research, licences, research and IPR issues in public/academic/non-profit institutes)	12%	8%
2.3.1 Direct support of business R&D (grants and loans)	15%	8%
3.1.1 Awareness creation and science education	4%	8%
4.2.2 Support to organisational innovation incl. e-business, new forms of work organisations, etc	7%	8%
4.3.2 Support to risk capital	8%	8%
1.2.1 Strategic Research policies (long-term research agendas)	16%	12%
1.3.1 Cluster framework policies	7%	12%
1.3.2 Horizontal measures in support of financing	6%	12%
2.1.1 Policy measures concerning excellence, relevance and management of research in Universities	15%	12%
3.1.3 Stimulation of PhDs	7%	12%
4.1.1 Support to sectoral innovation in manufacturing	8%	12%
4.2.3 Support to technology transfer between firms	7%	12%
1.3.3 Other horizontal policies (ex. society-driven innovation)	3%	20%
2.1.2 Public Research Organisations	15%	20%
2.2.3 R&D cooperation (joint projects, PPP with research institutes)	27%	20%
5.1.1 Support to the creation of favourable innovation climate (ex. roadshows, awareness campaigns)	5%	20%
4.3.1 Support to innovative start-ups incl. gazelles	16%	24%

Policy priorities addressed by the support measures in Malta and EU27



Source: TrendChart-ERAWATCH database of support measures (data downloaded on 5 June 2009); analysis Technopolis Group

ESTIMATED ANNUAL BUDGET PER POLICY PRIORITY IN MALTA AND EU27 (€)

	Estimated annual budget per category (€)	% over the total estimated annual budget
1.2.1 Strategic Research policies (long-term research agendas)	17,142,857	65.2%
5.2.1 Fiscal incentives in support of the diffusion of innovative technologies, products and services	2,000,000	7.6%
4.2.1 Support to innovation management and advisory services	1,785,714	6.8%
4.1.2 Support to innovation in services	1,661,571	6.3%
2.2.3 R&D cooperation (joint projects, PPP with research institutes)	1,389,000	5.3%
1.3.1 Cluster framework policies	855,000	3.3%
Other	1,472,476	5.6%
Total	26,306,619	

Explanation: Percentages refer to the share of estimated annual budget devoted to policy priorities.

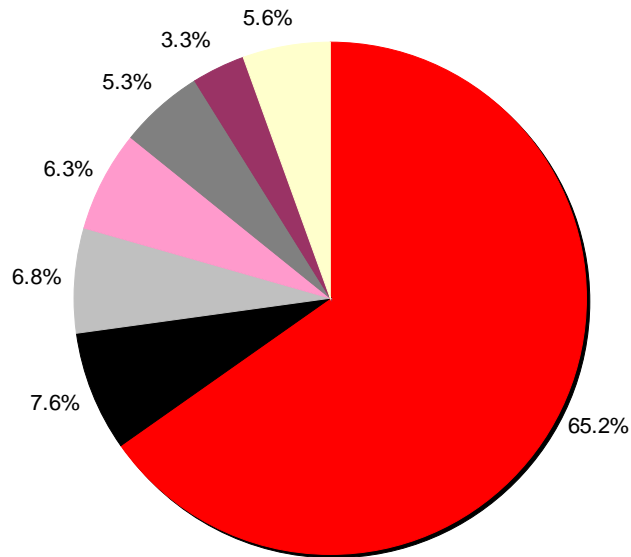
Annual budgets were estimated based on the information provided by the TrendChart correspondents in the support measure descriptions. The calculations include both the already executed and planned budgets (e.g. allocations for SF 2007-2013 programmes).

In order to estimate an annual budget, overall budgets -or budgets available for indicated periods- were divided by the duration of the measure. In absence of the overall budget, average of annual budgets provided was taken into account. In cases when only one annual budget was provided, this was included in the analysis. Non-financial support measures were not included in the calculations.

Estimated annual budgets of support measures were attributed only to main policy priority (one priority per measure).

Estimated total annual budget is the sum of annual budgets of all support measures, for which budget information was provided.

Estimated annual budget per policy priority in Malta



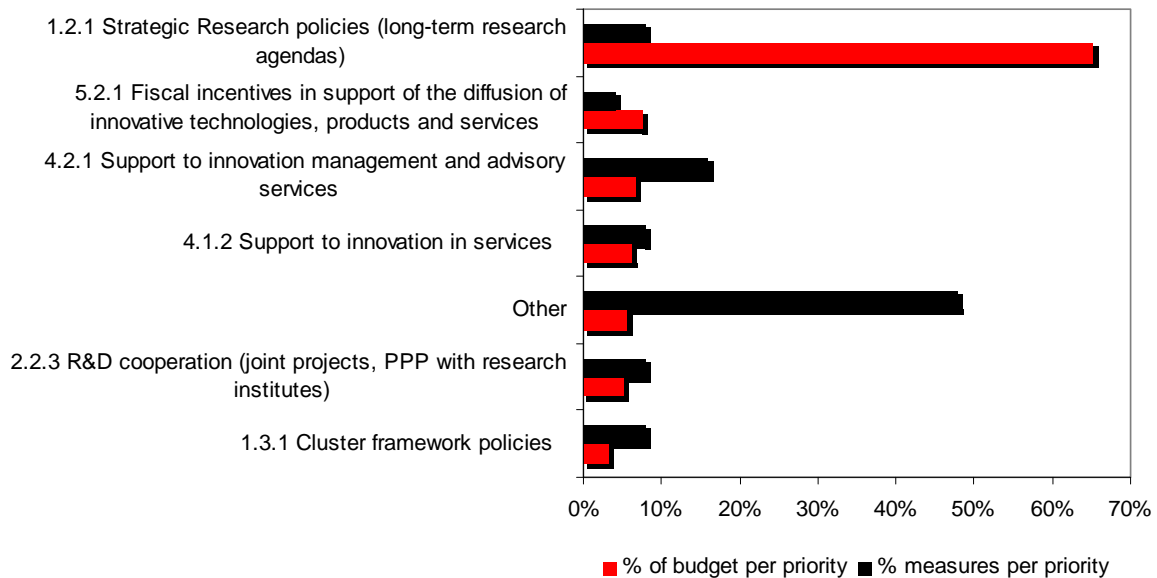
- 1.2.1 Strategic Research policies (long-term research agendas)
- 5.2.1 Fiscal incentives in support of the diffusion of innovative technologies, products and services
- 4.2.1 Support to innovation management and advisory services
- 4.1.2 Support to innovation in services
- 2.2.3 R&D cooperation (joint projects, PPP with research institutes)
- 1.3.1 Cluster framework policies
- Other

ESTIMATED ANNUAL BUDGET SPENT ON POLICY PRIORITY AND NUMBER OF SUPPORT MEASURES IN MT

	% of budget per priority	% measures per priority
1.3.1 Cluster framework policies	3.3%	8%
2.2.3 R&D cooperation (joint projects, PPP with research institutes)	5.3%	8%
Other	5.6%	48%
4.1.2 Support to innovation in services	6.3%	8%
4.2.1 Support to innovation management and advisory services	6.8%	16%
5.2.1 Fiscal incentives in support of the diffusion of innovative technologies, products and services	7.6%	4%
1.2.1 Strategic Research policies (long-term research agendas)	65.2%	8%

Explanation: Comparison of (1) the shares of estimated annual budget devoted to a policy priority and (2) the number of support measures supporting these policy priorities. Only main policy priorities were taken into account (one priority per measure).

Estimated annual budget spent on policy priority and number of support measures in Malta

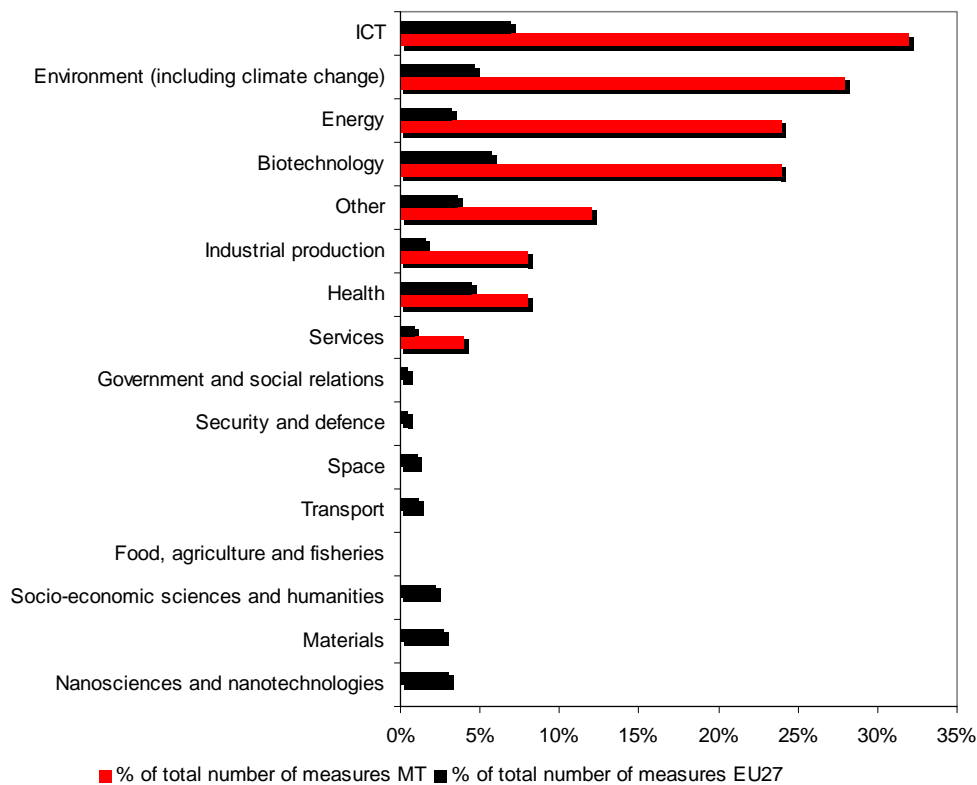


TARGETED RESEARCH AND TECHNOLOGY FIELDS

	% of total number of measures MT	% of total number of measures EU27	Frequencies MT	EU27 Frequencies
Nanosciences and nanotechnologies	0%	3%	0	29
Materials	0%	3%	0	26
Socio-economic sciences and humanities	0%	2%	0	21
Food, agriculture and fisheries	0%	0%	0	0
Transport	0%	1%	0	11
Space	0%	1%	0	10
Security and defence	0%	1%	0	5
Government and social relations	0%	1%	0	5
Services	4%	1%	1	8
Health	8%	5%	2	43
Industrial production	8%	2%	2	15
Other	12%	4%	3	34
Biotechnology	24%	6%	6	55
Energy	24%	3%	6	31
Environment (including climate change)	28%	5%	7	45
ICT	32%	7%	8	66
Total number of measures			25	952

Explanation: Percentages refer to the share of measures indicated as targetting a specific research and technology fields in Malta (n=25) and the overall EU innovation policy mix (N=952). A single support measure could be assigned to more than one field.

Targeted R&T fields by support measures in Malta compared to EU27



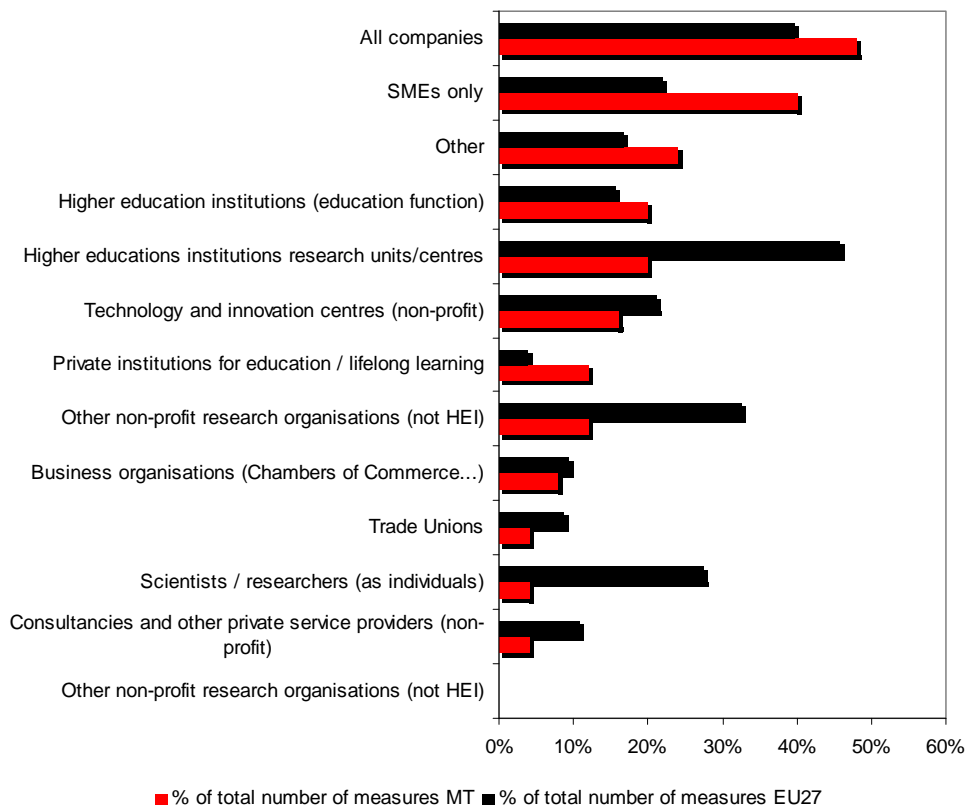
Source: TrendChart-ERAWATCH database of support measures (data downloaded on 5 June 2009); analysis Technopolis Group

TARGET GROUPS OF SUPPORT MEASURES

	% of total number of measures MT	% of total number of measures EU27	Frequencies MT	EU27 Frequencies
Other non-profit research organisations (not HEI)	0%	0%	0	1
Consultancies and other private service providers (non-profit)	4%	11%	1	103
Scientists / researchers (as individuals)	4%	27%	1	261
Trade Unions	4%	9%	1	83
Business organisations (Chambers of Commerce...)	8%	9%	2	90
Other non-profit research organisations (not HEI)	12%	33%	3	310
Private institutions for education / lifelong learning	12%	4%	3	36
Technology and innovation centres (non-profit)	16%	21%	4	202
Higher education institutions research units/centres	20%	46%	5	435
Higher education institutions (education function)	20%	16%	5	149
Other	24%	17%	6	159
SMEs only	40%	22%	10	209
All companies	48%	40%	12	378
Total number of measures			25	952

Explanation: Percentages refer to the share of measures indicated as addressing a specific target group in Malta (n=25) and the overall EU innovation policy mix (N=952). A single support measure could be assigned to more than one target group.

Target groups of support measures in Malta compared to EU27



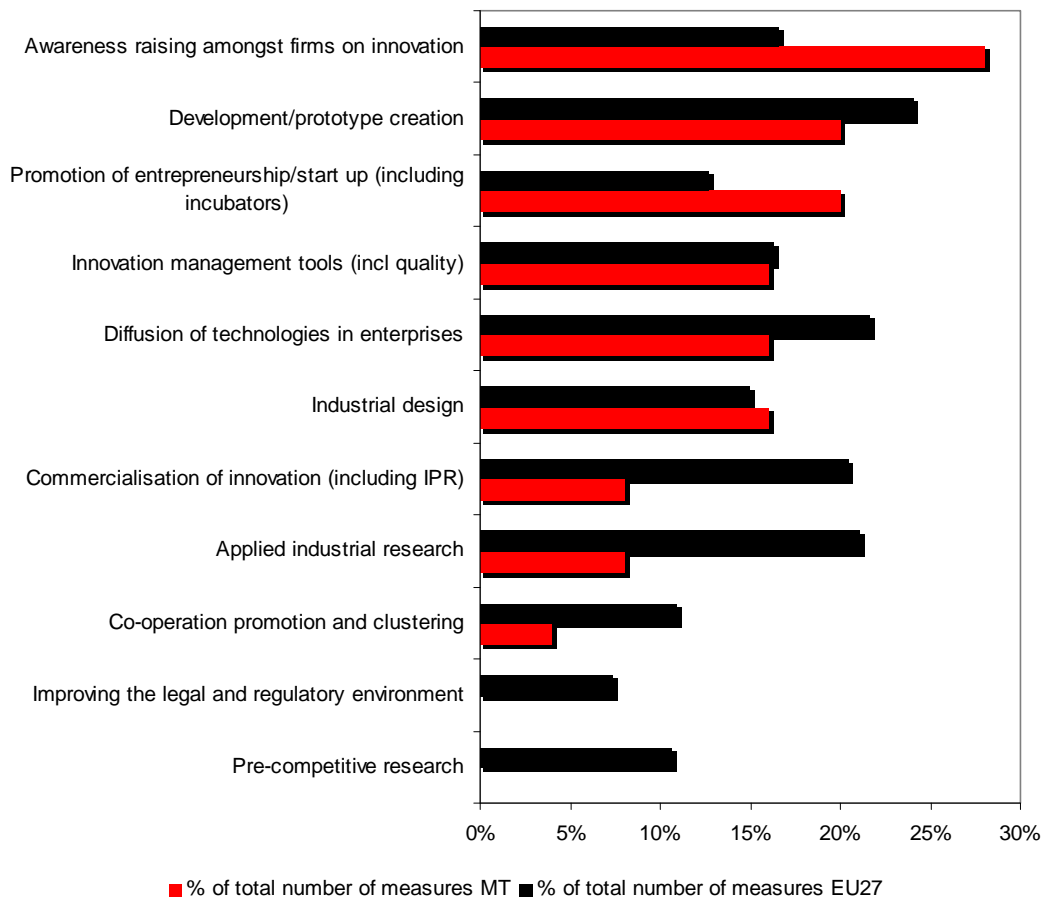
Source: TrendChart-ERAWATCH database of support measures (data downloaded on 5 June 2009); analysis Technopolis Group

ASPECTS OF INNOVATION PROCESSES TARGETED BY MEASURES

	% of total number of measures MT	% of total number of measures EU27	Frequencies MT	EU27 Frequencies
Pre-competitive research	0%	11%	0	101
Improving the legal and regulatory environment	0%	7%	0	70
Co-operation promotion and clustering	4%	11%	1	104
Applied industrial research	8%	21%	2	201
Commercialisation of innovation (including IPR)	8%	20%	2	195
Industrial design	16%	15%	4	142
Diffusion of technologies in enterprises	16%	22%	4	206
Innovation management tools (incl quality)	16%	16%	4	155
Promotion of entrepreneurship/start up (including incubators)	20%	13%	5	121
Development/prototype creation	20%	24%	5	229
Awareness raising amongst firms on innovation	28%	17%	7	158
Total number of measures			25	952

Explanation: Percentages refer to the share of measures indicated as addressing a specific aspect of innovation process in Malta (n=25) and the overall EU innovation policy mix (N=952). A single support measure could be assigned to more than one "aspect".

Aspects of Innovation process targeted by measures in Malta compared to EU27



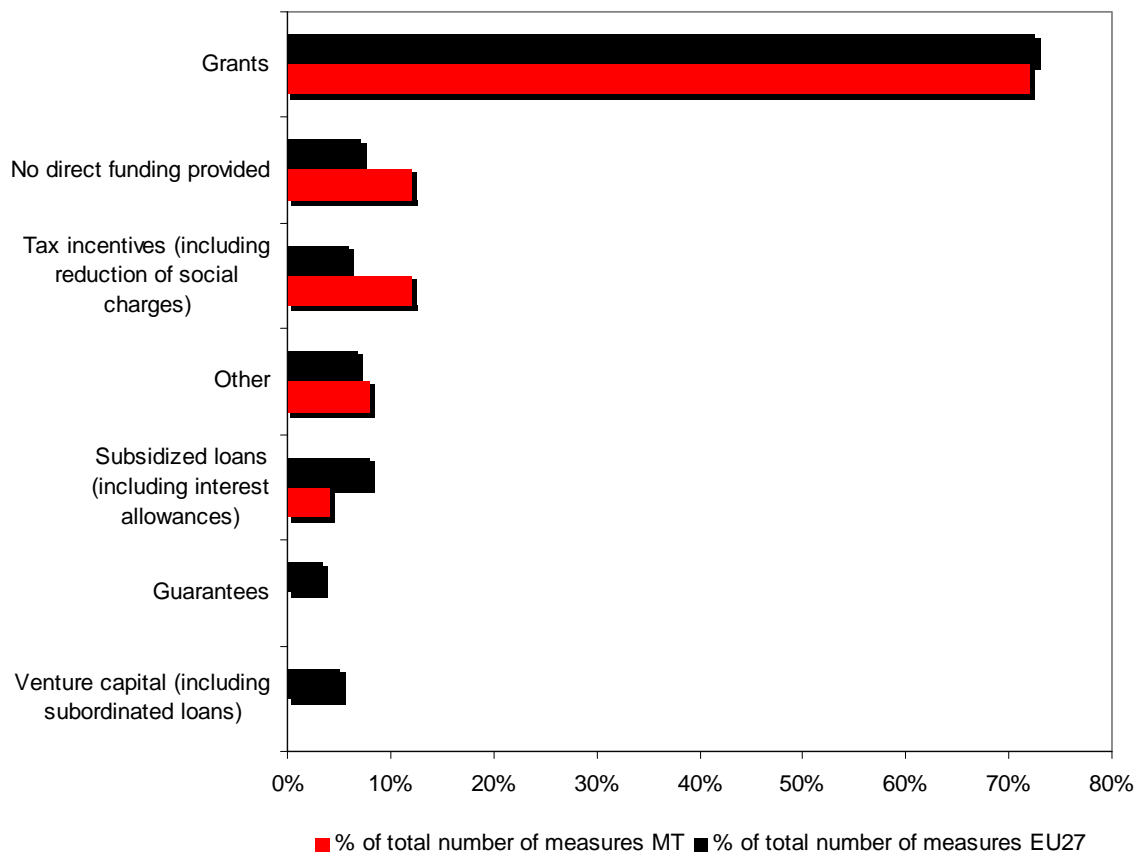
Source: TrendChart-ERAWATCH database of support measures (data downloaded on 5 June 2009); analysis Technopolis Group

FORMS OF FUNDING OF SUPPORT MEASURES

	% of total number of measures MT	% of total number of measures EU27	Frequencies MT	EU27 Frequencies
Venture capital (including subordinated loans)	0%	5%	0	49
Guarantees	0%	3%	0	33
Subsidized loans (including interest allowances)	4%	8%	1	76
Other	8%	7%	2	65
Tax incentives (including reduction of social charges)	12%	6%	3	57
No direct funding provided	12%	7%	3	68
Grants	72%	72%	18	690
Total number of measures			25	952

Explanation: Percentages refer to the share of measures indicated as using a specific form of funding in Malta (n=25) and the overall EU innovation policy mix (N=952).

Forms of funding of support measures in Malta compared to EU27



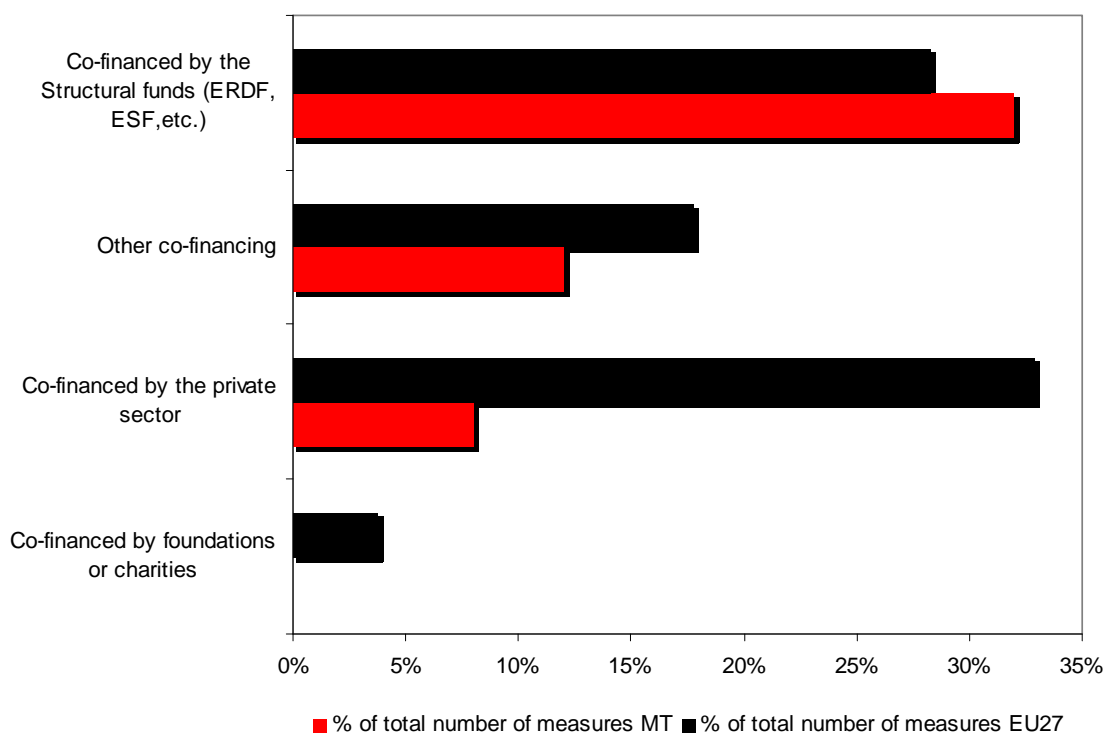
Source: TrendChart-ERAWATCH database of support measures (data downloaded on 5 June 2009); analysis Technopolis Group

SOURCES OF CO-FINANCING OF SUPPORT MEASURES

	% of total number of measures MT	% of total number of measures EU27	Frequencies MT	EU27 Frequencies
Co-financed by foundations or charities	0%	4%	0	36
Co-financed by the private sector	8%	33%	2	313
Other co-financing	12%	18%	3	169
Co-financed by the Structural funds (ERDF, ESF, etc.)	32%	28%	8	269
Total number of measures			25	952

Explanation: Percentages refer to the share of measures indicated as being co-financed from a specific source in Malta (n=25) and the overall EU innovation policy mix (N=952). A single support measure could be co-financed from more than one source.

Sources of co-financing of support measures in Malta compared to EU27



Source: TrendChart-ERAWATCH database of support measures (data downloaded on 5 June 2009); analysis Technopolis Group

Annex II List of Abbreviations

BERD	Business Sector Investments in Research & Development
ECOFIN	Economic and Financial Affairs Council
EIS	European Innovation Scoreboard
ERDF	European Regional Development Fund
EU	European Union
EW	Erawatch
FDI	Foreign Direct Investments
GERD	Total Investments in Research & Development
GDP	Gross Domestic Product
EEN	Enterprise Europe Network
EPO	European Patents Organization
FP	European Commission's Framework Programme for Research Technological Development & Demonstration
HERD	Higher Education Investments in Research & Development
ICT	Information Communication Technologies
MARIS	Malta Regional Innovation Strategy
MCESD	Malta Council for Economic and Social Development
MCST	Malta Council for Science & Technology
ME	Malta Enterprise
MFEI	Ministry of Finance, Economy & Investment
MRRA	Ministry for Resources & Rural Affairs
MT	Malta
NCHE	National Commission for Higher Education
NRP	National Reform Programme
OMC	Open Method of Coordination
OPM	Office of the Prime Minister
PPCD	Planning & Priorities Coordination Division
R&D	Research and Development
R&I	Research and Innovation
RTDI	Research, Technological Development and Innovation
S&E	Science and Engineering
SII	Summary Innovation Index
SMEs	Small and Medium-sized Enterprises
TC	Trendchart
UNCTAD	United Nations Conference on Trade and Development

Bibliography

Central Bank of Malta (2007). Malta's Economy on the Path to the Euro. July 2007. Available at: http://www.centralbankmalta.org/updates/downloads/pdfs/maltese_economy_euro.pdf

Deloitte (2009). The Global Economic Crisis: A Local Perspective. Deloitte Malta Business Sentiment Survey Report 2009. Deloitte Malta. Available at: [http://www.deloitte.com/mt/dtt/cda/doc/content/Deloitte%20Business%20Sentiment%20Survey%2009\(1\).pdf](http://www.deloitte.com/mt/dtt/cda/doc/content/Deloitte%20Business%20Sentiment%20Survey%2009(1).pdf)

Ernst & Young (2009). Weathering the Challenges: Malta Investment Attractiveness Survey 2009. Available at: [http://www.ey.com/Publication/vwLUAssets/Malta_Attractiveness_Survey_2009/\\$FILE/Malta%20Attractiveness%20Survey%202009.pdf](http://www.ey.com/Publication/vwLUAssets/Malta_Attractiveness_Survey_2009/$FILE/Malta%20Attractiveness%20Survey%202009.pdf)

Europa Press Release (2009). Commission Presents Reports under the Excessive Deficit Procedure Lithuania, Malta, Poland and Romania. Press Release no. IP/09/752, 13th May 2009. Available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/752>

European Commission COMM (2009). Implementation of the Lisbon Strategy Structural Reforms in the Context of the European Economic Recovery Plan: Annual Country Assessments – a Detailed Overview of Progress made with the Implementation of the Lisbon Strategy Reforms in Member States in 2008 34/2. Available at: <http://ec.europa.eu/growthandjobs/pdf/european-dimension-200812-annual-progress-report/annualass.pdf>

Eurostat Data. Available at: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>

Eurostat News Release no. 97/2009. Euro-Area Unemployment up to 9.5%. 2 July 2009. Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/3-02072009-AP/EN/3-02072009-AP-EN.PDF

Inno-Policy Trendchart (2007). Malta Country Reports 2005-2008. Available at: <http://www.proinno-europe.eu/index.cfm?fuseaction=country.showCountry&topicID=263&parentID=52&ID=40>

Malta Business Today (2009). EC to decide on Malta's Excessive Deficit Procedure. 29 April 2009. Available at: <http://www.businesstoday.com.mt/2009/04/29/t4.html>

Malta Federation of Industry (2008). Position Paper on Pre-Budget 2009 Consultation Process. Available at: http://www.budget2009.com.mt/media/constitutedbodies/MFOI_prebudget2009.pdf

Malta Department of Information (2009) "*Il-Holqien u s-Salvagwardja tax-xoghol fic-centru tal-hidma tal-gvern*" Press Release no. 0829, 14 May 2009. Available at: http://www.doi.gov.mt/en/press_releases/2009/05/pr0829.asp

Malta Minister of Finance, Economy & Investment (2009). Concluding speech at Ernst & Young conference: Weathering the Challenges, Floriana 15th July 2009. Department of Information Press Release no. 1220. Available at: http://www.doi.gov.mt/EN/press_releases/2009/07/pr1220.asp

Malta Ministry of Finance, Economy & Investment (2008). Malta: Update of Stability Programme 2008-2011 Addendum: Budgetary Stimulus Measures Proposed in the Framework of the European Economic Recovery Plan, December 2008. Available at: http://ec.europa.eu/economy_finance/publications/publication13709_en.pdf

Malta Enterprise (personal communication).

Meadway J. and Mateos-Garcia J (2009). Demanding Growth: Why the UK needs a Recovery Plan based on Growth & Innovation. NESTA Policy Report, 1 March 2009. Available at:
http://www.nesta.org.uk/assets/Uploads/pdf/Research-Report/demanding_growth_report_NESTA.pdf

National Statistics Office (2009). Expenditure on Research & Development in the General Government Sector 2006-2008. Release no. 118/2009, 3 July 2009. Available at:
https://secure2.gov.mt/NSO/statdoc/document_file.aspx?id=2534

National Statistics Office (2008b): Business Research & Innovation 2004-2006. News Release no.166/2008 released 23 September 2008. Available at:
http://www.nso.gov.mt/statdoc/document_file.aspx?id=2324

National Commission for Higher Education (2009). Skills for the Future Report.
https://secure2.gov.mt/nche/MediaCenter/PDFs/1_NCHE-Skills%20for%20the%20Future.pdf

Office of the Prime Minister (2006). National Strategic Plan for Research and Innovation 2007-2010. Available at:
<http://cordis.europa.eu/erawatch/index.cfm?fuseaction=policy.document&uuid=15578456-A0BB-4705-6CDD10E8A51DC1BD>

Porter M. and Schwab K. The Global Competitiveness Report 2008-2009. World Economic Forum, Switzerland 2008. Available at:
<http://www.weforum.org/pdf/GCR08/GCR08.pdf>

Pro-Inno Policy TrendChart (2009). European Innovation Progress Report 2008. European Commission Enterprise and Industry. Available at:
http://www.proinno-europe.eu/admin/uploaded_documents/EIRP2008_Final_merged.pdf

Pro-Inno Europe TrendChart, Policy Measure Database for Malta. Available at:
<http://www.proinno-europe.eu/index.cfm?fuseaction=wiw.measures&page=list&CO=40>

Pro-Inno Metrics (2009). European Innovation Scoreboard 2008: Comparative Analysis of Innovation Performance. January 2009. Available at:
http://www.proinno-europe.eu/admin/uploaded_documents/EIS2008_Final_report-pv.pdf

Thenint, H. (2009). New pricing schemes and smart grids to reduce resource consumption. INNO GRIPS Newsletter Louis Lengrand & Associates. 7. Available at:
<http://grips.proinno-europe.eu/newsletter>

Times of Malta (2009a). Medium Term Effects of Crisis Might Be Harder on Malta. Economist, 9 July 2009. Available at:
<http://www.timesofmalta.com/articles/view/20090709/local/medium-term-effect-of-crisis-might-be-harder-on-malta-economist>

Times of Malta (2009b). Dedicated Micros Get Government Assistance. 28 April 2009.
<http://www.timesofmalta.com/articles/view/20090427/local/dedicated-micros>

Times of Malta (2009c). Manufacturing Sector Growth Came to a Halt in 2008. 23 April 2009.
<http://www.timesofmalta.com/articles/view/20090423/local/manufacturing-sector-growth-came-to-a-halt-in-2008>

Times of Malta (2008). Malta Will Face Economic Downturn in 2009. 4 November 2008. Available at:
<http://www.timesofmalta.com/articles/view/20081104/local/malta-will-face-economic-downturn-in-2009-brussels>

United Nations Conference on Trade and Development UNCTAD (2008). World Investment Report: Transnational Corporations and the Infrastructural Challenge. Available at:
http://www.unctad.org/en/docs/wir2008_en.pdf

UNU-MERIT (2006). Policy Mix Country Review Malta 2006. Available at:
http://ec.europa.eu/invest-in-research/pdf/download_en/malta.pdf

World Economic Forum (2008). The Lisbon Review 2008. Measuring Europe's Progress in Reform, Switzerland. Available at:
<http://www.weforum.org/pdf/gcr/lisbonreview/TheLisbonReview2008.pdf>