

The National Productivity Board

ANNUAL REPORT

2022

Abstract Version

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FOREWORD

PERIT DAVID XUEREB

CHAIRPERSON NATIONAL PRODUCTIVITY BOARD 2023



It is with great pleasure that we present this year's National Productivity Board report, which looks into the Research, Development, and Innovation (RDI) landscape in Malta - our current position, our past experiences, and, most importantly, the direction we want to take in the coming years. RDI has been widely recognised as a crucial component of achieving sustainable long-term economic growth. It increases competitiveness and productivity, opens new markets, and creates new jobs in a wide range of fields and skills. Innovation will also form a significant part of Malta's green and digital transformation, as outlined in the EU's Green Deal and Malta's Economic Vision 2021-2031.

Over the past decade, Malta has experienced a consistent and robust economic growth. From 2011 to 2019, the economy grew by an average of 6% per year, outpacing the European Union (EU) average by fourfold. According to this year's report, it is evident that Malta has consistently fallen behind the EU and Euro Area average in terms of annual expenditure on research, development, and innovation despite a significant growth of over 75% between 2010 and 2020. This applies to both the private and public sectors. Therefore, it is imperative that a concerted effort is made across the Maltese economy to future-proof Malta's economic growth and ensure even greater levels of national prosperity by investing heavily and intelligently in RDI.

This report gives a plan for increasing investment in research, development, and innovation, which aligns with other significant initiatives in the field, such as the National Research and Innovation Strategic Plan for the period 2023-2027. It focusses on analysing Malta's RDI performance within key sectors and examines how it impacts productivity and competitiveness in those sectors. This year's report takes a comprehensive approach by analysing various RDI and productivity statistics in Malta. Additionally, it provides a thorough assessment of the existing academic literature on RDI and its key drivers. To gain deeper insights, the authors conducted extensive interviews and focus group sessions involving businesses, stakeholders, and public officials. The

purpose was to identify the primary factors influencing RDI investments and the policies that can facilitate RDI efforts in each sector in the coming years. The report also dedicates special attention to Gozo, considering its unique realities, challenges, and opportunities in the RDI landscape.

The report concludes by providing 10 S.M.A.R.T. recommendations that are derived directly from the research findings. These recommendations aim to enhance Malta's environment for research and development (RDI) while addressing current deficiencies. Each recommendation is accompanied by a list of relevant stakeholders who are deemed crucial for the successful implementation of each action. This approach fosters a genuine sense of accountability, ensuring that the report's findings translate into tangible and measurable outcomes that benefit the entire country.

Ultimately, fostering a vibrant and high-quality RDI culture will propel Malta's productivity and competitiveness into a new era of prosperity, with a strong focus on human development. This progress will build upon the country's recent economic achievements and contribute to improving the quality of life for both Maltese workers and residents, improving their lives with a sense of purpose.

Perit David Xuereb

Chairperson National Productivity Board 2023

FOREWORD

HON. ANDY ELLUL

PARLIAMENTARY SECRETARY FOR SOCIAL DIALOGUE



The 2022 National Productivity Report emphasises the crucial link between productivity and research and innovation. More importantly, it highlights the need to increase investment in research and business / workplace innovation to enhance productivity across various sectors of the Maltese economy. Despite the impressive economic growth, with last year's Gross Domestic Product reaching 6.9% in real terms, we need to continue investing in research, development, and innovation (RDI). Sustained investment in research, development, and innovation (RDI) remains essential to support businesses and enhance the skills of workers and professionals.

While the government has taken steps to enhance RDI, including in the last Budget, it is important that we continue supporting the connection between RDI and productivity. A strategic and focused approach is required to boost productivity and attract foreign direct investment. The recommendations outlined in this report complement the government's strategy on RDI, and they are practical, achievable, and supportive of government policies and incentives for business innovation, such as those offered by Malta Enterprise.

Coupled with existing policies and measures, such as energy subsidies that have helped the economy grow while maintaining government revenue, the recommendations aim to strengthen the resilience of the Maltese economy in the face of geopolitical tensions and international developments.

I would like to highlight the significance of some recommendations that are relevant to increasing productivity. Workplace innovation is a key factor in increasing productivity, along with fostering synergies between relevant institutions to support start-ups and improve access to finance. Implementing these and other recommendations can establish an RDI-friendly business environment that benefits workers and professionals.

Finally, I would like to emphasise the significant role of the National Productivity Board (NPB) in supervising the report's completion. NPB reflects how the MCESD Council works, with the active involvement and participation of social partners and civil society. The government values the opinions expressed by social partners and civil society in formulating policies, and the approval of the 2022 National Productivity Report adds credibility to these recommendations.

Social dialogue and the input of social partners are crucial in shaping government policies and decisions that can drive innovation, enhance productivity, and promote sustainable economic growth. The next step involves debating and analysing the recommendations further, followed by appropriate actions by the government to enhance RDI in the Maltese economy.

Hon. Andy Ellul

Parliamentary Secretary for Social Dialogue

FOREWORD

HON. CLYDE CARUANA

MINISTER FOR FINANCE AND EMPLOYMENT



The annual National Productivity and Competitiveness report provides us with a regular occasion to gain further academic insight into these key strategic themes, whilst fostering ideas and recommendations for the development of the type of economy which we, as a nation, wish to achieve and enjoy. This year's report focusses on the link between research and innovation and Malta's productivity and competitiveness.

Such an analysis is relevant in light of the fact that changing our economic model into one which is closer to the notions of economic development rather than economic growth, requires more than merely reorganising, prioritising and diversifying our sectors.

Amongst others, it requires us to become competitive in new and innovative ways. This ties in with one of the recommendations of this report, which recommends a further emphasis on workplace innovation, as productivity levels are found to vary from sector to sector.

As demonstrated in this and previous reports, maintaining a clear focus on skills, training, and education is crucial for accelerating our productivity gains. We are actively pursuing this through the implementation of the recommendations outlined in the National Employment Policy. It is also thanks to a resilient labour market that our country has managed to withstand the majority of the impacts caused by the economic turbulence over the last three years.

The Ministry for Finance and Employment is committed to continue working with other relevant entities to ensure that our robust labour market is supported by increased direct government investment in research and innovation (R&I). Furthermore, efforts will be made to enhance enterprises' access to equity

specifically for research and innovation purposes, as recommended in this report. Access to finance for SMEs is as challenging as it is critical, and the Government through active collaboration with its various institutions, such as Malta Enterprise, Malta Council for Science and Technology, and the Malta Development Bank, must continue to foster a more effective framework to facilitate access to equity.

Boosting competitiveness and productivity remains essential in supporting ongoing economic growth. This is crucial to sustaining public finances, which, in turn, enable further investment in R&I. It is imperative that we continue enhancing Malta's attractiveness for investment, as it not only sustains living standards but also facilitates effective management of the ecological transition.

In conclusion, I take this opportunity to extend my congratulations to the authors of the report for their insightful analysis of our economy's productivity and the focused recommendations they have put forward. The Government will be carefully considering these recommendations as part of its efforts to enhance productivity in the sectors outlined in the analysis.

Hon. Clyde Caruana

Minister for Finance and Employment

1. COMPOSITION OF THE NATIONAL PRODUCTIVITY BOARD 2022

The National Productivity Board is an independent institution that helps to analyse developments and challenges related to economic productivity and competitiveness.

The Board comprises eleven members, including the Chairperson and ten other members. The Chairperson of the Malta Council for Economic and Social Development serves as the Chairperson of the Board by virtue of their position. The remaining ten members consist of a senior official nominated by the Minister responsible for Finance, a member nominated by the Governor of the Central Bank of Malta, four members nominated by workers' organisations represented by constituted bodies on the Council, and four members nominated by constituted bodies representing national employers' organisations on the Council.

Mr James Pearsall Chairperson National Productivity Board until 8 th January 2023	Perit David Xuereb Chairperson National Productivity Board as from 8 th January 2023	
Mr Chris Attard Forum Unions Maltin		
Ms Angela Attard Fenech Malta Hotels and Restaurants Association		
Mr Ian Borg Central Bank of Malta		
Mr Victor Carachi General Workers' Union		
Mr Joe Farrugia Malta Employers' Association		
Ms Abigail Mamo Malta Chamber of SMEs		
Mr Godwin Mifsud Ministry for Finance and Employment		
Mr Mario Sacco Confederation of Malta Trade Unions		
Mr Josef Vella UHM Voice of the Workers		
Ms Marisa Xuereb The Malta Chamber as from 1 st July 2022	Mr Andrè Fenech The Malta Chamber until 3 rd February 2022	Mr Nathan Chatland The Malta Chamber as from 4 th February 2022 until 30 th June 2022

2. AN OVERVIEW OF THE NATIONAL PRODUCTIVITY BOARD

The National Productivity Board effectively fulfils the objectives outlined in the Council recommendation concerning National Productivity Boards. Its primary task is to diagnose and analyse productivity and competitiveness developments in Malta, considering both the euro area and the European Union as reference points. The analysis encompasses long-term drivers and facilitators of productivity and competitiveness, such as innovation, investment attraction, business environment, and human capital. It also examines cost and non-cost factors that can impact prices and the quality of goods and services, even in comparison to global competitors in the short term. The analysis relies on transparent and comparable indicators to ensure robustness and accuracy.

Additionally, the Board engages in independent analysis of policy challenges related to productivity and competitiveness. It assesses the potential effects of various policy options and makes explicit trade-offs when formulating policies.

Furthermore, the National Productivity Board is responsible for preparing the annual report, which is submitted to the European Commission on a yearly basis. This report, along with other national reports, contributes to the European Semester process.

3. A BRIEF OF THE NATIONAL PRODUCTIVITY REPORT 2022

The report's primary focus is on research, development, and innovation (RDI) as a critical driver of productivity and competitiveness. RDI encompasses the efforts made by both private and public sector entities to develop new production methods, deliver goods and services, and create innovative products. The report adopts a broad definition of RDI, which includes organisational innovation, market innovation, and input innovation.

Recognizing the consensus on the importance of RDI for productivity, the report aims to gain a deeper understanding of the key drivers and challenges associated with RDI development in Malta. It seeks to provide policymakers with recommendations to address these challenges and foster RDI activities effectively.

The report analyses RDI and productivity on a sector-by-sector level, examining how relevant policies and initiatives can stimulate RDI activities in key economic sectors. The recommendations presented in this report should be considered in the context of the current global economic landscape, including Malta, as well as the fact that Malta has consistently lagged behind its European counterparts in terms of RDI spending and participation.

Figure 1: General Expenditure on Research and Development (GERD) per inhabitant

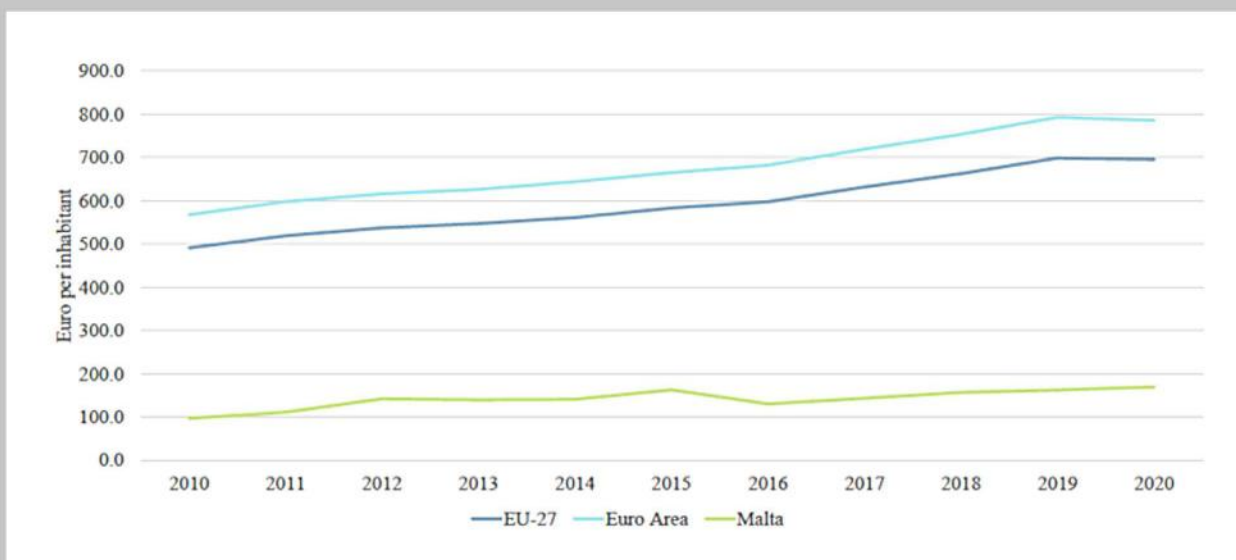
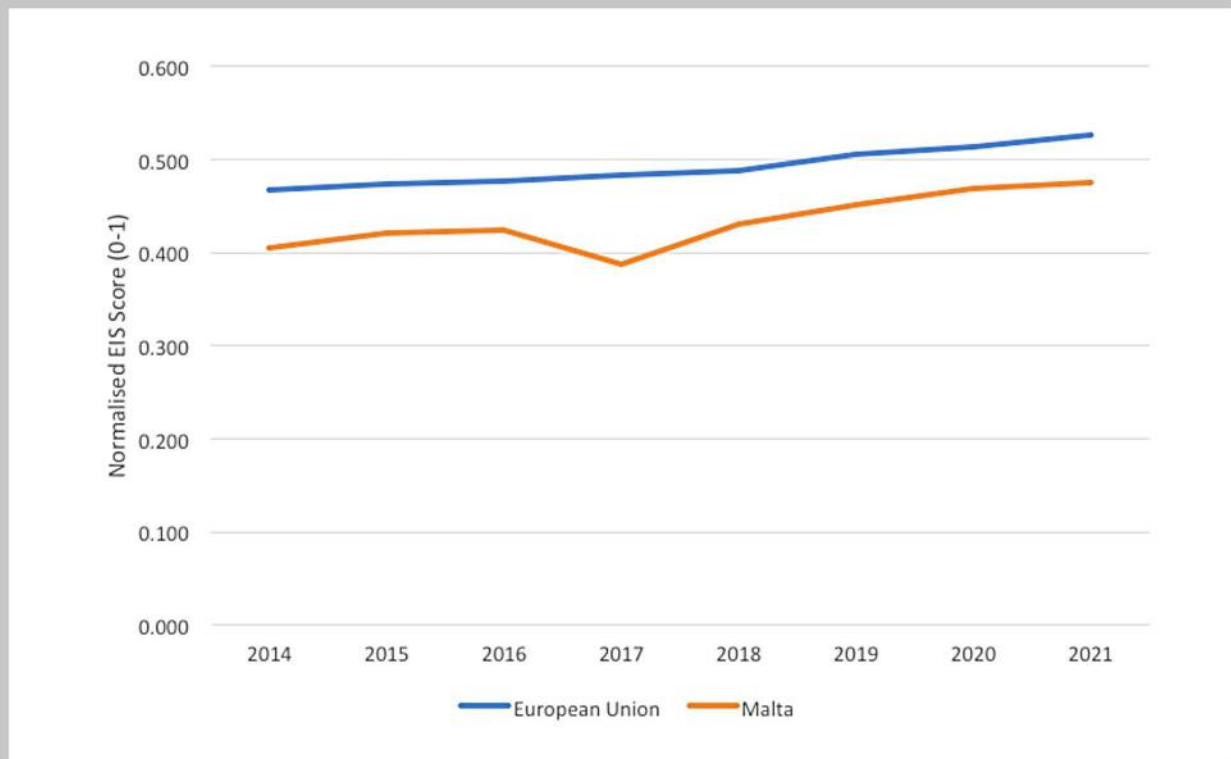


Figure 2: European Innovation Scoreboard



The year 2021 witnessed several positive economic developments in Malta, particularly in terms of GDP growth and labour market performance. The strong recovery of the Maltese economy from the challenges of 2020 was remarkable, as it surpassed pre-pandemic GDP levels. The economy recorded a notable real GDP growth rate of 10.3%, outpacing the average growth of 5.3% in the EU-27.

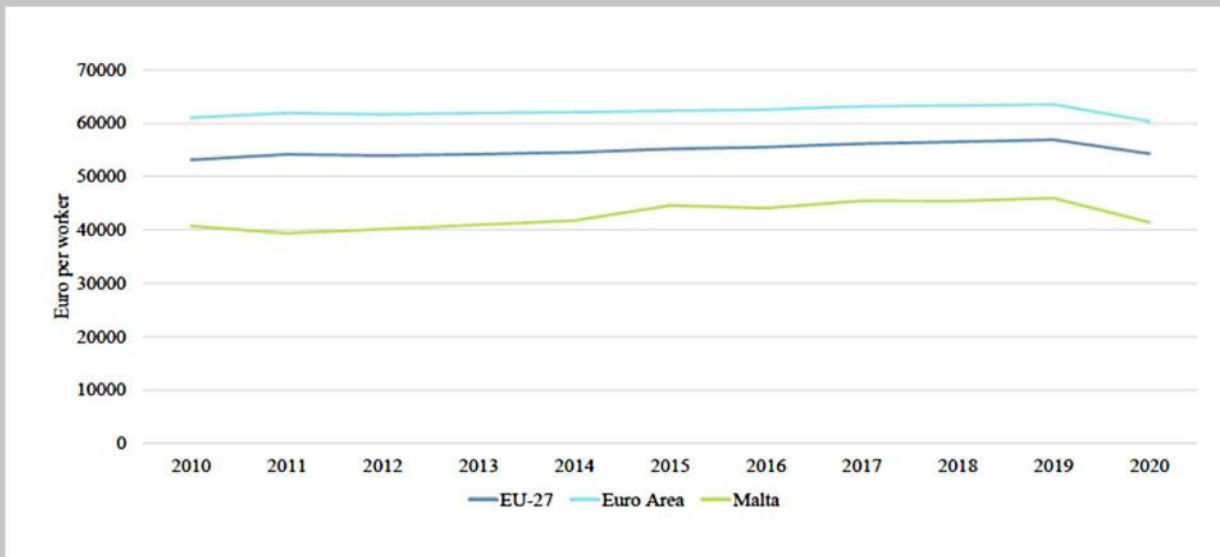
In 2021, the unemployment rate in Malta decreased to 3.5%, which was slightly below the pre-pandemic levels. Comparatively, the average unemployment rate in the EU-27 stood at 7.0% during the same period. The macroeconomic forecast presented in the Ministry of Finance and Employment's Draft Budgetary Plan 2023, published in October 2022, projects a further 6% acceleration in real GDP growth, whereas unemployment is expected to decline, reaching a rate of 3.1% in 2022.

Notwithstanding these developments, the Maltese economy still confronts numerous economic challenges that contribute to a high level of uncertainty. The ongoing geopolitical conflict between Russia and Ukraine, the increasing risks of stagflation, supply chain disruptions stemming from the COVID-19 pandemic, and the emergence of social instability all pose significant obstacles to global economic growth.

Although these disruptions are globally spread, some factors may still hinge on the relative competitiveness of Malta. Indeed, Malta's inflation rate, as measured by the Harmonized Index of Consumer Prices (HICP), has experienced a rapid increase, with the inflation rate climbing from 0.3% to 7.4% as of October 2022.

Economic growth in Malta has historically relied on several factors, including the expansion of the labour force, consumption, investment levels in the goods we produce, and the services we provide, and

Figure 3: Real Labour Productivity



improvements in education. However, to enhance productivity levels, it is necessary to reconsider this conventional model of economic growth. Malta's industrial policy has shown a tendency to focus on diversifying into new economic sectors that initially generate significant productivity gains. However, these sectors often reach maturity relatively quickly.

This is best expressed by the significant increase in migrant labour in recent years, which indicates the very labour-intensive growth in comparison to the RDI driven growth. Shifting the emphasis from attracting investment that generates employment to attracting firms with a specific focus on research and innovation could serve as a crucial catalyst for change.

A national FDI strategy that prioritises research-driven firms would undoubtedly necessitate a substantial investment in human capital. It is likely that foreign workers with highly specialised skills would need to be recruited to fill the vacancies. While this investment may be significant, the medium-to-long-term value it would generate could be substantial. However, any change in policy must also take into account the existing economic context.

In light of the existing labour supply shortages in Malta, it is crucial to develop solutions that support current businesses. In an environment where investment in human capital and advanced technology-based solutions is increasingly important, targeted policies are needed to foster an ecosystem that promotes sustainable business growth and innovation, while maintaining a healthy level of competition.

Given the prevailing economic conditions, a decision has been made to employ a three-step approach to enhance our understanding of the facilitators and barriers to RDI in Malta. The first step involved assessing key productivity and innovation indicators relevant to the Maltese economy and highlighting essential characteristics that provide context for understanding potential drivers and barriers to RDI.

The report subsequently presents a synthesis of the academic literature, with a focus on highlighting aspects of the relationship between RDI and productivity that are of relevance to the Maltese economy. This analysis is crucial for developing a comprehensive understanding of the nature of RDI activities in the dynamic global environment and for identifying the key drivers and challenges of RDI that

Figure 4: Business Expenditure on Research and Development (BERD) in Malta by sector (2019)

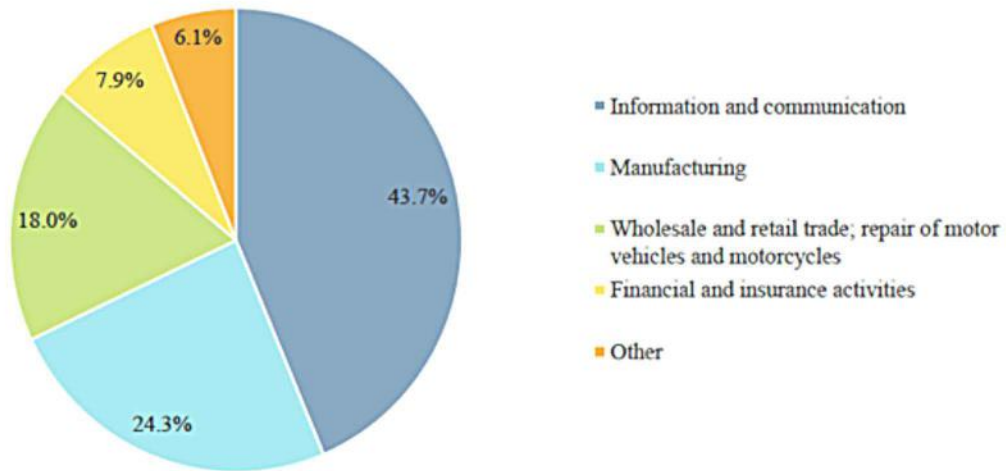


Figure 5: Sectoral Innovation and Labour Productivity in Malta, 2020

		Labour Productivity	
		Low	High
Innovation	Low	Agriculture & fisheries; Construction; Wholesale & retail; Transport; Accommodation & food; Administration & support services	Water supply
	High	Manufacturing	ICT; Financial services; Real estate; Professional services

have garnered broad consensus among academic researchers.

The insights gained from the initial assessment and literature review were instrumental in designing and conducting a series of interviews and focus groups. The methodology employed for data collection involved a combination of primary research methods, including interviews and focus groups, in which various techniques and questioning styles were utilised during these sessions, tailored to the specific information being sought.

An important aspect of the analysis undertaken is its examination of the sectoral perspective on the current state of RDI in Malta and to highlight which are the key enablers and barriers to RDI.

To this end, eight overarching economic sectors were chosen based primarily on their relevance for RDI activities in the Maltese economy, together with the inclusion of Gozo as a separate sector. Including a separate section for Gozo was considered essential to ensure a comprehensive analysis that takes into account the unique characteristics, challenges, and opportunities of Gozo in relation to RDI.

The information gathered and analysis undertaken served as a foundation for developing sector-specific insights, which, in turn, facilitated the identification of a comprehensive set of ten recommendations designed to spur on and facilitate RDI activities in the years to come.

The recommendations put forward are based on the points mentioned earlier and are the result of a thorough analysis of the responses to the questionnaires, as well as the feedback obtained from meetings and interviews with key stakeholders representing various sectors.

4. S.M.A.R.T. RECOMMENDATIONS FROM THE NATIONAL PRODUCTIVITY REPORT 2022

Recommendation 1: More focus should be assigned to the role of workplace innovation.

In a small country context like Malta, we believe that workplace innovation policy should go beyond simply addressing the supply of skilled workers. Instead, it should encompass the methods of organising work and the development and utilisation of skills within the workplace. Based on this understanding, we strongly recommend that businesses and the public sector in Malta engage in a serious reflection on the types of policies and work organisation approaches that have proven effective in success stories and that enhance innovativeness through investments in skills.

Recommendation 2: Increase access to finance by enhancing the synergies in place between MDB, ME, and MCST, especially in relation to the support of start-ups.

One factor cited as a limiting factor in the response to the questionnaire is access to finance for innovation and research purposes. We recommend that MDB works closely with entities such as Malta Enterprise and the Malta Council for Science and Technology to develop schemes aimed at financing business innovation (and research). Supporting innovative start-ups is indeed a top priority for the MDB (Malta Development Bank), aligning with national and EU objectives in green and digital investment.

Recommendation 3: The public sector could act as an equity investor for promising start-ups to help alleviate the shortage of private equity in the local market.

Successful start-ups can serve as key drivers for the creation of new markets or the transformation of existing markets through product innovation. In the long run, they play a crucial role as catalysts for competition and market disruption.

It should also be noted that recently, the government launched the Malta Start-up Residence Programme, which involves the enactment of new rules that recognise the significance of attracting new talent and highly innovative start-ups from around the world.

While this policy will undoubtedly contribute to the growth of the start-up ecosystem in Malta, it is important to acknowledge that one of the significant challenges faced by start-ups, particularly at the local level, is the limited availability of external financing.

In light of this, the government could consider adopting a less risk-averse approach and explore the possibility of acting as an equity investor for promising start-ups that have the potential to truly drive RDI forward.

This could be facilitated through institutions such as the Malta Development Bank.

Recommendation 4: A Shift from Funding RDI Projects to Activities.

Existing funding opportunities for RDI, including the tax credits administered by Malta Enterprise, are focused on individual eligible projects. To secure funding, a formal application and approval process are required before the commencement of project activities. Project-centric schemes may potentially dissuade private businesses from seeking public funding. Therefore, the Maltese Government could consider introducing a new, complementary form of RDI funding based on RDI activities rather than projects. This could be modelled on the UK Government's tax credit schemes for RDI. Under this proposed scheme, businesses would be eligible to receive tax credits or cash payments based on their annual reported expenditure on RDI activities. The eligible expenditures would be defined beforehand to ensure clarity and the activities may include the development of new products, services, or processes as well as modification or improvement of existing one. This could encompass workplace innovation initiatives across all sectors of the economy.

Recommendation 5: An RDI Vision for Gozo.

Gozo, being smaller and able to change relatively quickly, has been recognised by the Maltese Government as having significant potential for the development, testing, and deployment of innovative projects and initiatives. However, the unique socio-economic and geographical characteristics of Gozo necessitate a tailored approach to the provision of RDI funds and the type and prioritisation of eligible projects for funding. It is recommended that greater autonomy be granted to institutions operating in Gozo, such as the GRDA (Gozo Regional Development Authority) and the Ministry for Gozo, in terms of the design, allocation, and disbursement of research funding. Additionally, the allocation of RDI-specific resources, should leverage existing close collaboration with stakeholders including the Gozo Chamber and other trade representatives. This should expedite the deployment of funding and facilitate a more curated approach to the design of RDI funding opportunities in Gozo, thereby fostering greater innovation within the island.

Recommendation 6: Administrative support for pre- and post-award of funds.

A key recurring concern emerging during the interviews and focus group sessions was the need for dedicated support to help businesses navigate the administrative requirements associated with both the pre-award and post-award phases of the project funding process. This support shall encompass the preparation of documents, supplementary material, reporting, and more. These requirements pose significant challenges for businesses, particularly SMEs, who may lack the necessary time, expertise, or personnel to navigate the process. This can potentially result in delays in the disbursement of funds or even loss of funding, ultimately discouraging businesses from applying for financial support. To address these challenges effectively, the establishment of a dedicated, independent research and project support office could be considered. This office would be tasked with providing comprehensive assistance to businesses and prospective applicants throughout the entire project funding process, including both pre- and post-award stages, and project implementation.

Recommendation 7: Increase the post-doctoral schemes across several key sectors to enhance the link between academia and industry with the aim to boost innovation.

Government should extend the postdoctoral scheme across several key sectors with government assistance to include other types of researchers, such as postgraduate (Masters-level) researchers. Universities are a critical hub for research, in particular through undertaking research themselves, partnering with industry, and developing individual researchers. PhD candidates and graduates play a critical role as a link between academia and industry, not only through their individual research but also through the skills and expertise they can contribute to organisations across diverse sectors during and after their studies. PhD graduates are well positioned to assist industries in developing new and innovative products and

services. A higher level of engagement between PhD graduates and industry could be achieved, for example, by introducing tax incentives that encourage businesses to collaborate with PhD graduates and by linking a portion of PhD scholarships to industry.

Recommendation 8: Enhance further collaboration between academia and industry through a more extensive use of knowledge transfer partnerships.

One point often argued by industry professionals, especially those operating within capital-intensive sectors such as manufacturing, is that although our academic institutions produce graduates and postgraduates of high quality, they often lack the practical skills required to work in an industrial environment. This potential lack of practical skills may hinder their ability to develop ideas and conduct research that could drive innovation forward. Looking ahead, we recommend a more extensive use of knowledge transfer partnerships (KTPs). Such schemes have been an important catalyst in several countries, bringing together the worlds of science and business and nurturing industrial talents. KTP programs support the placement of a graduate student with a company, enabling the company to address specific research and innovation needs while simultaneously gaining access to the knowledge resources of the academic sector.

Recommendation 9: Develop Malta's position as a regional innovation hub with specific focus on digital and future technologies.

It is widely recognised that regional hubs have become increasingly important as key spatial units to drive innovation, which is the main source of economic growth.

These innovation hubs have the potential to enhance the cluster structure of the economy by facilitating increased relationships and flows that connect the

different stakeholders and parts of the innovation system.

Additionally, they can serve to attract talent to the island. Given Malta's strategic position in the Mediterranean area, it could play a significant role as a regional research and innovation hub, particularly for the Southern EU area.

Furthermore, considering the positive developments already underway in the fields of digital and future technologies, such as blockchain, fintech, artificial intelligence, and digital games, it can be argued that Malta should focus on developing an innovation hub centred around these areas to gain competitive advantages.

Recommendation 10: Include STEM thinking as part of the basic curriculum within primary and secondary schools with the aim of increasing the number of future STEM graduates.

The supply of local researchers is a crucial factor in ensuring the sustainability of RDI activities in the future. However, it is worth noting that the number of graduates in Science, Technology, Engineering, and Mathematics (STEM) has been declining in recent years. While finding a short-term solution to this issue is extremely challenging, several policies have been proposed by various institutions to address this challenge and yield medium- to long-term benefits.

One notable policy that should be highlighted is the inclusion of STEM thinking in the basic curriculum of primary and secondary schools.

Authors of the report
The authors of the National Productivity Report 2022 are:

- Professor Philip von Brockdorff
 - Dr Ian P. Cassar
 - Dr Jonathan Spiteri

