Banking Crisis in Cyprus: Causes, Consequences and Recent Developments*

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The economy of Cyprus was barely affected by the U.S. subprime mortgage debacle. The economic crisis in Cyprus was initially driven by fiscal mismanagement and subsequently by the failure of the government and its regulatory branches to monitor the imprudent behavior and risky investment actions of top executives in the banking sector. That is, banking executives run amok due to poor monitoring leading to severe agency problems in the Cypriot banking industry. The economic effects of the first capital-controlled bail-in in the EU in 2013 temporarily hobbled the real economy and the banking sector of Cyprus. Nevertheless, in less than five years, the economy of Cyprus recovered almost fully. This paper provides an economic analysis of the macroeconomic, banking and political events that led to the economic collapse in Cyprus. We also cover the interim period between collapse and recovery. The Cyprus case is an opportunity for European economic agents and regulators to learn how to avoid bail-in and welfare bloat. Studying Cyprus helps the reader see the most troubling cracks in the foundations of the European Fortress.

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I. Introduction

The global economy was operating in an environment of optimism until 2007. The prospect of a major economic crisis like the one experienced in the 1930s was considered a far-fetched premise. The globalization of financial and product markets, the impressive economic performance of Asian countries and the collapse of the Soviet Union fueled the fantasy that global economic growth and prosperity would perpetuate. Irrational exuberance was even greater in the financial sector. In the mid-1980s, the financial sector became a driving force behind global economic growth. Financial sector managers overstepped intermediary roles as uncontrollable growth followed. Exceptionally high risks taken by the financial sector were not adequately assessed by regulators, managers or investors. Regulation by national governments and international organizations was limited or absent. Between 2002-07, the stock market had the highest average economic growth over the last forty years. The size of global production in 2007 reached 55.6 trillion dollars. Compared to that of 2000, the global output in real terms increased by 23.9%. Specifically, 25.3% of the global production originated in the USA, 29.9% in the then 27 countries of the European Union, 7.8% in Japan and 13.1% in the emerging markets of Brazil, Russia, India and China (BRIC).

The global financial crisis in 2007 was triggered by the collapse of the United States sub-prime mortgage market. These low-rated loans were bundled with investment grade mortgages in structured financial products known as mortgage back securities (MBS). This financial fool's gold was then sold to investment, pension and mutual funds worldwide. These MBS products received high ratings despite concealing a sub-prime moral hazard because credit agencies wanted to maintain marketing goodwill with client investment banks - another agency problem in the USA financial sector that slammed the world.

Many Cypriot analysts recognized the risks but were unable to accept that a collapse was imminent assuming that the US authorities would not allow a default. United States authorities allowed investment Bank Lehman Brothers to default at the outbreak of the crisis in September of 2008 to contain the moral hazard from the MBS market. American International Group (AIG) teetered on the brink of bankruptcy forcing the United States federal government to inject around 700 billion dollars to rescue both AIG and the American banking sector. A tidal wave of bank defaults hit several developed economies in the

European Union (EU) in the wake of the bankruptcy of Lehman Brothers. The crisis became acute as global liquidity dwindled while incomes and production tanked. Unemployment soared to alarming levels, revenue dropped, financial deficits increased, and public debt bulged in many countries of the EU.

The economy of Cyprus was not affected significantly by the MBS driven international financial crisis. None of the Cypriot banks had invested in MBS. Between 2007 and 2011, when many EU members had near zero or negative growth, the Cypriot Gross Domestic Product (GDP) grew at an average annual rate of 3%. The events that led to the economic and financial crisis in Cyprus, analyzed fully in this article, were quite different from those of other countries. The economic crisis in Cyprus was initially driven by fiscal mismanagement and subsequently by the failure of the government and its regulatory branches to monitor the imprudent behavior of top managers in the banking sector.

The Cypriot fiscal-banking crisis that started in 2009 peaked in March of 2013. Cyprus became the fifth EU member state to request financial assistance from the European Commission (EC), the European Central Bank (ECB) and the International Monetary Fund (IMF), known collectively as the Troika. Because of the assistance, the most severe banking remediation measures (*Memorandum of Understanding* or *MoU*) in the history of the European Union were forced on Cyprus by Troika.

The economic effects of the first capital-controlled bail-in crippled the economy and severely damaged the banking sector of Cyprus. A large segment of the Cypriot banking sector and the real economy vanished. The impact on household income, business income and employment, was devastating. Between 2011 and 2015, the Cypriot GDP declined by 10.1%, unemployment increased by 84.8% and full-time employment declined by 13.6%.

Understanding why Cyprus became the guinea pig for locally toxic EU financial policy requires an exploration of the political-economic interplay within the pan-European banking system in terms of legal structure and country size. Researchers and planners receive specific tools that help guide normative theory and positive economic reform. Most importantly this article is intended to help the populations of other countries around the world avoid the debacle we describe herein.

Specific attention is given to the Cypriot banking system and the impact of the 'haircut' on the financial sector as well as how this has

ultimately hampered the island economy in general. We explain how Cyprus made considerable efforts in terms of the changes it had to implement under the *MoU* program. These efforts were evident by credit rating upgrades and the subsequent economic recovery of Cyprus. Although the outlook is positive today, Cyprus yet faces many challenges. Important lessons in this analysis and case study offer insights to planners to avoid grave errors from bail-in programs in the European Union down the road. Finally, we show that the key to macroeconomic and financial stability is in building economic competitiveness through healthy capital expenditures in Cyprus.

This article is organized as follows, Section II provides a socioeconomic and political history of Cyprus. Section III analyses the main macroeconomic variables and events before and after the economic and financial crisis of 2013. Section IV provides an overview of the structure of the Cypriot banking system, the main reasons of the banking crisis, and analyzes stress on Cypriot banks and the economy. Section V provides an economic analysis of the partial sales of assets of the Cyprus Cooperative bank to *Hellenic Bank* and the macroeconomic consequences of the sale. Section VI analyses the structure of public debt. Section VII discusses stimulus measures for economic growth. Section VIII presents a summary and concludes.

II. Socioeconomic and Political History

The population of Cyprus is 1,194,260 citizens. About 20% are Turkish Cypriots living mainly in the Turkish occupied area of Cyprus.[1] Cyprus represents about 0.23% of the 512,600,000 population of the twenty-eight-member countries of the European Union (EU). Cyprus along with Malta and Luxemburg are the smallest EU members. Its strategic location in the east Mediterranean Sea resulted in foreign occupation at different periods by the Mesopotamian Assyrians, Egyptians, Romans, Persians, Umayyad and Rashidun Caliphates, the French House of Lusignan, Venetians, and Knights Templar. The Ottoman Empire conquest of Cyprus in 1571 purged Catholicism giving rise to the *Greek Orthodox Church of Cyprus* as an autocephalous religion (Hatzimihail, 2013).

1. The ancient Turkish Cypriot culture is strongly identified with that of Greek Cypriots.

England took-over Cyprus in 1878 to truncate Russian shipping lanes under the Treaty of Berlin.[2] Turkey accepted sovereignty of the United Kingdom over Cyprus under the Lausanne Treaty of 1923. This relationship lasted until 1960 when Cyprus became an independent country. The Lausanne Treaty intensified Cypriot-Hellenic demands for union with Greece (enosis, GR. Ένωσις). When the English Parliament repressed uprisings of Cypriot-Greek enosis seeking nationalists in 1931, the labor movement, represented mainly by the leftist party AKEL, gained a strong foothold in local politics. British Parliament responded with a decree that stipulated admission to the Cyprus Bar required training in a London Inn and acceptance as a barrister or solicitor in England. Cypriot attorneys were prohibited from studying in either of the two Greek law schools. The commercial code of Cyprus was rigidly Anglo-formed for three decades under English Common Law.

Neither Napoleonic nor Greek civil code influenced Cypriot commercial law.[3] Thus, Cyprus and Greece are opposite commercial legal systems. Cyprus business is done in English Common Law while Greek commerce operates under Napoleonic code. Enosis loving Greek Cypriots are unwittingly seeking union with the French and German legal community shown less capable of managing economies as compared with England, the United States, or Australia by LLSV, Acemoglu and Robinson (2012) and the World Bank Group Ease of Doing Business report (2019). The Republic of Cyprus gained independence in 1960 under the Zurich-London Agreements that began in February of 1959. Cypriot youth could now study law in Greece. This created a new generation of attorneys pressuring for inclusion of Germanic and French civil code notions to be introduced into Cyprus Legal System.

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2. The island of Cyprus was leased to the British by The Ottoman Empire under the Treaty of Berlin.

3. See Hatzis, A., (2002), "The Short-Lived Influence of Napoleonic Civil Code in 19th Century Greece," European Journal of Law and Economics 14, 253-263. Roman Byzantine law as described in the *Hexabiblios* of Konstantinos Armenopoulos (1320-1383) was replaced by a Commercial Code, a Criminal Code, a Code of Civil Procedure, and a Code of Criminal Procedure adhering to the 1804 Napoleonic *Code Civil des Française*. The French Commercial Code of 1807 (*Code de Commerce*) was adopted in entreaty in 1828. Modern Greek civil code was adopted in 1940 taking effect in 1946. The Commercial Code of Greece is French. The rest is dominated by German pandectists teaching from the *usus modernus pandectarum*. Hence, Greek civil code is both French and German in origin.

The composition of the Cypriot Bar is mixed between Common Law and civil code trained members inducing political disunity contributing to crisis. Older generations of judges, politicians and attorneys are English Common Law thinkers while the youth are French Napoleonic or Germanic in thinking. An extremely rigid constitution stipulates the monitoring of independent officers including a *Deputy Governor of the Central Bank, an Accountant General and Deputy Accountant General* of Cyprus. Greek and Turkish became the official languages of Cyprus in lieu of English in 1960. Expansive reasoning is absent in Cypriot judicial decisions where statutory and case law universally coexist. English commercial laws were directly copied over to Cyprus with 1963 shipping legislation, a 1994 Sale of Goods Act, a Trade Descriptions Law in 1987, a Copyright Law in 1979, and an International Trusts Law adopted in 1992 in strong response to Turkish Islamic and Greek continental legal encroachment. Common Law and case law of The United States, Canada, New Zealand, and Australia have the most persuasive contemporary authority in Cyprus commercial law initially cloned from Britain. The Supreme Court of Cyprus fully embraces stare decisis from England. Cyprus legislators are reticent to apply stare decisis (precedence) to overrule the Supreme Court or swap statutes with civil codes.

Turkey illegally invaded Cyprus in 1974 and yet squats on a third of the island. Mainland radical Turks defiantly announced a Turkish Republic of Northern Cyprus organized under the 1839-1876 *Tanzimat* reforms of Ottoman law. Turkish occupation remains unrecognized by the international community and the United Nations. The Republic of Cyprus joined the European Union in 2004 under the Vienna Convention adopting the International Sale of Goods (CISG)—which England did not adopt. A clause in the Cypriot constitution forces decisions of the English House of Lords to be binding on Cyprus. The controversy regarding the invasion of Cyprus by Turkey has exacerbated frustration over the incapability of extending Cyprus Republic rights to Turkish Cypriots. These are allegedly held against their will under illegal Sunni Turk military occupation in the north. English Common Law trained politicians and legal professionals in Cyprus are extremely reticent to succumb to *Tanzimat* or Greek Civil Code encroachments. The Rules of Civil Procedure of Cyprus, for instance, have yet to be translated into Greek. The Cyprus judiciary strongly identifies with English Common Law even when a law in question is of continental civil code tradition.

Institutional theory until the turn of the century focused on law as

but a part of a nexus of factors including latitude, language, culture, and religion (La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1997, 1998, 1999a, 1999b hereafter abbreviated as LLSV). Acemoğlu and Robinson (2012) make a compelling argument that discards all but law as central in economic development. Marxist, Islamic, French and German civil code countries actively compete with English Common Law governments within the European Union.[4] We address primary political-economic weaknesses in the Greek economy that rendered Cyprus vulnerable to fiscal crisis, recession and near default. Today, Cyprus yet straggles with excessive public debt, high taxes, and economic stagnation. The island country plans to revitalize its economy by bringing to the fore productive, competitive, and high export potential sectors to create sustainable jobs and development.

Nobel Laureate Eugene Fama (1980) describes banks as financial intermediary institutions that take in deposits and use proceeds to buy securities. Bank operations regarding financing decisions are irrelevant under the Modigliani-Miller theorem according to Fama (1980) and Wallace (1981).[5] Irrelevance implies that controlling either the creation of bank deposits or security acquisition management activities is unnecessary to equilibrate price with real activity. Nonetheless banks are part of a process interacting a "pure nominal commodity of unit of account" with Basel II, 8% minimum reserve requirements to form a real economic good. This real economic good is an asset ultimately controlled by central banks in regulatory oversight of operations of regional public depositories. Central banks are unfortunately highly susceptible to political manipulation and thus of dubious economic value as we show in a case study below.[6]

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4. Daron Acemoğlu and James Robinson, (2012) "Why Nations Fail," Currency press, 1-529. These highly regarded developmental economists describe how Common Law trumps civil code and all other legal systems in economic development across the globe in gory detail with seemingly endless examples. Acemoğlu's website provides over a hundred research papers in top journals providing academic precision.

5. See Modigliani, F. and Miller, M.H. (1958) The Cost of Capital, Corporation Finance and the Theory of Investment. American Economic Review, 48, 261-297.

6. See Friedrich Hayek (1976), "Denationalization of Money," Hobart Press. The Nobel Lauriat economist concludes that central bank monetary monopolies should be abolished, "The abolition of the government monopoly of money was conceived to prevent the bouts of acute inflation and deflation which have plagued the world for the past 60 years. It proves on examination to be also the much-needed cure for a more deep-seated disease: the recurrent waves of depression and unemployment that have been represented as an inherent and deadly defect of capitalism."

III. Economic Crisis

This section provides a historical account of the downgrades of the Cypriot economy by the three major credit rating agencies (Fitch, Moody's and Standard & Poor's) along with an overview of the major reasons for these downgrades. The section proceeds with the analysis of the main macroeconomic variables and events before and after the economic-financial crisis of 2013.

A. The Credit Ratings of the Republic of Cyprus

Table 1 presents long-term debt ratings of the Republic of Cyprus by Fitch, Moody's and Standard & Poor's from 1999 through 2017. Note that until the middle of 2011 credit ratings for the Republic of Cyprus were quite satisfactory. In November 2010, Standard & Poor's downgraded Cyprus from A+ to A. The primary reason given for the downgrade was an increase of non-performing loans (NPL) of Cypriot banks and increasing government budget deficits. At that time, NPLs came mainly from *Popular Bank* in Greece. In February 2011, Moody's downgraded Cyprus from Aa3 to A2 (Standard & Poor's corresponding ratings are from AA- to A), i.e., to an average lender. The main reasons given were (a) growing budget deficits, (b) exposure of Cypriot banks to *Greek Government Bonds* and private loans and (c) declining competitiveness of the Cypriot economy.

The EU forced 'haircut' of Cyprus government debt in November 2011 was a blow to the Cypriot economy. Aggregate loss for the three major Cypriot banks was €4 billion or 20% of the Cypriot GDP in 2011. The decision of Cypriot authorities to agree to the 'haircut' without negotiating any compensation for Cypriot banks demonstrates the financial callousness of island governors and opportunistic bankers. Large budget deficits of 2009 and 2010 combined with large lending losses prompted the three credit rating agencies to downgrade Cyprus eight times during 2011 (Demetriades, 2017).

Economic conditions in the Republic of Cyprus deteriorated further in 2012. The minister of finance desperately sought loans to cover budget deficits and repay maturing debts. Borrowing was mainly short-term. Therefore, public debt gradually shifted from medium-term to short-term maturity. Banks needed immediate recapitalization due to the haircut of *Greek Government Bonds* and losses stemming from Greek non-performing loans. Cyprus nearly halted debt service barely

TABLE 1. Credit Ratings of the long-term debt of the Republic of Cyprus

Fitch		Moody's		Standard & Poor's	
4-Feb-02	AA	19-Jul-99	A2	3-Dec-99	AA–
12-Jul-07	AA–	10-Jul-07	A1	12-Aug-03	A+
27-Jan-11	BBB–	3-Jan-08	Aa3	1-Dec-04	A
31-May-11	A–	24-Feb-11	A2	24-Απρ-08	A+
10-Aug-11	BBB	27-Jul-11	Baa1	16-Nov-10	A
25-Jun-12	BB+	4-Nov-11	Ba3	30-Mar-11	A–
21-Nov-12	BB–	12-Mar-12	Ba1	27-Oct-11	BBB
25-Jan-13	B–	13-Jun-12	Ba3	13-Jan-12	BB+
3-Jun-13	CCC	8-Oct-12	B3	20-Dec-12	CCC+
25-Apr-14	B–	10-Jan-13	Caa3	21-Mar-13	CCC
24-Apr-15	B–	14-Nov-14	B3	29-Nov-13	B–
23-Oct-15	B+	13-Nov-15	B1	25-Apr-14	B
22-Apr-16	B+	11-Nov-16	B1	24-Oct-14	B+
22-Jul-16	B+	28-Jul-17	Ba3	25-Sep-15	BB–
21-Oct-16	BB–			19-Jun-16	BB
21-Apr-17	BB–			17-Mar-17	BB+
23-Oct-17	BB+			25-Sep-17	BB+
25-Mar-18	BB+			16-Mar-18	BB+

Source: Various reports issued by the credit rating agencies.

sidestepping default at the end of 2012. In that year the Cyprus economy received a total of seven additional downgrades. Cypriot government debt was downgraded to non-investment grade that year. Aggregate loan value maturing in 2013 was €5.122 billion. These loans accounted for 34.3% of total public debt. A total of €4.826 billion in loans matured in the first six months of 2013. The leftist led Government of Cyprus unsuccessfully sought loans from China and Russia in mid-2012 to aver looming default.

In April 2013, the Government of Cyprus was forced to accept, with minor variations, the terms of the Troika *Memorandum of Understanding* (*MoU*), introduced initially in mid-2012. Cyprus operated under the *MoU* from April 2013 to March 2016. Cyprus credit improved in the post *MoU* period and by mid-2016 the economy was on the road to recovery. Government debt was upgraded from highly-speculative to speculative. Cypriot economic prospects are now positive.

B. Analysis of Budget Deficits and Public Debt

Table 2 presents Gross Domestic Product (GDP) figures as well as Cypriot Government budget deficits and public debt for the years 2000 through 2017. The GDP was increasing at an annual rate ranging between 4% and 9.4% between the years of 2000 to 2008. Moreover, the budget deficit and public debt, relative to GDP steadily declined. In 2007 and 2008 the budget deficit turned to surplus while public debt relative to GDP declined in both years to the lowest levels (45.1%). These improvements in conjunction with low unemployment (3.9% in 2007 and 3.7% in 2008) lifted the Cypriot economy to a level among the healthiest in the European Union.

In 2009, the GDP declined by 1.8%. Budget surplus turned into a deficit of 5.4% of GDP while public debt relative to GDP soared to 53.8%. Budget deficits continued at about the same rate until the crisis of 2013. Between 2008 and 2012, short and medium-term debt deficit financing resulted in an increase of public debt relative to GDP from 45.1% to 79.7% of GDP. The €6.960 (= 15.527 – 8.567) billion increase in public debt was mainly the result of (a) financing budget deficits during the years 2009-2012 with €4.133 billion and (b) the recapitalization of *Popular Bank* in June 2012 with debt of €1.889 billion.

By 2012, the Cypriot Government had great difficulty stemming budget deficits and servicing debts. Borrowing from the European Union and the International Monetary Fund was the only way to avoid a disorderly default despite dire consequences for the island economy. The 2013 *MoU* obliged the Republic to face the budget deficit and other serious distortions in the economy while consolidating the banking sector. Gross domestic product (GDP) in Cyprus declined by 6.9% in 2013 and 2.9% in 2014 due to the implementation of *MoU*'s austerity and banking sector restructuring measures. At the time of the Cypriot banking meltdown in 2014, public debt reached 107.5% of GDP.

The economy of Cyprus enjoyed an annual increase in GDP with a concomitant decrease in public debt ex-ante the bank crisis. Cypriot GDP increased by €1.608 billion (+9.1%) while public debt decreased by €197 million (–1%) between 2014 and 2017. Public debt is slated to increase ex-post in 2018 by €22 billion or roughly by 112% of GDP because of the Cyprus Cooperative Bank (CCB) debacle described below.

TABLE 2. GDP, Budget Deficits and Public Debt

	Gross Domestic Product (GDP)		Budget Deficit (–) / Surplus (+)		Public Debt	
Year	mil. euros	% change	mil. euros	% change	mil. euros	% GDP
2000	10,595	–	–232	–2.2%	5,814	54.9%
2001	11,417	7.8%	–236	–2.1%	6,453	56.5%
2002	11,877	4.0%	–482	–4.1%	7,096	59.7%
2003	12,845	8.2%	–758	–5.9%	8,108	63.1%
2004	13,856	7.9%	–510	–3.7%	8,883	64.1%
2005	14,822	7.0%	–321	–2.2%	9,311	62.8%
2006	16,000	7.9%	–164	–1.0%	9,390	58.7%
2007	17,512	9.4%	564	3.2%	9,370	53.5%
2008	19,006	8.5%	165	0.9%	8,567	45.1%
2009	18,674	–1.8%	–1,015	–5.4%	10,047	53.8%
2010	19,300	3.4%	–912	–4.7%	10,862	56.3%
2011	19,731	2.2%	–1,122	–5.7%	12,966	65.7%
2012	19,490	–1.2%	–1,082	–5.6%	15,527	79.7%
2013	18,141	–6.9%	–931	–5.1%	18,615	102.6%
2014	17,606	–2.9%	–1,577#	–9.0%	18,922	107.5%
2015	17,742	0.8%	–236#	–1.3%	19,072	107.5%
2016	18,219	2.7%	59	0.3%	19,418	106.6%
2017	19,214	5.5%	344	1.8%	18,725	97.5%

Note Data provided by the Statistical Department of the Cyprus Ministry of Finance. GDP measures the value of goods and services in current prices produced in each year. Budget surplus = government revenue minus expenditure. # Denotes that figures include amounts used in the recapitalization of the Cooperative Central Bank of €1.5 billion in 2014 and €175 million in 2015. Public national account debt levels are higher than those reported by the Department of Public Debt Management due to the inclusion of security amounts given by the government. Specifically, 2018 debt in the national account is higher by €559 million.

C. Economic Growth: Post MoU Period by Sector

This section covers the period 2011 to 2017, from two years before and four years after the implementation of *MoU*'s austerity measures in 2013. We compare production levels across various sectors of the Cyprus economy to understand the economic impact of the 2013 crisis. Table 3 presents the relevant statistics.

According to the table, in 2015 most of the sectors of the Cypriot economy shrank significantly. The areas with the greatest declines were those of construction 53.8% and mining and quarrying 32.5% reflecting a shift away from capital projects. Other areas with dramatic declines included the activities of households as employers 28.4%, public administration, defense and social security services 25.8%, arts and entertainment 24.2%, agriculture and fishing 24%, manufacturing 17.3%, retail 13.3%, real estate management 10.6% and transport and storage 10.5%. Nevertheless, some sectors grew. Specifically, the sector of information and communication grew by 18.6%, financial and insurance services by 18.4%, electricity and gas by 14.7% and supply, sewage treatment and waste management by 8.8%. Overall, the Cyprus economy shrunk by about 10% during the crisis.

Taxes increased by 16.9% retarding Cyprus commerce considering the projected capital investment drop that would have otherwise allowed taxes to have positive multiplier effects. During the years 2016 - 17, the Cypriot Economy began to recover. Compared with 2015, the GDP increased by 8.3% (see table 1) and full-time employment grew by 7%. Cyprus has recently enjoyed double-digit growth rates (last column of table 3) in the sectors of mining and quarrying 40.8%, construction 34.8%, tourism 23.2%, water supply, sewage treatment and waste management 15.8%, processing and agriculture 13.7%, forestry and fisheries 11.1%. Other sectors showed single-digit rates of recovery. The Cyprus finance sector has flatlined (–1.9%) reflecting disinvested local saving because Cyprus heads of households distrust the European Union (EU) financial system that absconded Cyprus deposits with no reciprocal benefit.

Compared with 2011, sectors that exhibited significant growth were those of water supply and sewage treatment 26%, information and communication 25.1%, tourism 23.1%, electricity and natural gas 22.6%, financial services 16.2% and administrative and support services 8.8%. Cyprus enjoyed considerable growth during the last two years across most sectors. Cyprus sectors that exhibited the biggest declines

TABLE 3. Sectors in the Republic of Cyprus, Percentage of GDP, and Annual Changes, Year 2017

Sectors	% of GDP	% Change 2011-15	% Change 2011-17	% Change 2015-17
1. Taxes	13.6%	–2.9%	13.6%	16.9%
2. Financial and Insurance Services	10.2%	18.4%	16.2%	–1.9%
3. Wholesale, Retail and Repairs	9.4%	–13.3%	–7.5%	6.8%
4. Real Estate Management	8.5%	–10.6%	–7.6%	3.3%
5. Public Administration and Defence, Compulsory Social Insurance	7.8%	–25.8%	–24.0%	2.4%
6. Scientific and Technical Activities	7.1%	–7.7%	0.6%	9.0%
7. Tourism	6.4%	–0.1%	23.1%	23.2%
8. Transport and Storage	6.1%	–10.5%	–9.6%	1.0%
9. Education	5.8%	–5.8%	–1.5%	4.5%
10. Manufacturing Industries	4.5%	–17.3%	–6.0%	13.7%
11. News and Communication	4.0%	18.6%	25.1%	5.5%
12. Construction	3.9%	–53.8%	–37.8%	34.8%
13. Health and Social Welfare	3.6%	–5.4%	0.0%	5.6%
14. Agriculture, Forestry and Fishing	1.8%	–24.0%	–21.2%	3.7%
15. Administration and Support	1.5%	–2.1%	8.8%	11.1%
16. Electricity, Natural Gas, etc.	1.5%	14.7%	22.6%	6.8%
17. Art. Fun and Entertainment	1.4%	–24.2%	–18.7%	7.2%
18. Other Activities	1.4%	–8.7%	–4.0%	5.1%
19. Activities of Households as Employers	0.9%	–28.4%	–26.4%	2.8%
20. Water Supply, Sewage Treatment, etc.	0.8%	8.8%	26.0%	15.8%
21. Mines and Quarries	0.2%	–32.5%	–4.9%	40.8%

Note: Sectors are ranked based on contributions to Cypriot GDP in 2017. The second column shows the percentage contribution of each GDP sector. The last three columns show percentage changes in production of each sector for the periods 2011-15, 2011-17 and 2015-17. Calculations are based on data from the Statistical Office and the Ministry of Finance of the Republic of Cyprus.

from 2011-17 were construction (–37.8%), the activities of households as employers (–26.4%), public administration and defense (–24%), agriculture, forestry and fisheries (–21.2%), arts and entertainment (–18.7%), and transport and storage (–9.6%). The remarkable recovery of the tourism industry was mainly due to political instability and terrorist activities in neighboring countries. Some of the growth was capricious. For instance, the recovery of the construction industry in 2016 compared with 2015 was mainly due to (a) foreigners buying expensive real estate properties in Cyprus in order to be awarded Cypriot citizenship, (b) the abandonment of real estate property taxes and (c) the reduction of property transfer taxes.

TABLE 4. Categories of Public Expenditures Over Time (Millions of Euros)

Year	Operating Expenses	Salaries	Social Benefits	Capital Expenditures	Interest	Total
2008	1,368	2,503	2,154	776	499	7,300
	18.7%	34.3%	29.5%	10.6%	6.8%	38.4%
2009	1,398	2,729	2,289	1,014	432	7,862
	17.8%	34.7%	29.1%	12.9%	5.5%	42.1%
2010	1,319	2,764	2,541	1,112	380	8,115
	16.2%	34.1%	31.3%	13.7%	4.7%	42.0%
2011	1,420	2,882	2,693	956	402	8,355
	17.0%	34.5%	32.2%	11.5%	4.8%	42.3%
2012	1,376	2,844	2,675	708	564	8,167
	16.8%	34.8%	32.8%	8.7%	6.9%	41.9%
2013	1,048	2,594	2,579	678	696	7,595
	13.8%	34.2%	34.0%	8.9%	9.2%	41.9%
2014	971	2,341	2,549	2,125	607	8,592
	11.3%	27.2%	29.7%	24.7%	7.1%	48.8%
2015	1,011	2,271	2,539	718	674	7,213
	14.0%	31.5%	35.2%	9.9%	9.3%	40.7%
2016	929	2,260	2,661	574	604	7,028
	13.2%	32.2%	37.9%	8.2%	8.6%	38.6%
2017	1,056	2,350	2,673	637	611	7,328
	14.4%	32.1%	36.5%	8.7%	8.3%	38.1%

(*Continued*)

TABLE 4. (Continued)

Year	Operating Expenses	Salaries	Social Benefits	Capital Expenditures	Interest	Total
Decade 2008-17						
Change	–312	–152	520	–139	112	27
% change	–22.8%	–6.1%	24.1%	–18.0%	22.4%	0.4%
Change excluding expenditure for social benefits –492 million euros or –9.6%.						
Six-years 2012-17						
Change	–319	–494	–1	–72	47	–840
% change	–23.2%	–17.4%	–0.1%	–10.1%	8.3%	–10.3%
Change excluding expenditure for social benefits –838 million euros or –15.3%.						

Note: Operating Expenses include the value of goods and services consumed by the public sector and the contribution of government to international organizations. Salaries include total remuneration and other benefits of employees in the public sector. Social Services include transfers, pensions and allowances to households to counter certain risks. Capital Expenditure includes expenditure on buildings, roads, mechanical equipment and transfers in cash or in kind for the acquisition of capital goods. Interest includes that on public debt. Amounts are expressed in millions of euros. Percentages below category amounts are expressed in total expenditure. Percentage below total expenditure is expressed in GDP.

The economic recovery in Cyprus is mainly due to (a) the increase of tourism in Cyprus and (b) the increase in demand for real estate and land from foreign citizens and companies (Zenios and Efrosyni, 2015).[7] A secondary reason is the growth of many other sectors such as processing, production of electricity, and administrative and scientific activities in 2017. Labor party forces remain unchecked evidenced by excessive government spending for near-zero multiplier-initiated welfare programs and a continuous decline in capital expenditures. Both negatively impact the competitiveness of the Cypriot economy in 2017.

D. Government Expenditure: Assessment

Table 4 shows the trajectory of five main categories of Republic of Cyprus expenditures from 2008 through 2017. Interestingly, total public expenditures in 2017 were roughly at the same level as in 2008. However, their composition differs greatly from that of 2008. Specifically, operating costs, payroll and capital expenditures were lower than 2008 levels by 22.8%, 6.1% and 18.0%, respectively. In contrast, social welfare expenditures and public debt interest were higher by 24.1% and 22.4%, respectively. Note that in 2017, relative to 2008, total expenditure excluding social welfare benefits declined by 9.6%. This decline, however, was fully offset by the increase in social welfare expenditures.

Because of the implementation of *MoU* austerity measures, public expenditures in 2017 dropped by 10.3%, compared with those of 2012. Specifically, the government payroll was reduced by 17.4%, operating expenses by 23.2% and capital expenditures by 10.1%. On the other hand, interest on public debt increased by 8.3%. Expenditures related to social benefits based on these developments were expected to be lower in the years 2016 and 2017 when compared with corresponding expenditures in 2015. Striking is the fact that spending on social benefits rose by €520 million (+24.1%) within the last decade while remaining aggregate expenses decreased by €492 million or by 9.6%. The total amount spent on social benefits exceeded government payroll by €323 million In 2017. This is the main cause of fiscal deficits before the financial crisis.

7. The EU Commission is enforcing greater background screening for non-EU nationals acquiring golden passport citizenship via investments. Cyprus is but one of twenty EU countries using golden passport schemes to attract capital. Cyprus, Malta and Bulgaria issue passports in return for foreign direct investments of between €1m and €2m.

In addition, table 4 shows the trajectory of five categories of expenditure as a percentage of total Cypriot government spending. Expenditure for social benefits increased from 29.5% of total spending in 2008 to 32.8% in 2012 and to 37.9% in 2016. In 2017 the expenditure for social benefits decreased to 36.5% of GDP since the GDP in 2017 increased at a faster rate than expenditures for social benefits (5.5% vs 0.5%). The rise of social benefits damaged the fragile island economy leaving it unprotected from recession.

The main reason for the creation of the Cyprus Guaranteed Minimum Income (GMI) program in 2014 was integration for better control and management of the government benefits system and to stop social welfare benefits fraud. Our data shows that the GMI program has become a welfare pork barrel. Another worrying aspect concerns the reduction of capital expenditure from €776 million in 2008, to €637 million in 2017 or by 8.7%. This decrease will have a severe negative impact on the quality of infrastructure, public services, and on the competitiveness of the Cypriot economy over time. It is noted however, that the increase in capital expenditure in 2017 by €63 million or by 11% is a step in the right direction.

IV. Banking Crisis

This section provides an overview of the structure of the Cypriot banking system to explain the main reasons behind the banking crisis as linked within the Cypriot economy, government framework and history explained above.

A. Pre-Crises Cypriot Banking System

Before the economic crisis of 2013, fifteen banks operated in Cyprus, of which twelve were commercial and three were specialized credit institutions. The banking system also included several cooperative credit institutions supervised by the *Central Cooperative Bank*. The *Central Bank of Cyprus* authorized twenty-six international banking units operating in Cyprus while supervising the entire banking system (*Central Bank of Cyprus*, 2012). Cypriot bank activities included insurance, leasing, fund management, and investment advisory services. The three largest Cypriot banks, *Laiki Bank* (*Popular Bank*), *Bank of Cyprus* and *Hellenic Bank* had operations abroad, especially in countries

TABLE 5. Major Cypriot Banks before the Crisis

Year	2007	2008	2009	2010	2011
Bank of Cyprus					
Total Assets	31,763	36,131	39,411	42,638	37,474
Deposits	25,179	27,936	28,585	32,953	29,654
Net Income	491	479	322	303	–1,366
Popular Bank					
Total Assets	30,258	38,367	41,828	42,580	33,762
Deposits	20,697	24,828	23,885	25,508	20,161
Net Income	593	403	170	89	–3,646
Hellenic Bank					
Total Assets	7,357	7,850	8,296	8,251	8,275
Deposits	5,860	6,147	6,574	6,854	7,107
Net Income	135	31	28	9	–100
Total of the three banks					
Total Assets	69,378	75,283	89,535	93,469	79,511
Deposits	46,462	58,911	59,044	65,315	56,922
Net Income	1,219	913	520	401	–5,112

Note: Figures above are based on annual bank reports. The last annual report of Popular Bank is that of 2011. Popular Bank has been under liquidation since March of 2013. Figures are in millions of euros.

with a strong Greek presence. The island economy developed on a business model in which a politically coerced banking sector had a disproportionate influence on the economics and politics of Cyprus.

Cypriot banks attracted substantial inflows of foreign deposits from 2004 to 2010 by offering high term rates. Aggregate Cyprus banking balance sheet assets increased from 286% of GDP in 2004 to 600% of GDP in 2010. During this period, banks were profitable and had high capital reserves. The rapid credit expansion was mainly the result of loans provided to individuals and businesses with low credit capacity and insufficient collateral. These bad loans reflected lending agency problems as the main reason for the reduction in aggregate banking profits in Cyprus. Table 5 presents the assets, deposits and net profits of the three largest Cypriot banks between 2007 and 2011 (pre-crisis period). In 2010 the total assets of *Bank of Cyprus* and *Popular Bank* were nearly €43 billion. The deposits of *Bank of Cyprus*, however, exceeded those of *Popular Bank* by €7.445 billion. *Hellenic Bank* was comparatively smaller (*Central Bank of Cyprus*, 2013a).

The three banks were profitable up to 2010. The decline in both

economic activity and household income combined with rising unemployment in Greece led to an avalanche of non-performing loans (NPLs). The 'haircut' of Greek sovereign bonds in 2011 and losses from NPLs contributed to bank capital erosion. *Popular Bank*, *Bank of Cyprus* and *Hellenic Bank* reported losses of €3.646, €1.366 and €0.1 billion euros, respectively in 2011. Haircut losses are estimated at between €3.5 and €4 billion euros.

Moody's, Standard & Poor's and Fitch downgraded the major banks in Cyprus including *Central Cooperative Bank* in 2011 and 2012. Rating agency reasons for the downgrade were (a) Republic of Cyprus fiscal deficits, (b) the accumulated problems in government balance sheets, (c) the large exposure of Cyprus banks to Greek private and sovereign bond debt and (d) problems in financing and low bank liquidity due to high regional economic and political uncertainty. The downgrades of both the sovereignty of Cyprus and Cypriot international banks resulted in the exclusion of both institutions from external capital markets.

B. Popular (Laiki) Bank and Emergency Liquidity Assistance

Between April and July 2012, Popular (Laiki) Bank absorbed €9.9 billion of liquidity through the *EU Emergency Liquidity Assistance* (*ELA*) mechanism. Some €5.5 billion was channeled to Greece to meet the needs of its branches due to massive withdrawals by Greek depositors (European Commission and European Central Bank, 2013a). Banking instability in Athens sparked Cypriot bank viability concerns driving a Cyprus depositor run on Laiki cash. The run on Laiki intensified as the Cyprus economy spiraled downward. Ironically, a bank liquidity run by depositors was the key reason for the existence of the *ELA* mechanism. Laiki was forced to resort to onerous *ELA* debt to restore its liquidity or it would have been forced to close operations. Laiki in a very real financial sense found itself between Scylla and Charybdis (Σκύλλα και Χάρυβδη).

The *ELA* is a short-term type of borrowing on net 14-day terms. The bank is required to deposit an equivalent value in assets relative to the amount borrowed as collateral with the central bank of the country in which it operates (European Commission and European Central Bank, 2013b). The *ELA* may be terminated by the central bank of the borrowing country or through a decision of two thirds of the members of the board of directors of the European Central Bank (ECB). In the

case of *Laiki Bank*, *ELA* borrowing was deemed necessary to eliminate the financial gap created in early 2012 by a large volume of cash withdrawals (Xiouros, 2016).

Deposit disbursements began in Greece then spread to Cyprus. Withdrawals further intensified with depositor fears of a Laiki crash. The two worst investments by Laiki managers were in *Greek Government Bonds* combined with low recovery rates of individual and commercial non-performing loans (NPLs) in Cyprus and throughout Greece. Laiki collateralized the *ELA* using €20 billion of bank assets. The collateral consisted of loans from the asset side of its balance sheet. For about every two euros of collateral, one euro of *ELA* was obtained. The €25.9 billion of loans in the *Laiki Bank* portfolio as of June 2012 included €9.9 billion in individual and commercial loans throughout Greece. This amount remained at about the same level until Laiki's liquidation in March of 2013.

The European Central Bank (ECB) decided to terminate the emergency liquidity provision of Laiki in March of 2013. This decision spelled the end of *Laiki Bank*. A series of important developments followed that included capital controls. Cypriot bank liquidations of branches located in Greece outside of Cyprus, the liquidation of *Laiki Bank*, the restructuring of *Bank of Cyprus* and finally the restructuring of *Central Cooperative Bank* in 2018.

Piraeus Bank in Athens then acquired *Laiki Bank* in Cyprus without any arrangements with the Central Bank of Greece regarding the repayment of the *ELA* (Piraeus Bank, 2013). The entire Laiki loan portfolio in Greece collateralized for *ELA* was transferred entirely to Piraeus Bank by the *Central Bank of Cyprus*. Consequently, the *Central Bank of Cyprus* was left exposed to the unsecured *ELA* granted to *Laiki Bank*. A moral hazard had been created by a small group of mis and malfeasant Cypriot and Greek bank managers as per agency theory of Jensen and Meckling (1976).

C. Capital Controls

Capital control is achieved by imposing restrictive measures on the movement of capital inside and outside an EU country. This contradicts the fundamental principle of the European Union concerning free movement of capital. Capital controls are imposed when there is fear of imminent collapse from massive bank-run-withdrawal. Capital controls can only be applied when an *ELA* is terminated. Banks with insufficient

liquidity to cope with massive withdrawals are forced to terminate operations. Hence, the imposition of capital controls required temporary closure of all Cyprus bank branches. Cessation of banking operations (a) gives managers time to assimilate new information and (b) allows for time to pass for the savings panic to fade.

Cypriot bank branches closed for twelve days following the termination of Laiki's *ELA* on March 16, 2013. Capital restrictions were then imposed on Cyprus for two years. These included:
1) the imposition of a ceiling on daily withdrawals, initially up to €300, later lowered to €100,
2) the maximum overall spending for expatriates was set to €2,000 and withdrawals to €300 per day,
3) students studying abroad were allowed up to €5,000 in expenditures per quarter,
4) exporting money abroad for overseas investments was prohibited,
5) and transferring amounts of over €5,000 abroad required the approval of a special committee. Firms were requested to produce documents for each creditor/supplier payment request and these then needed approval for any amount over €200,000,
6) documents were required for transactions regarding the transfer of funds from one bank account to another within Cyprus,
7) checks could be deposited in the beneficiary's account only to preclude personal financing of commerce and
8) time deposits expiring during the month following the imposition of capital controls were extended for at least one month and only a part of them could be transferred to an open account.

Restrictions gradually relaxed to normal by April 6, 2015. Cyprus is the first example of capital controls in the Eurozone. This is the result of conflict over investment flows between Moscow, New York, London, Frankfurt, Paris, and Cyprus. Cyprus is the automatic loser as smallest country in population and geographical size.

D. Acquisition of the Branches of Cypriot Banks in Greece

By March 2013, the Republic of Cyprus was on the verge of declaring a moratorium on debt repayment. This would have sparked uncontrolled default and perhaps collapse of the Cyprus economy. An important development during this period was the acquisition of *Laiki Bank*, *Bank of Cyprus* and *Hellenic Bank* branches located in Greece by the Piraeus Bank. The three Cypriot banks held over 312 branches in Greece and

employed 5,268 taxpaying wage earners.

The aggregate loan portfolio value of the three banks in Greece was €23.9 billion against deposits of €15 billion. The estimated loss from non-performing loans was set at €7.7 billion or 32.2% (= 7.7 ÷ 23.9) of loan portfolio aggregate value. The total acquisition cost for Piraeus Bank of the loans and branches of Cypriot banks in Greece was €15.5 billion. This cost included the deposits of the three banks totaling €15 billion, assumed by Piraeus Bank, plus €524 million paid to Cypriot banks as compensation for the acquisition of branches and loans. Piraeus Bank benefitted from unilateral Cypriot bank portfolio acquisitions by €0.7 (= 23.9 –7.7 –15.5) billion even if the damage from non-performing loans was as great as estimated. If the 'economic' value of the branches is also included (i.e., the value of the operations in Greece), the total benefit of Piraeus Bank from the acquisition exceeds €0.7 billion.

Expected Cypriot banking loss estimation from loans transferred to Greece is from Pacific Investment Management Company (PIMCO) based on Piraeus Bank's interim financial statements of 2013. Loss provisions across all types of loans were set to 18.5% of nominal value. Consequently, the estimated losses should have been €4.4 billion and not €7.7 billion. Based on the latter estimate, Piraeus Bank benefitted from the acquisition of loans by €4 (= 23.9 – 4.4 – 15.5) billion. Along with the economic value of the branches, Piraeus Bank's overall benefit is certainly much greater. An amount of €4.1 billion appears in quarterly statements of the bank's financial position as a reduction of accounting goodwill related to the acquisition of Cypriot banks. Transfer of the three Cypriot banks to Greece was forced by Troika as a prerequisite for the approval of the Cyprus financial assistance package. The troika's objective was to prevent a potential transfer of the Cyprus banking crisis to Greece and the Eurozone (*Central Bank of Cyprus*, 2013b). The selection of Piraeus Bank was made by the *Greek Financial Stability Fund*, which financed the acquisition. The Republic of Cyprus was not involved in the decision regarding the selection of the buyer. Also, its role in defining the terms and the amount of consideration received was negligible.

Unsurprisingly, Piraeus Bank became the second largest in Greece following the Cypriot loan portfolio acquisition with fixed assets of €93 billion, a loan portfolio of €72 billion against deposits of €54 billion. The largest lender at that time, was the National Bank of Greece with assets of €100 billion. Third in size was Alpha Bank with assets of €80 billion. The Cypriot banking presence in Greece came to an end with

this disaster. It marked the cessation of a growth era in Cypriot banking in Greece that had endured since 1991 devastating Cyprus as a financial center. Glass half full, there is one positive outcome. Greece can no longer be considered a systemic risk for Cyprus.

E. The Restructuring of the Bank of Cyprus

Bank closure on March 16, 2013 marked the beginning of the restructuring of the Cypriot banking sector. This included the closure and liquidation of *Laiki Bank*, the *Bank of Cyprus* restructuring, and the recapitalization and reconstruction of Cooperative Savings Bank. The liquidation of *Laiki Bank* began on March 25 of 2013. All state-guaranteed deposits of its customers up to €100,000 were transferred to *Bank of Cyprus* with few exceptions. All deposits in excess of €100,000 were included in the *Laiki Bank* liquidation process. Deposits of all public institutions in *Laiki Bank* were also transferred to *Bank of Cyprus*.[8] Also, all *Laiki Bank* loans and credit facilities were transferred to *Bank of Cyprus*.

A total of €4.5 billion in deposits were transferred to *Bank of Cyprus*. The *ELA* debt of €9.2 billion was transferred along with deposits. Assets with a market value of €14.5 billion as *ELA* security were also transferred to *Bank of Cyprus*. *Government Registered Development Stocks* (*GRDS*) of €1.889 billion were included. These subsequently recapitalized *Popular Bank* in June 2012. *Greek Government Bonds* (*GRRRB:IND*) were transferred to *Bank of Cyprus* discounted to 75% of par value. *Popular Bank* assets not transferred to *Bank of Cyprus* were included in a lengthy liquidation process concluded in September of 2017. Net proceeds were distributed to depositors proportioned by initial deposits. Net proceeds dwindled to €73 million after four and a half years of negotiations.

Bank of Cyprus capital needs increased after receiving *Laiki Bank* deposits. The recapitalization of *Bank of Cyprus* was achieved in August of 2013 by share conversion of €3.8 billion representing 47.5% of unsecured deposits.[9] Depositors received *Bank of Cyprus* shares in proportion to deposits lost. These preferred shares carried both voting

8. Institutional charitable, educational, credit, insurance, JCC Payment Systems, the Cyprus government, schools, municipalities, or community council deposits in excess of €100,000 were transferred.

9. Unsecured deposits over one hundred thousand euros.

rights and paid dividends. This was not a good deal for Cyprus ex-post. Depositors were further hammered in 2015 when the value of *Bank of Cyprus* preferred stock evaporated to about a quarter of the initial conversion value. The above method of recapitalizing the *Bank of Cyprus* has minimized any obligation on the part of the Republic of Cyprus to support the banking sector. However, the deposit 'haircut' of many small and medium-sized companies has created serious problems in employment and in the overall economic condition of Cyprus. Many of these companies were forced to cease operations due to a lack of operating cash flows. The *Central Bank of Cyprus* (CBC) flagged ongoing downgrades of the Republic of Cyprus and Cypriot banks by international credit rating agencies as reasons for the liquidation of *Laiki Bank*.

F. Bail-in

Bank rescue by the *Emergency Economic Stabilization Act* of 2008 and that of Bear Stearns (also in 2008) as well as the savings and loan (S&L) bailout of 1989 transferred tax revenue from the United States fiscal budget to Wall Street debt holders (Michaelides and Orphanides, 2015). European regulators responded with bail-in as part of a new *European Stability Mechanism* in 2012 that works in the opposite direction shifting bank default risk to unsecured depositors, bondholders and shareholders. Bail-in created a new order of bank recapitalization beginning with (a) shareholder equity, (b) bond-holder equity and (c) unsecured deposits. The *European Stability Mechanism* (ESM) can loan a stressed bank when bail-in is inadequate up to a 5% intervention cap. Bail-in shifts bankruptcy costs from taxpayers to bank lenders. French and German civil code politicians tout bail-in for strengthening market discipline. However, the smallest of the twenty-eight-member countries of the EU (all non-French and non-Germanic countries) worry that bail-in is toxic to banking sector confidence and economic growth because of the haircut imposed on unsecured Cypriot deposits.

We support the later assertion of bail-in toxicity with hard data in accord with Cyprus depository, shareholder, and bondholder survey results of Brown, Evangelou, and Stix (2017).[10] The Cyprus support

10. Survey data from 800 Cypriot households with term-deposit accounts of more than €5,000 reveal that Cyprus families suffering from the haircut are far more likely to reduce bank deposits in the future. Just one in five Cypriots reported willingness to hold deposits of any amount above any deposit insurance level in the twelve months following a crisis in

package included the first bail-in. This resulted in a 'haircut' of unsecured deposits with devastating impact on Cypriot bank confidence (Chenells and Wingfield, 2015). The scheme intended to make depositors whole by converting absconded unsecured deposits into equity banking shares. Bail-in has forced European savers to think like investors as was the case during the great depression. We consider this a dire step backward for the Cyprus economy. French and German policymakers representing larger populations proved ready-and-willing to hit the much smaller common-law population of Cyprus with experimental bail-in losses. Cypriots now prefer to sew any unsecured cash into a mattress or interlaced in home files rather than save into a Cyprus deposit account as a result of bail-in. Proletariat hording of cash extant in Cyprus today is consistent with Great Depression banking deposit run descriptions of Friedman and Schwartz (1963).

G. Post-Crisis Developments in the Banking Sector

This section presents banking sector post-crisis data for Cyprus. We analyze the financial position in non-performing loans by the big three Cypriot banks under *The Economic Adjustment Programme Memorandum of Understanding* (*MoU*). The memorandum was signed in March of 2013 between the European Commission representing Eurogroup, the Cypriot Government, the International Monetary Fund (IMF), and the European Central Bank (ECB). The three main objectives of the *Memorandum of Understanding* (*MoU*) financial support program were to (a) restore the health of the financial sector, (b) apply fiscal reorganization measures, and (c) implement structural reforms to enhance the competitive position of the Cypriot economy.

The *MoU* process assessed the needs and weaknesses of the banking sector prioritized by several established targets. This included the recapitalization and restructuring of credit institutions as well as the strengthening of the regulatory and supervisory framework of the banking system. One of the most positive developments in 2014 were favorable stress tests of the Cypriot banking sector by the European Central Bank and the European Banking Authority. Bank balance sheets were evaluated to identify weaknesses and capital shortfalls. Simulations determined whether, under normal or extreme scenarios additional capital needs will arise for banks over a three-year horizon.

March of 2013 sparked by the imposition of the bail-in.

The results show that banks in Cyprus are healing.

Bank of Cyprus achieved a capital increase (recapitalization) of a billion euros during 2014 by issuing new shares at 24¢ each. Among the shareholders were the European Bank for Reconstruction and Development (EBRD) and a wide range of institutional investors from Europe, North America and Russia. *Hellenic Bank* was recapitalized in this period using private funding. Finally, the Co-operative Central Bank was fully restructured by 2014 with €1.5 billion and by 2015 used an additional €175 million of loans through the *Memorandum of Understanding* (*MoU*). During this time, the banking supervisory and regulatory framework had been significantly strengthened. Further strengthening remains a top priority in order to avoid serious mistakes and omissions of the past. It is important that Cypriot bank managers continue to make steps towards conscientious governance rather than reversion to financial predation via excessive lending practices.

Just eight domestically licensed credit institutions remained with operations in Cyprus in the aftermath of the 2013 crisis. These included in order by 2016 asset values (1) *Bank of Cyprus*, (2) Cooperative Central Bank, (3) Russian Commercial Bank (RCB),[11] (4) *Hellenic Bank*, (5) Astrobank, (former Bank of Piraeus), (6) the Housing Finance Corporation (HFC), (7) Cyprus Development Bank or CDB, and (8) Ancoria Bank. In addition, subsidiaries of foreign credit institutions from the European Union (EU) were operating in Cyprus, such as Alpha Bank, the National Bank of Greece, and Eurobank as well as subsidiaries of foreign credit institutions from countries outside Greece such as Societe Generale Bank and USB Bank.

H. The Financial Position of the Cypriot Banks

The first section of table 6 presents total assets, deposits, equity, net profits and loan values of the three major Cypriot banks along with amounts, percentages and projected losses of non-performing loans for the period 2012-2017. The second section presents the same type of data for all Cypriot banks excluding the Russian Commercial Bank (RCB). Finally, the last section, shows the ratios of assets, deposits, loans, losses and profits of the banking sector to GDP in Cyprus.

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11. This presence is decreasing. Russian ambassador Osadchiy revealed on November 16th of 2018 that thousands of bank accounts have been closed belonging to Russians with an accompanying departure of Russian firms from Cyprus. This is due to a crackdown by the *Central Bank of Cyprus* (CBC).

Table 6 also presents statistics on consumer loans, housing loans and loans to small and medium-sized enterprises (SMEs). In 2017, these three loan categories accounted for 81.4% of the value of Cypriot bank loan portfolios (excluding RCB). Consumer loans accounted for 16.1%, housing loans for 30.9% and SME loans for 34.4% of lending activity. Non-performing consumer loans were 67.9% (= 3.968 / 5.841). non-performing housing loans were 46.1% (= 5.156 / 11.179) and non-performing SME loans were 67.4% (= 7.132 / 12.433). The percentage for projected losses from non-performing consumer loans was 50.7%, for housing 35.9% and for SME loans 51%. Around 50% of the value of non-performing consumer and SME loans has been wasted by banks. These do not include amounts written-off from bank balance sheets when losses became permanent.

The last lines of each section of table 6 show statistics on equity and annual amounts of new bank loans. Equity rose with bank recapitalizations from 4.7% to 14.9% of net loan portfolio (loans less forecasted losses) in 2017. Following the banking crisis of 2013, new loan grants rose from €1.791 billion or 4.1% of net loans to €3.900 billion or 10.2% of net loans in 2016. There was a slight decrease of €85 million by 2017, possibly due to new measures imposed on banks by regulators from inflow of new investment funds from abroad.

In 2012 and 2013, Cypriot banks lost €6.447 (= 2.489 + 3.958) billion. As discussed above, much of this loss is directly related to the acquisition of Cypriot banks in Greece by Piraeus Bank. Between 2014 and 2017, banks lost another €1.561 billion, mainly due to stricter criteria for calculating projected losses of non-performing loans. These losses eroded bank capital and increased capital requirements. In total, from 2012 to 2017, banks lost €8.009 billion equivalent to 41.7% (= €8.009 / €19.214) of GDP in 2017.

The first three sections of table 6 show that until 2015, non-performing loans as a percentage of *Bank of Cyprus*, Co-operative Central Bank and *Hellenic Bank* total loan values were nearly identical. This ratio was around 60% for all three banks in 2015. Subsequently, the *Bank of Cyprus* and, to a lesser extent, *Hellenic Bank*'s percentages declined mainly due to loan restructuring, write-offs and loans sold in 2016 and 2017. *Bank of Cyprus* loan write-offs amounted to €1.216 billion whereas those of *Hellenic Bank* amounted to €297 million. *Hellenic Bank* sold non-performing loans of a nominal value of €150 million to investment funds in 2017.

The percentages of non-performing loans of *Bank of Cyprus*,

TABLE 6. Major Cypriot Banks After the Crisis

1. Bank of Cyprus

Year	2012	2013	2014	2015	2016	2017
Assets	31,032	30,349	26,789	23,271	22,172	23,599
Deposits	28,442	14,971	12,624	14,181	16,510	17,850
Equity	258	2,656	3,465	3,055	3,106	2,617
Profits	–2,099	–2,036	–252	–387	14	–488
Loans	28,051	26,743	23,772	22,592	20,130	18,755
Losses provision	3,676	4,979	5,054	5,401	4,481	4,152
% Loans	13.1%	18.6%	21.3%	23.9%	22.3%	22.1%
Non-performing	13,211	14,042	14,961	13,968	11,034	8,804
% Loans	47.1%	52.5%	62.9%	61.8%	54.8%	46.9%
Losses provision	3,356	4,546	4,798	5,205	4,320	3,989
% Non-performing	25.4%	32.4%	32.1%	37.3%	39.1%	45.3%
Consumer Loans	3,455	2,194	1,352	1,110	1,062	1,000
% Loans	12.3%	8.2%	5.7%	4.9%	5.3%	5.3%
Non-performing	1,253	1,195	741	637	590	504
% Consumer loans	36.3%	54.5%	54.8%	57.4%	55.5%	50.4%
Loss provision	–	–	385	298	283	267
% Non-performing	–	–	52.0%	46.8%	48.0%	52.9%
Housing Loans	5,507	5,838	4,885	5,566	5,413	5,254
% Loans	19.6%	21.8%	20.6%	24.6%	26.9%	28.0%
Non-performing	2,001	1,908	2,261	2,879	2,602	2,294
% Housing loans	36.3%	32.7%	46.3%	51.7%	48.1%	43.7%

(*Continued*)

TABLE 6. (Continued)

1. Bank of Cyprus						
Year	2012	2013	2014	2015	2016	2017
Loss provision	–	–	314	553	552	685
% Non-performing	–	–	13.9%	19.2%	21.2%	29.8%
SME Loans	5,938	6,922	7,906	7,595	9,398	8,695
% Loans	21.2%	25.9%	33.3%	33.6%	46.7%	46.4%
Non-performing	4,800	5,000	5,219	5,361	6,117	4,844
% SME loans	80.8%	72.2%	66.0%	70.6%	65.1%	55.7%
Loss provision	–	–	1,774	2,365	2,565	2,379
% Non-performing	–	–	34.0%	44.1%	41.9%	49.1%
Net Loans	24,375	21,764	18,718	17,192	15,649	14,602
New Loans	1,500	1,582	1,363	1,967	2,613	2,380
% Net Loans	5.3%	5.9%	5.7%	8.7%	13.0%	12.7%
Equity / Net loans	1.1%	12.2%	18.5%	17.8%	19.8%	17.9%
2. Cooperative Bank of Cyprus						
Assets	17,170	13,709	13,937	14,253	14,111	13,451
Deposits	15,200	13,477	12,393	12,744	12,568	11,971
Equity	1,424	–293	1,254	125	1,226	1,178
Profits	–17	–1,698	41	–176	7	–63
Loans	13,914	13,360	13,095	12,707	12,034	11,938
Loss provision	674	2,586	2,968	3,449	3,272	3,381
% Loans	4.8%	19.4%	22.7%	27.1%	27.2%	28.3%

(*Continued*)

TABLE 6. (Continued)

2. Cooperative Bank of Cyprus

Year	2012	2013	2014	2015	2016	2017
Non-performing	6,390	6,136	7,515	7,564	7,217	7,179
% Loan	45.9%	45.9%	57.4%	59.5%	60.0%	60.1%
Loss provision	518	1,989	2,611	3,340	3,149	3,317
% Non-performing	8.1%	32.4%	34.7%	44.2%	43.6%	46.2%
Consumer Loans	5,486	5,268	5,245	5,034	4,551	4,500
% Loans	39.4%	39.4%	40.1%	39.6%	37.8%	37.7%
Non-performing	3,058	2,936	3,401	3,563	3,268	3,256
% Consumer	55.7%	55.7%	64.8%	70.8%	71.8%	72.4%
Loss provision	–	–	1,298	1,684	1,497	1,580
% Non-performing	–	–	38.2%	47.3%	45.8%	48.5%
Housing Loans	5,394	5,179	4,612	4,614	4,547	4,520
% Loans	38.8%	38.8%	35.2%	36.3%	37.8%	37.9%
Non-performing	2,126	2,041	2,207	2,310	2,303	2,300
% Housing loans	39.4%	39.4%	47.8%	50.1%	50.7%	50.9%
Loss provision	–	–	684	885	909	952
% Non-performing	–	–	31.0%	38.3%	39.4%	41.4%
SME Loans	2,664	2,558	1,924	1,080	921	932
% Loans	19.1%	19.1%	14.7%	8.5%	7.7%	7.8%
Non-performing	1,914	1,838	1,261	699	605	615
% SME loans	71.8%	71.8%	65.5%	64.7%	65.7%	66.0%

(*Continued*)

TABLE 6. (Continued)

2. Cooperative Bank of Cyprus						
Year	2012	2013	2014	2015	2016	2017
Loss provision	–	–	507	594	292	306
% Non-performing	–	–	40.2%	84.9%	48.3%	49.8%
Net Loans	13,240	10,774	10,127	9,257	8,762	8,557
New Loans	259	249	244	670	916	826
% Net loans	1.9%	1.9%	1.9%	5.3%	7.6%	6.9%
Equity / Net loans	10.8%	–2.7%	12.4%	1.3%	14.0%	13.8%
3. Hellenic Bank						
Assets	8,756	6,384	7,552	7,397	7,038	6,847
Deposits	7,767	5,513	6,346	6,139	6,111	5,808
Equity	485	399	594	566	643	562
Profits	–22	–190	–118	8	–63	–10
Loans	5,557	4,390	4,405	4,396	4,300	4,050
Loss provision	812	826	1,184	1,303	1,374	1,288
% Loans	14.6%	18.8%	26.9%	29.6%	32.0%	31.8%
Non-performing	1,230	2,007	2,494	2,602	2,504	2,162
% Loan	22.1%	45.7%	56.6%	59.2%	58.2%	53.4%
Loss Provision	417	770	1,134	1,270	1,347	1,272
% Non-performing	33.9%	38.4%	45.5%	48.8%	53.8%	58.8%
Consumer Loans	612	484	179	248	247	251
% Loans	11.0%	11.0%	4.1%	5.6%	5.7%	6.2%

(*Continued*)

TABLE 6. (Continued)

3. Hellenic Bank

Year	2012	2013	2014	2015	2016	2017
Non-performing	–	237	95	143	145	149
% Consumer loans	–	49.0%	53.1%	57.7%	58.7%	59.4%
Loss provision	–	–	66	104	112	120
% Non-performing	–	–	69.2%	72.7%	77.2%	80.5%
Housing Loans	1,843	1,456	629	656	619	590
% Loans	33.2%	33.2%	14.3%	14.9%	14.4%	14.6%
Non-performing	200	234	261	282	236	184
% Housing loans	10.9%	16.1%	41.5%	43.0%	38.1%	31.2%
Loss provision	–	–	96	113	100	84
% Non-performing	–	–	36.7%	40.1%	42.4%	45.7%
SME Loans	3,323	2,625	2,634	2,737	2,675	2,414
% Loans	59.8%	59.8%	59.8%	62.3%	62.2%	59.6%
Non-performing	–	–	1,696	1,758	1,705	1,416
% SME loans	–	–	64.4%	64.2%	63.7%	58.7%
Loss provision	–	–	712	830	891	819
% Non-performing	–	–	42.0%	47.2%	52.3%	57.8%
Net Loans	4,745	3,564	3,221	3,093	2,926	2,762
New Loans	200	232	112	281	292	358
% Net loans	3.6%	5.3%	2.5%	6.4%	6.8%	8.8%
Equity / Net Loans	10.2%	11.2%	18.5%	18.3%	22.0%	20.3%

(*Continued*)

TABLE 6. (Continued)

4. All Cypriot Bank Excluding RCB

Year	2012	2013	2014	2015	2016	2017
Assets	90,431	53,120	51,151	47,536	46,131	46,236
Deposits	71,930	36,264	33,896	35,378	37,660	37,677
Equity	3,407	2,999	6,412	4,847	5,251	4,594
Profits	–2,489	–3,958	–360	–585	–59	–557
Loans	75,617	46,601	43,296	41,634	38,279	36,181
Loss provision	8,444	8,547	9,429	10,420	9,483	9,131
% Loans	11.2%	18.3%	21.8%	25.0%	24.8%	25.2%
Non-performing	30,964	22,869	25,833	25,018	21,679	18,854
% Loans	40.9%	49.1%	59.7%	60.1%	56.6%	52.1%
Loan provision	4,347	7,430	8,760	10,074	9,165	8,880
% Non-performing	14.0%	32.5%	33.9%	40.3%	42.3%	47.1%
Consumer Loans	9,628	8,042	6,873	6,476	5,970	5,841
% Loans	12.7%	17.3%	15.9%	15.6%	15.6%	16.1%
Non-performing	4,340	4,404	4,274	4,386	4,076	3,968
% Consumer loans	45.1%	54.8%	62.2%	67.7%	68.3%	67.9%
Loss provision	–	–	1,768	2,109	1,939	2,012
% Non-performing	–	–	41.4%	48.1%	47.6%	50.7%
Housing Loans	12,875	12,602	11,049	11,714	11,416	11,179
% Loans	17.0%	27.0%	25.5%	28.1%	29.8%	30.9%
Non-performing	4,366	4,480	5,091	5,843	5,524	5,156
% Housing loans	33.9%	35.6%	46.1%	49.9%	48.4%	46.1%

(*Continued*)

TABLE 6. (Continued)

4. All Cypriot Bank Excluding RCB						
Year	2012	2013	2014	2015	2016	2017
Loss provision	–	–	1,146	1,639	1,669	1,848
% Non-performing	–	–	22.5%	28.0%	30.2%	35.9%
SME Loans	12,479	12,645	13,000	11,908	13,474	12,433
% Loans	16.5%	27.1%	30.0%	28.6%	35.2%	34.4%
Non-performing	6,714	6,838	8,434	8,061	8,512	7,132
% SME loans	53.8%	54.1%	64.9%	67.7%	63.2%	57.4%
Loss provision	–	–	3,069	3,871	3,757	3,634
% Non-performing	–	–	36.4%	48.0%	44.1%	51.0%
Net Loans	67,173	38,053	33,867	31,214	28,796	27,050
New Loans	2,051	2,163	1,791	2,969	3,900	3,715
% Net loans	2.7%	4.6%	4.1%	7.1%	10.2%	10.3%
Equity / Net Loans	5.1%	7.9%	18.9%	15.5%	18.2%	17.0%
5. Figures to Gross Domestic Product (GDP)						
GDP	19,490	18,141	17,606	17,742	18,219	19,214
Assets / GDP	4.6	2.9	2.9	2.7	2.5	2.4
Deposits / GDP	3.7	2.0	1.9	2.0	2.1	2.0
Loans / GDP	3.9	2.6	2.5	2.3	2.1	1.9
Net Loans / GDP	3.4	2.1	1.9	1.8	1.6	1.4
Non-performing loans / GDP	1.6	1.3	1.5	1.4	1.2	1.0
Loss Provision / GDP	22.3%	41.0%	49.8%	56.8%	50.3%	46.2%
Profit / GDP	–12.8%	–21.8%	–2.0%	–3.3%	–0.3%	–2.9%

(*Continued*)

TABLE 6. (Continued)

Note: Assets: cash, deposits with Central Bank of Cyprus and other bank loans, financial investments, real estate, plant and equipment. Deposits: both current and time deposits are a debt obligation. Equity: own share capital. Profit: negative sign means losses. Loans: nominal value of loans and other advances to customers. Non-performing loans (NPL) have at least one of the following characteristics: (a) delay in servicing beyond 90 days; (b) the utilization of collateral was deemed necessary for repayment; (c) legal proceedings against borrowers have begun; (d) reviewed twice over a two-year period, or reviewed anytime during a two-year probation period, or experienced delays in servicing beyond 30 days. % Non-performing loans (NPLs): percentage of NPLs in total loan portfolio. Loss provisions: expected impairment in the value of loans commiserate with credit risk. Net loans: nominal loan value less loss provisions. SMEs: Small and medium-sized enterprises. Data is from annual bank financial statements. Cyprus Cooperative Bank (CCB) figures for 2017 are based on financial statements for the first nine months of the year. Data excluded for parsimony are assets of Astrobank formerly of Piraeus Bank amounting to €1.244 billion, the Housing Finance Corporation amounting to €995 million, Cyprus Development Bank amounting to €538 million, and Ancoria Bank amounting to €100 million. Data for Russian Commercial Bank (RCB), amounting to €9.154 billion was not included due to incompatible characteristics. End of table totals are composed of individual bank holdings. Totals for 2012 include Popular Bank assets, deposits and net loss of €30.376, €17.865 and (-€1.674) billion respectively as found in third quarter 2012 financial statements.

Cooperative Bank and *Hellenic Bank* are (a) Consumer loans 50.4%, 72.4% and 59.4%, (b) mortgage loans 43.7%, 50.9% and 31.2% and (c) SME loans 55.7%, 66% and 58.7%. The corresponding projected non-performing loan losses are for: (a) consumer loans 52.9%, 48.5% and 80%, (b) mortgage loans 29.8%, 41.4% and 45.7% and (c) SME loans 49.1%, 49.8% and 57.8%. In proportion: (a) Cooperative Central Bank has a higher percentage of non-performing consumer loans, (b) Hellenic has the largest provisions for losses on consumer loans, and (c) *Bank of Cyprus* has lower losses on mortgage loans. By January 2017, *Bank of Cyprus* had succeeded in repaying the *ELA* inherited from *Popular Bank* back in March 2013. Nevertheless, Cypriot banks continue to face serious challenges with non-performing loans and concomitant losses.

V. Post-*MoU* Banking Crisis: Cyprus Cooperative Bank

Cooperative Central Bank was renamed Cyprus Cooperative Bank (CCB) in 2017 in merger of several cooperative credit institutions. Following its government bail-in of 2013, the Republic of Cyprus became the major shareholder holder of 77.34% of CCB shares. The Recapitalization Fund and the Cooperative Holding Company held 21.88% and 0.78% of its shares respectively. The CCB assumed control of all cooperative credit institutions and subsidiaries around the same time (see table 7).

The CCB was supervised by the *Central Bank of Cyprus* and the European Central Bank. The CCB had the largest network of branches and ATMs in Cyprus and was the leading bank by market share in local deposits. Business operations were conducted in Cyprus. Table 6 shows that the assets, deposits and loan portfolio of CCB were €13.451, €11.971 and €11.938 billion respectively by the end of 2017. Equity to net loans (loans less loss provisions) stood at 13.8%.

Below, we next provide an overview of economic events that caused the partial sale of CCB assets to *Hellenic Bank* and the consequences for the Republic of Cyprus and the banking sector in general.

A. Cyprus Cooperative Bank Dissolution and Hellenic Bank Absorption

From table 6, it follows that over the period 2013–17, CCB relative to *Hellenic Bank* had approximately: (a) twice as many assets, (b) three

TABLE 7. Credit Institutions and Commercial Companies which had their financial statements consolidated with those of the Cooperative Central Bank of Cyprus

1	Troodos Cooperative Credit Society Ltd
2	Paphos Cooperative Savings Society Ltd
3	Limassol Cooperative Savings Society Ltd
4	Strovolos Cooperative Credit Society Ltd
5	Famagusta – Larnaca Cooperative Savings Society Ltd
6	Nicosia Cooperative Savings Society Ltd
7	Telecommunications Energy and Banks Employees Cooperative Savings Society Ltd
8	LEDRA Cooperative Credit Society Ltd
9	Allileggyis Cooperative Credit Society Ltd
10	Lakatamia – Dheftera Cooperative Credit Society Ltd
11	Makrasyka – Larnaca – District of Famagusta Cooperative Credit Society Ltd
12	Cyprus Educational Cooperative Savings Society Ltd
13	Cyprus Police and Military Cooperative Savings Society Ltd
14	Kokkinochoria Cooperative Credit Society Ltd
15	Limassol Cooperative Savings Society Ltd
16	Periferiaki Nicosia Cooperative Society Ltd
17	Tamassos – Orinis and Pistsilias Cooperative Credit Society Ltd
18	Cyprus Civil Servants Cooperative Building and Savings Society Ltd
19	Pancyprian Cooperative Confederation Ltd
20	SEM Ltd
21	New SEBEGEP Ltd
22	SOPAZ Ltd
23	PEAL Troodos Ltd and Newfields Ltd
24	Comarine Ltd
25	Cooperative Federation of Carob Supply of Limassol Ltd
26	Cooperative Federation of Carob Supply of Larnaca Ltd
27	Cooperative Federation of Carob Supply of Pafos Ltd
28	Cooperative Federation of Carob Supply Ltd
29	SYNERGKAZ Ltd

Source: Cooperative Central Bank, Report και Consolidated Financial Statements, 2013, page. 60.

times the loan portfolio, (c) twice the deposits, (d) the same percentages of non-performing loans and (e) lower loss provisions. Therefore, one could argue that the financial condition of the two banks was similar. Nevertheless, there was a big difference in loan portfolios. CCB's lending activities consisted of about 75% consumer and mortgage loans while that for Hellenic was just 20%.

The Cypriot legal system makes it extremely difficult to recover money lent to delinquent borrowers. Foreclosures are costly and

time-consuming. Recovery is almost impossible when the primary residence of the borrower is collateral for a loan. Malfeasant Cypriot bankers willingly accepted defective loan security. The Single Supervisory Mechanism (SSM) staffed by European Central Bank (ECB) and EU national regulators have lamented that loss provisions should have been much greater. Should the SSM increase loss provisions of Cypriot banks competitiveness would drop.

The CCB's €11.417 billion loan portfolio included consumer and mortgage loans of €9.021 billion. Some €5.556 billion or 61.6% of these loans were non-performing by the end of 2017. The CCB loss provision was set to €2.532 billion or 45.6% of the portfolio's value. In January 2018, the SSM demanded that the CCB increase its loan provision by €812 million. The CCB ignored the request since this increase would have wiped out bank equity.

B. CCB Deposit Withdrawals

Commercial and household savers in perceiving signs of bank stress withdrew €541 million in deposits from the CCB from August to December 2017 in panic. Political debate regarding the poor financial condition of CCB during Cypriot presidential debates in the first three months of the 2018 election popularized bank stress by televised debate resulting in outflow of €1.619 billion of deposits. A total of €2.160 billion of deposits were withdrawn within nine months from CCB.

The government of Cyprus remediated by depositing €150 million into CCB on April 3, 2018. Cyprus Cooperative Bank (CCB) used these funds to pay for underwriting costs of a private placement of nine government bonds totaling €2.350 billion. Sale proceeds were deposited into the CCB. Deposit outflow stopped.

C. Partial Acquisition of CCB by Hellenic Bank

On July 7, 2018, the Cypriot Parliament ratified the partial acquisition of CCB by agreement with *Hellenic Bank*. Hellenic acquired assets of €9.979 billion in net market value (see table 8). Hellenic pledged in exchange to (a) pay CCB €74 million in cash, (b) absorb €9.732 billion of new deposits (c) employ up to 1,100 of its employees and (d) utilize up to 75 of its branches.

Six days later, on July 13, 2018, the Republic of Cyprus issued Government Bonds at multiple maturities of €3.19 billion to (a) replace

TABLE 8. Partial Redemption Agreement of the Cooperative Bank (mil. euros)

Cash	1,615	Deposits	9,666
Loans	4,593	Other liabilities	66
Government Bonds	4,080	Total Liabilities	9,732
Other Assets	27	Net Position (9,979–9,732=)	247
Less Losses Provisions	336	Payment to Cooperative Bank	74
Assets	9,979	Non-performing Loans	537

Note: The nominal and market value of the government bonds to be transferred to Hellenic Bank are 4,007 and 4,080 million euros, respectively. Non-performing loans amount to 537 million euros or 11.4% of the nominal value of the loans. The loan loss provisions amount to 278 million euros (49 million for servicing loans and 229 million for non-performing loans). The provision for losses of the remaining Cooperative bank's assets under transfer is 58 (= 336 – 278) million euros.

€2.35 billion in bonds used in April 2018 to stop the outflow of CCB deposits and (b) finance €840 million in deposits not covered by the value of acquired assets.

An *Asset Protection Scheme* (*APS*) of the Republic of Cyprus guaranteed *Hellenic Bank* against extreme losses from €2.6 billion in bad loans. The long run cost of the *APS* inferred from the reporting of the Minister of Finance to the Cyprus Parliament in guaranteed indemnities less premium paid by Hellenic is €90 (= €155 – €65) million. The assets, loan portfolio and deposits of *Hellenic Bank* increased by about two and a half times with the completion of the partial acquisition of CCB (see table 9). *Hellenic Bank* thus became the second largest bank in Cyprus. The percentage of NPLs decreased from 55.3% (= 2.241 / 4.055) to 25.9% (= 2.241 / 8.648). Cyprus Cooperative Bank (CCB) non-performing loans were not added to the NPL balance of *Hellenic Bank* because of government guarantees and indemnities. The *APS* agreement significantly enhanced the financial viability of *Hellenic Bank* and thus indirectly contributed to the stabilization of a large part of the Cypriot banking sector.

D. Consequences for Public Debt

According to table 10, the consequences of the CCB sale of Cyprus public debt resulted in: (a) an increase from €18.316 billion at 2017 year-end to €21.277 billion or from 95.3% to 110.7% (= €21.277 / €19.214) of GDP in 2017, (b) a reduction in average debt duration from 9.2 to 8.1 years and (c) an increase in average interest burden from

TABLE 9. Financial Position of Hellenic Bank Before and After Redemption (mil. euros)

	Before	After		Before	After
Property and Equipment	159	159	Equity	529	852
Cash & Other assets	2,929	4,655	Deposits	5,785	15,451
Loans less Provisions	2,773	7,088	Other Liabilities	407	539
Government Bonds	860	4,940	Total Liabilities	6,192	15,990
Assets	6,721	16,842	Equity	529	852

Note: The nominal Hellenic Bank loan portfolio value, its provision for losses and non-performing loans at the end of 2017 are €4.055, €1.282 and €2.241 billion. Hellenic Bank portfolio increases by €8.648 (= 4.055 + 4.593) billion after integrating Cyprus Cooperative Bank loans. Loss provisions grow to €1.560 (1.282 + 278) billion after redemption.

1.93% to 2.04%. The reduction in the average duration is equivalent to an increase in annual debt servicing of €300 million. The average increase in the interest burden is 0.11%. This is equivalent to an increase in annual interest of €23.4 (= €21.277 × 0.11%) million.

The *Central Bank of Cyprus* predicted economic growth rates for the years 2018 and 2019 of 3.4% and 3.2% respectively. By the end of 2018 and 2019, public debt could fall to 107.1% (= €21.277 / (€19.214 × 1.034) and 103.8% (= 21.277 / (19.214 × 1.034 × 1.032) of GDP at these growth rates. The expected increase in government revenue eases repayment. However, in the case of low or negative growth rates, the repayment of debt would be more difficult. It is deeply disturbing for small European central bankers that rating agencies deem the unilateral actions of EU regulatory directors in the Cyprus Cooperative Bank debacle positively.

E. Converting CCB into an Investment Fund

Between 2014 and 2018, the Republic of Cyprus recapitalized CCB with €5.015 billion. This amount included: (a) €1.675 billion for recapitalization; (b) €2.5 billion to stop the outflow of deposits and (c) €840 million to finance the gap between liabilities and assets transferred to *Hellenic Bank*.

Table 10 shows that the Republic of Cyprus remained the owner of assets totaling €5.027 billion in market value roughly equal to the governmental total support given to the CCB. These assets include consumer and housing loans with a nominal value of €6.224 billion, of

TABLE 10. Cyprus Cooperative Bank Support and Assets Remaining

Cash	74	Recapitalization 2014	1,500
Property	628	Recapitalization 2015	175
Loans less Provisions for Losses	4,060	Cash injection, 3/4/2018	150
Other Assets	265	Issue of Bonds, 13/7/2018	3,190
Total Assets	5,027	Total Support	5,015

Note: Calculations are based on financial statements of Cyprus Cooperative Bank (CCB) for the first nine months of 2017. Loans remaining with CCB have loss provisions of €6.824 and €2.764 billion. These include a loan to the Republic of Cyprus from the former Cooperative Central Bank (CCB) of €347 million. An amount of €6.179 billion (90.5% of the value of the loans) represents non-performing loans. The 13/7/2018 bond issue was made (a) to replace bonds of a nominal value of €2.350 billion issued to support CCB deposits on 3/4/2018, and (b) to finance €840 billion of additional CCB deposits. This was not covered by transfer of assets to Hellenic Bank.

which €6.179 billion were non-performing. Residual net value, after considering provisions for losses, was €4.060 billion. The remainder of CCB was transformed into an investment fund managed by the private company Altamira.

Premiums payable by *Hellenic Bank* to the government for state guarantees and for proceeds from managing fund assets will be used for repayment of public debt and for other public needs. The Republic of Cyprus cost of CCB support will be a function of: (a) the legislative framework governing non-performing loans; (b) the time and cost of litigation of cases regarding non-performing loans and (c) the effective management of assets in the investment fund. If the legal framework and judicial procedures for handling non-performing loans remain unchanged, losses may exceed €2.5 billion. This amount does not include any potential losses suffered by other Cypriot banks, or an estimate of the negative impact on the Cypriot banking sector.

F. Case Summary, Views and Conclusions

Assets, deposits and loan portfolio values of *Hellenic Bank* increased by about two and a half times due to the partial acquisition of CCB. The absorption of CCB's 'good' loans resulted in an improvement of *Hellenic Bank*'s non-performing to performing loan ratio from 55.3% to 25.9%. *Hellenic Bank* became the second largest bank in Cyprus. Its clientele includes almost half of all Cypriot households. Almost all sectors of the economy recovered during 2016-2018. Unemployment

declined to a low level and Gross Domestic Product (GDP) nearly maxed out before the financial crisis of 2013. The latter had little or no effect on the ratio of non-performing loans because of the direct relation with agency problems in Cyprus banking management. Reprimanding bad corporate banking governance by shaving customer deposits negatively impacted borrowers who in expecting a haircut from EU regulators deliberately stopped servicing loans.

The CCB disaster cost the Cyprus government €5.015 billion. The bank acquired equivalent assets. This will turn into a loss for the government depending on the degree of mismanagement of assets retained by Cyprus Cooperative Bank (CCB) and of the associated investment fund. Another equally important factor is the fight against misfeasant (lazy, improperly trained, or stupid) and malfeasant (thieving or corrupt) banking agents who can drive the Cyprus economy to destruction consistent with agency theory. Misfeasant banking managers exist in all economic layers of the Cypriot society justifying better regulation. Overregulation (extreme regulation) however, is to be avoided as it destabilizes the Cyprus economy and damages the standard of living of all Cypriot citizens. Unrepaid deposits belong to pensioners, self-employed individuals, and small and medium-sized enterprises.

None of these innocent counterparties to banking operations should be expected to bear the cost of non-performing loans granted by bad (mis and/or malfeasant) bank managers. Ultimately bad banking management should foot the bill. Risk should be better borne by central banks. The Cypriot Parliament recently legislated to address severe agency problems that became apparent in the Cyprus banking crisis. Other supplementary law-plans will follow in the future. It is important that political parties represented in the Cyprus Parliament continue to address banking agency hazards responsibly. This entails focusing on public-interest rather than on requests of self-interested public choice influencing political-economic agents in the banking sector.

VI. The Structure of Cyprus Government Debt

The total debt of the Republic of Cyprus amounted to €18.316 billion with an average duration of 9.2 years at an annual interest rate of 1.93% as of the 31st of December of 2017 (see table 11). Figures for 2016 were €18.641 billion, 10.4 years and 2.13%. For 2015 the corresponding figures were €18.998 billion, 10.9 years and 2.78%. For comparison

TABLE 11. Public Debt of the Republic of Cyprus (12/31/2017)

Type of Debt	Nominal Value	Percent, Debt	Average Duration	Mean Yield
1. Internal Public Debt	2,943	16.1%	7.1	3.03%
Treasury bills	200	1.1%	0.1	–0.09%
GRDS	1,260	6.9%	3.9	3.89%
Bills for physical persons	625	3.4%	5.5	3.29%
Internal Loans	858	4.7%	14.5	2.28%
2. External Public Debt	15,373	83.9%	9.6	1.72%
EMTN – European Mid-term Notes	4,507	24.6%	5.4	3.83%
External Loans	10,866	59,3%	11.4	0.85%
3. Total Public Debt	18,316	100,0%	9,2	1,93%
Total public debt 31/12/2016	18,641		10.4	2.13%
Total public debt 31/12/2015	18,998		10.9	2.78%
Foreign Debt - Total	10,866	100.0%	11.4	0.85%
International Monetary Fund (3)	676	6.2%	8.5	1.05%
European Investment Bank	924	8.5%	18.0	0.81%
EFSF - European Financial Stability Facility	229	2,1%	22.5	1.46%
ESM - European Stability Mechanism	6,300	58.0%	13.5	0.15%
Russian Government	2,500	23.0%	3.5	2.50%
Council of Europe Development Bank	237	2.2%	9.5	0.82%

Note: The first column provides nominal loan and bond values. The first section of the second column shows percentages of various types of loans relative to total debt while the second section is relative to total foreign debt. The third column shows average duration and the last column shows average yield (financing cost). The average duration and average yield of various types of loans are value-weighted based on nominal value. All nominal values are expressed in millions of euros. Data is from the Public Debt Management Office of the Ministry of Finance of Cyprus.

purposes, a few months before Cyprus adopted the *Memorandum of Understanding* (*MoU*) in 2012, the average duration and average interest rate of government debt was 5.6 years and 4.1% respectively.

Domestic debt amounts to €2.943 billion or 6.1% of total government borrowing. This included *European Medium-Term Notes* (*EMTN*) and *Government Registered Development Stocks* (*GRDS*) amounting to €1.460 billion, savings bonds amounting to €625 million obtained from the *Central Bank of Cyprus*, and *Central Cooperative Bank* loans amounting to €858 million. The average duration of domestic debt is 7.1 years and the average annual interest rate is 3.03%. The external debt amounts to €15.373 billion or 83.9% of total government debt. *MoU* loans are in *European Medium-Term Notes*

(*EMTN*). The average duration and annual interest rate of the external debt of Cyprus are 9.6 years and 1.72%.

Cyprus external debt thus consists of *EMTN* notes with a total nominal value of €4.507 billion, average duration of 5.4 years and average cost of borrowing of 3.83% along with loans from: (a) the *European Stability Mechanism* amounting to €6.300 billion with an average duration of 13.5 years at a variable interest rate of 0.15%, (b) Russian government debt of €2.5 billion with 3.5 years of duration at a fixed rate of 2.5%, (c) International Monetary Fund debt amounting to €676 million with a duration of 8.5 years and a variable rate of 1.05% and, (d) European Investment Bank debt amounting to €924 million with a duration of 18 years at an interest rate of 0.81%, as well as two smaller loans of negligible value. Apart from the *EMTN* bonds and the loan from the Russian government of €7.007 billion (€4.507 + €2.500), the interest rates of the remainder (i.e., mostly the Memorandum loans) amounting to €8.336 (€5.373 – €7.007) fluctuate with Euribor. This is how the Cyprus economy has become highly sensitive to Euribor interest rates.

A. Cyprus Enters the Global Markets

The Republic of Cyprus first entered the capital markets on April 30, 2014 with the issuance of six-year *EMTN*s with a face value of €100 million issued at a rate of 6.5% (see table 12). These notes were sold through private placement at €99.397 for every €100 in nominal bond value with an investor yield to maturity (YTM) of 6.63%. A few days later, part of this issue with a nominal value of €20 million was sold across the London Stock Exchange (LSE) at €106 per bond. Investment profit was €1.32 million or 6.64% (= 106 / 99.397). The yield corresponding to the price of €106 is 5.31%. This transaction revealed market expectations concerning Republic of Cyprus borrowing rates.

The Republic of Cyprus issued €500 million in five-year, 4.75% coupon *EMTN*s across the London Stock Exchange (LSE) on June 25, 2014. A hundred and fifty investors were present at the auction. The value of bids exceeded €2 billion. Consequently, the issue was oversold by more than €1.5000 billion. The average selling price was €99.565 with a YTM of 4.85%. On October 6, 2014, the Republic of Cyprus issued €40 million of 13-week European Commercial Paper (ECP) at a YTM of 3.51%. The yield to maturity of both loans reflects a borrowing rate of the Republic of Cyprus that was below 5% in the international

capital markets at the time. The Republic of Cyprus issued several government bonds from December 2015 to July 2017 with durations ranging from 30-days to 13-weeks. Treasury bills and *Government Registered Development Stocks* (*GRDS*) issued in the Cypriot market are governed by Cyprus law. Table 12 shows a downtrend in government borrowing rates. Short-term interest rates have declined from 3.11% at the beginning of 2015 to 0.63% by August 2016. Since February 2017, borrowing rates have turned negative.

From May 2015 through June 2017, €3.85 billion were placed in the London market of 3-year and 10-year *European Medium-Term Notes* (*EMTN*). Interest rates have gradually declined from 4% in May 2015 to 2.8% in June 2017. On April 3, 2018, the Republic sold through private placement nine *GRDS* with a total value of €2.350 billion to Cyprus Cooperative Bank (CCB). These bonds had a duration of 15 to 20 years at nominal interest rates between 2.45% and 3.05% carrying a face value repurchase right. Placement proceeds were deposited with CCB to counterbalance deposit outflows.

Stated rates on Cyprus Government Bonds in both domestic and European bond markets declined due to a general reduction of interest rates in the euro area and from improving economic conditions of Cyprus. Short and mid-range government bond stated rates at that time ranged from -0.6% to 0% on EU issues with credit ratings of AAA from countries such as Germany, the Netherlands and Finland. The positive spread of 280 basis points (2.8%) that Germanic and Scandinavian countries hold over Cyprus Government Bonds reflects the need for further improvements in the island economy.

B. Redemption of Government Debt

Eight *Central Bank of Cyprus Government Registered Development Stocks* (*GRDS*) of a total nominal value of €547.951 million had been redeemed by March, September and December of 2016 (see column 4 of table 13). These redemptions came from a gradual reduction of Cyprus government borrowing rates. Redemptions were made at above nominal values as YTM dipped below stated (face) repayment rates (European Central Bank, 2013). An example is a 10-year bond with a duration of 4.3 years, a face rate of 6% and a nominal value of €10.146 billion which was redeemed in March 2016 at a price of €114.02 for every €100 of nominal value. This bond in 0.3 years or 3.6 months,

TABLE 12. Course of Interest Rates in the After-Memorandum Period

1. Short-Term Notes			
European Commercial Paper (ECP) – External Debt			
6-Oct-14	40	13 weeks	3.51%
Government Notes – Internal Debt			
30 days			
18-May-15	50		1.88%
17-Jun-15	50		1.78%
14-Sep-15	50		1.45%
14-Oct-15	35		1.23%
13-Nov-15	50		0.83%
14-Dec-15	50		0.68%
13-Jan-16	50		0.33%
15-Mar-16	22		0.39%
13 weeks			
3-Feb-15	125		3.11%
6-Mar-15	200		2.93%
2-Apr-15	200		2.73%
8-May-15	150		2.52%
5-Jun-15	185		2.36%
8-Jul-15	144		2.29%
4-Sep-15	100		1.94%
6-Oct-15	100		1.33%
8-Oct-15	100		1.66%
4-Dec-15	100		0.86%
4-Jan-16	120		0.49%
2-Feb-16	120		0.62%
29-Feb-16	100		0.61%
8-Apr-16	100		0.79%
27-Apr-16	116		0.87%
30-May-16	131		0.90%
8-Jul-16	100		0.81%
5-Aug-16	120		0.63%
31-Oct-16	100		0.38%
28-Nov-16	100		0.024%
3-Jan-17	100		0.09%
30-Jan-17	100		0.001%
28-Feb-17	100		–0.031%
3-Apr-17	100		–0.043%
2-May-17	100		–0.02%
29-May-17	100		–0.03%
3-Jul-17	100		–0.035%

(*Continued*)

TABLE 12. (Continued)

1. Short-Term Notes			
Government Notes – Internal Debt			
13 weeks			
30-Jul-17	100		–0.07%
2-Oct-17	100		–0.06%
30-Oct-17	100		–0.07%
27-Nov-17	100		–0.1%
25-May-18	100		–0.26%
2. Long-Term Loans			
EMTN – External Debt			
2-May-14	100	6-yrs	6.67%
25-Jun-14	750	5-yrs	4.85%
6-May-15	1,000	7-yrs	4.00%
4-Nov-15	1,000	10-yrs	4.25%
26-Jul-16	1,000	7-yrs	3.80%
27-Jun-17	850	7-yrs	2.80%
GRDS – Internal Debt			
18-Dec-15	90	10-yrs	4.00%
18-Jan-16	75	2-yrs	1.86%
18-Jan-16	222	7-yrs	3.23%
3-Apr-18	500	15-yrs	2.45%
3-Apr-18	500	16-yrs	2.55%
3-Apr-18	500	17-yrs	2.65%
3-Apr-18	500	18-yrs	2.70%
3-Apr-18	350	20-yrs	3.05%

Note: EMTN: European Mid-term Notes. GRDS: Government Registered Development Stocks or KOXA. The data is based on the auction results published by the Public Debt Management Office. The values are in billions of euros.

would pay during the next four years €6 of interest (= 6% × 100) annually for every €100 of nominal value. The €14.02 premium (= €114.02–€100) reflects the extra amount that the bond will pay a rational investor in addition to the market yield. If a bond's yield at the time of its redemption is 2.84% or €2.84 for every €100 of nominal value, the €14.02 premium represents the value of €3.16 (= 6 – 2.84) paid on top of its yield during the next four years. The lower the yield, the higher the bond's premium. Overall, the redemption cost of the 10-year bond was as follows:

$$\text{Redemption cost} = \text{Redemption price} \times \text{Nominal value} \div 100$$

$$= 114.02 \times 10.146 \div 100 = €11.468 \text{ million.}$$

The total redemption cost of the eight bonds was €597.3 million or €49.364 million in excess of nominal values based on figures in columns 4 and 5 of table 13.

A question arises as to whether the redemption prices of these bonds are rational. The answer to this question is by no means easy for the simple reason that it requires knowledge of the yields of similar government bonds of the same duration, at the time of redemption. Table 13 shows that in 2016, the 2-year and 7-year *GRDS* were sold in the domestic market with yields of 1.86% and 3.23%, respectively. Also, in July 2016, a 7-year *EMTN* was sold across the LSE with a yield of 3.80%. These yields place limits on interest rates that should be used in the pricing of bonds that have been redeemed. When comparing two types of bonds, *Government Registered Development Stocks* (*GRDS*) have a higher level of investment risk and should therefore have higher yields than corresponding *European Medium-Term Notes* (*EMTN*). The reasons are obvious. If the *Central Bank of Cyprus* fails to repay a *GRDS*, the House of Representatives will not be able to interfere with repayment terms, as it did in March of 2013.[12] Any disputes with lenders (*EMTN* holders) are settled in English courts under covenant with decisions binding on the Republic of Cyprus. Also, interest received from *EMTN*s, unlike that received from *GRDS*, is not taxable.

The redemption rates of the eight *GRDS* should range between 2% to 3.5% based on reported yields of *GRDS* and *EMTN* issued in 2016. Rates should range between 2% and 2.5% at durations between three to four years; 2.5% and 3% for durations between two to three years; and 3% and 3.5% for bonds with a duration of over four years. Under no circumstances should redemption rates fall below the 1.86% yield of the 2-year duration *GRDS*. An extreme example is the acquisition of a 6-year *GRDS* of €300 million in nominal value with a duration of 2.54 years at a nominal interest rate of 4.5%. This bond was redeemed at €107.84 per €100 in nominal value. The redemption cost amounted to

12. The Republic of Cyprus parliament is embodied by a House of Representatives (GR: Βουλή των Αντιπροσώπων Voulī tōn Antiprosṓpōn, TUR: Temsilciler Meclisi). Every five years three respective Latin, Maronite and Arminian observers plus House Members are elected by proportion.

TABLE 13. GRDS Redemptions, March - September 2016

(1) GRDS	(2) Duration in (years)	(3) Face Nominal Rate	(4) Value (mil. euros)	(5) Redemption Price	(6) Bond Price (k = 3%)	(7) Extra Payment (mil. euros)
15-yrs	2.95	4.6%	0.127	104.87	103.214	0.002
7-yrs	4.3	4.75%	3.831	106.16	108.732	–0.099
10-yrs	4.3	6.0%	10.146	114.02	113.475	0.055
15-yrs	3.6	6.1%	74.282	112.66	110.062	1.93
15-yrs	3.73	5.35%	50.405	110.22	107.502	1.37
7-yrs	3.79	4.75%	35.236	108.01	105.604	0.848
8-yrs	4.79	5.0%	73.924	109.2	108.103	0.811
5-yrs	2.54	4.5%	300	107.84	104.278	10.685
Total			547.951			15.602

Face value of bonds (total) = 547.95 million euros.
Bond Redemption cost = 597.315 million euros.
Economic value of bonds based on a 3% yield = 581.713 million euros
Payments over the economic value of bonds = 15.602 million euros

Note: (1) Years to maturity at the time of bond issue. (2) Years to maturity at the time of bond redemption. (3) Annual coupon rate. (4) Face value of bonds in millions of euros. (5) Bond redemption price based on 100 euros face value. (6) Bond price based on a 3% yield. (7) Additional amounts paid over the value of the redemption bonds in millions of euros. Calculated from equation (Column 5 – Column 6) × (Column 4) / 100. The elements of columns 1 to 5 are based on the announcement of the Public Debt Management Office on February 7, 2017 entitled "The Debt Redemptions of the Republic of Cyprus in 2016"

TABLE 14. GRDS Yields at the Time of Their Redemption in 2016

(1)	(2) Month of Redemption	(3) Duration in years	(4) Nominal Rate	(5) Redemption Price	(6) GRDS Yields
15-yrs	March	2.95	4.6%	104.87	2.14%
7-yrs	March	4.3	4.75%	106.16	3.81%
10-yrs	March	4.3	6.0%	114.02	2.84%
15-yrs	September	3.6	6.1%	112.66	2.02%
15-yrs	September	3.73	5.35%	110.22	2.01%
7-yrs	September	3.79	4.75%	108.01	2.13%
8-yrs	September	4.79	5%	109.2	2.71%
6-yrs	December	2.54	4.5%	107.84	0.72%

Note: (1) The duration of the bond at the time of its issue. (2) Month in which the bond was redeemed in 2016. (3) Years to maturity at the time of the GRD's redemption. (4) Nominal interest rate of the bond. (5) Redemption price per 100 euros of face value. (6) Yield corresponding to the redemption price.

€323.52 (= €107.84 × €300 ÷ 100) million. If this bond had been priced based on a 2% yield it would have traded at €105.873, or €1.967 less.

The additional redemption price of €1.667 in the 6-year *GRDS* has cost the government a total of €5.901 (= €1.967 × €300 ÷ 100) million above fair value. If the bond had been priced based on a 2.5% yield it would have traded at €2.799 less at €105.041 and the redemption cost would have been €8.397 (2.799 × 300/100) billion. Based on a yield of 3%, the bond's price would have been €104.278 with an associated redemption cost of €312.835 (= €104.278 × €300 ÷100), i.e., by €10.685 million less. Additional total cost of the eight redemptions based on 2%, 2.5% and 3% yields are estimated at €3.397, €9.551 and €15.602 billion, respectively.

The last column of table 14 displays bond yields according to redemption prices. Redemption rates range from 0.72% (6-year bond of 2.54 years duration) to 3.81% (7-year bond of 4.3 years duration). In general, the higher the redemption price, the lower the redemption yield of a bond. A lower redemption yield means a higher redemption price imposes higher recovery rates for the government. For a bond redemption to be profitable, the redemption rate should be higher than the Cyprus government borrowing rate. For example, the redemption can be profitable if the yield is higher than 2.5% when the interest rate of three-year government bonds is 2.5%. In June 2017, the Republic of

Cyprus issued 7-year *European Medium-Term Notes* (*EMTN*) with a nominal value of €850 million to fund the redemption of €1.4 billion of government bonds. The investor YTM on these bonds was 2.8%. Most redemptions were not profitable for the government according to the data in table 14.

VII. Fiscal Consolidation Measures and Economic Growth

Fiscal targets such as the increase in the competitiveness of the market and the return to stability and economic growth require specific consolidation measures. These include reducing government expenditure, increasing economic competitiveness and the development of new positive net present value (NPV) economic activities in Cyprus. An important prerequisite to a healthy Cypriot economy is the resumption of saver confidence in the Cyprus banking system by individual citizens, atomistic shareholders, as well as among foreign sovereign, mutual and hedge fund managers.

A. Public Expenditure

Cyprus Republic budget deficits over the period 2009 - 2013 were from increased government expenditure. Priority should be given to reducing government expenditure with a low (or zero) Keynesian multiplier to remedy waste. Low multiplier expenditures hinder economic growth. The best example of a low Keynesian multiplier expenditure is welfare. Prior to this period, Cyprus had government budget surpluses (Ono, 2011).[13]

Social benefits grew at a rate of four times normal between 2006 and 2012 under an avalanche of Cyprus Government disbursements. Welfare expenditures increased significantly in 2016 compared with other government expenditures despite slight declines in years 2014 and 2015. Perversely, expenditures in social benefits increased despite rising employment in Cyprus over the same period. These expenditures must be reduced in the future. However, the reduction in social benefits should be balanced so that retired people with low income are not adversely affected and large families or other vulnerable groups of the

13. Also see Klaus Schubert, Paloma de Villota, Johanna Kuhlmann, (2016), Challenges to European Welfare Systems. p. 79.

population are not disadvantaged. In addition, the state should put great effort in stopping social welfare abuse and fraud.

As paradoxical as it may seem, attempts to reduce budget deficits in an open economy by imposing additional taxes lead to: 1) increased production costs, 2) reduced economic competitiveness, 3) lower economic activity, 4) weaker exports, 5) higher unemployment, 6) increased tax evasion, 7) reduced tax revenues, 8) and deeper government budget deficits.

Capital expenditures with high multiplier effects (and thus high positive impact on employment) should be increased. This includes useful works such as improved public transport. Eliminating taxes on businesses in Cyprus would also stimulate the economy. The economy would be stimulated by attracting new multi-national corporations (MNCs) to Cyprus. This in turn increases government taxation through payroll tax. Our arguments of what constitutes healthy Cyprus government tax policy are consistent with the opinions of Maynard Keynes and Arthur Laffer who argue that increasing income tax rates above a safe equilibrium level eventually leads to reduced government revenue.

B. Stimulation of Domestic Output

Stimulation of domestic output and employment is linked to increasing macroeconomic demand. Macro-demand in turn is directly related to household disposable income. Any additional wage or income cuts through direct or indirect taxation generally deepen recessions. Increased taxes have reduced Cyprus wage earner income in recent years to counterbalance pension, welfare and other spending. This in turn is a negative Keynesian multiplier political action that reduces the amounts of commodities and services consumed by households. Household disposable income could be significantly increased by lowering borrowing rates and prices for basic services such as electricity, telecommunications and water.

Modifying the Cyprus income tax code to account for the size of a household corrects the unfair current tax system that hammers large and/or single-salaried families. The basic reason is that the current system is based on individual taxation and does not consider the size of the family. In order to support such families, it is important to consider tax reform which considers the size of the family. In order to combat unemployment, incentives should be provided for the recruitment of

Cypriots. During a recessionary period, trade unions should be willing to make compromises and adjust their expectations upwards as the economy recovers. Direct and indirect costs of unemployment are more burdensome for employees than for employers.

C. Increasing Competitiveness in the Markets

In order to increase competitiveness in the Cypriot economy, the reduction of production costs, interest rates, electricity, telecommunications, water and sewage costs as well as the abolishment of various levies imposed on businesses, including a private property tax, is necessary. The reduction in borrowing rates can be obtained through a corresponding reduction in deposit rates under certain restrictions to avoid potential problems for Cyprus banks. Private sector investment incentivizes the government of Cyprus to abolish taxation of (1) reinvested company profits and (2) real estate. Both taxes adversely affect the competitiveness of tourism - a pillar of the Cyprus economy.

D. Sectors of Economic Development

Cyprus has modern universities and competent health professionals. Another way to boost economic development in the Republic of Cyprus is through universities which could become partly self-financed through the strengthening of academic tourism. An executive MBA program for instance, may be attractive to Scandinavian managers in the winter. This would allow the government to save significant funds that could be allocated to other vital developmental or social needs. Attracting academic tourists increases demand for house rentals and related services stimulating activities traditionally related to both tourism and the construction industry. The strategic location and favorable weather conditions of Cyprus offers potential for the isle as a center of medical tourism. Benefits of such a medical industry span employment, tourism and healthcare.

VIII. Summary and Conclusion

The Cypriot crisis emanated from huge fiscal deficits from increased welfare spending on declining 2009 to 2012 government revenues. The crisis spilled into the banking sector. The first major blow to the Cypriot

banking sector was given by the 'haircut' of *Greek Government Bonds* in November 2011. The second blow was the acquisition of Cypriot banks located in Greece by Piraeus Bank in March of 2013. The total damage to the Cypriot Banking sector is estimated at around eight billion euros. This is approximately as much as the Memorandum loan received by the Republic of Cyprus.

Cyprus bank losses from non-performing loans are due to corrupted bank lending practices and government resistance to reforms to increase the competitiveness of the economy - despite adverse global economic circumstances of the period. An important inference of the Cypriot banking crisis is the inability of island political and economic institutions to protect citizens from bank defaults from unscrupulous actions of a small number of bad bankers. The Cypriot economy is on the rise as fiscal figures improve (Hardouvelis and Gkionis, 2016). Economic activity is recovering, and public debt is stabilized. Repayment stabilization, interest rate reduction, and longer Cyprus government bond duration was obtained by redemptions initiated in 2016. Upgrades by credit rating agencies as well as the reduction of borrowing rates in international financial markets have followed. Nevertheless, some redemptions were losers for the Cyprus government.

This study offers an opportunity for planners in other countries to learn how to avoid the same trap that hammered Cyprus with bail-in. We offer readers a framework to study current country conditions and monitor ongoing policy developments. Leaders should be particularly wary of a large versus small country power imbalance within the EU parliament. Our research and data indicates that Cypriot banking industry analysts are best advised to be aware of (a) levels of Republic of Cyprus welfare spending where less is better, (b) positive advances in governance changes improving the monitoring and control of Cyprus bank managers, (c) any restrictions in the issuance of golden passports that would restrict foreign direct investment (FDI), (d) scrutiny of Russian economic interests in Cyprus by the United States, England, and the EU Committee that would further restrict FDI, and (e) progress in the ousting of mainland Turkey from Northern Cyprus - an ongoing act of war.

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