



HAL
open science

The reform of the tax system in Lebanon: an impossible equation?

Marie Dahdah Kareh

► **To cite this version:**

Marie Dahdah Kareh. The reform of the tax system in Lebanon: an impossible equation?. Economics and Finance. Université Panthéon-Sorbonne - Paris I, 2020. English. NNT: 2020PA01E054. tel-03105909

HAL Id: tel-03105909

<https://theses.hal.science/tel-03105909>

Submitted on 11 Jan 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Doctoral Thesis
Of Paris 1 Pantheon-Sorbonne University,

Prepared at the Sorbonne Center for Economics

Doctoral School of Economics ED N° 465

Doctorate specialty: Economics

by **Marie Dahdah Kareh**

**The Reform of the Tax System in Lebanon:
An impossible equation?**

Thesis Presented and defended in Paris, November 23th, 2020

Jury's composition:

Marc-Arthur DIAYE (Thesis Advisor) Professor, Paris 1 Pantheon-Sorbonne University

Carlos ARIDA (Thesis Co-advisor) Professor, Lebanese French University

Ali FAKIH (Reviewer) Professor, Lebanese American University

Vincent IEHLÉ (Reviewer) Professor, Rouen University

Serge BLONDEL (Examiner) Professor, Angers University

François GARDES (Jury's President) Emeritus Professor, Paris 1 Pantheon-Sorbonne University

Rania KAFFEL (Examiner) Associate Professor, Paris 1 Pantheon-Sorbonne University

Acknowledgements

Now that my PhD journey has come to an end, I would like to thank the Lord for all His blessings, especially for granting me the gift of self-fulfillment. I shall also express my gratitude for the Almighty for guiding me along the path towards people who assisted me with love and confidence so that I may forge ahead and reach my goal. I am mainly referring to Professor Marc-Arthur Diaye and Professor Carlos Arida; for my dream wouldn't have come true without their apprehension, understanding and embracement.

I owe thanks to Professor Marc-Arthur Diaye for presenting me with an excellent opportunity; an opportunity that allowed me to prove myself and devote my capacities within a continuous quest towards successfulness. He was wholeheartedly present by my side in my endeavor to prepare a thesis according to scientific criteria so that I may present it through the rostrum of Paris 1 Pantheon-Sorbonne University. It is a great honor for me to work with a person like yourself, a dedicated professor and an individual well known for his professionalism and humanity. I would like to seize this opportunity to extend my appreciation and respect for you.

Moreover, I offer my most profound thanks to Professor Carlos Arida, who invested his faith in me and believed in my potentials. No words are adequate enough to describe my appreciation and gratefulness to you for assisting me throughout the whole journey with all its bittersweet moments. I also thank the Lebanese French University as it aspires to support its students by introducing them to reputable French universi-

ties. This fact contributed to the fulfillment of my ambitions until I met my target.

I warmly thank my husband Bashir, my source of support and assistance, the one who embraced my dreams and sought to the best of his capacity to stand by me. He is the one who showed me that love means the act of ultimate sacrifice.

I also thank my three children, my great little heroes, Ghassan, Ghady, and Roudy, in whom I held my hopes and dreams. They inspired me with determination, patience, and persistence in order to achieve my intended goal. In return, I hope that I may become a good role model and serve as a torch that illuminates their path.

Finally, I render thanks to my grandfather's family, my parents, and my siblings. I highly appreciate their existence by my side as they symbolize the pure and sincere source of affection. They also represent the first origin of knowledge in my life and the source of principles and faith to which I was and still committed to in every moment and with every breath that I take.

Abstract

The major issues discussed in this thesis revolve mainly around the proposition of critical political, economic, and cultural reforms that might affect the tax compliance of the Lebanese taxpayers. After the shadow economy in Lebanon has been estimated and after the bribe's impact on tax evasion and economic growth has been analyzed, optimal institutions were suggested to confront tax evasion. This thesis consists of three chapters.

Chapter 1 estimates the shadow economy in Lebanon by applying the monetary approach. The shadow economy was estimated at 36.61% of the GDP in 2018. Also, it was revealed that the tax evasion's share of the shadow economy hit 30.04% in 2018. It must be noted that shadow economy forecasts were presented for the year 2020. This chapter also presents the multiples factors amplifying this phenomenon in Lebanon and proposes several elements that can limit its growth. For instance, it was shown that the control of the tax evasion might increase the GDP and reduce the shadow economy.

Chapter 2 introduces the bribe paid by the tax evaders to corrupted tax auditors, in a capital accumulation model to study its impact on the tax evasion decision and the economic growth. It was shown that the fiscal policy adopted by the government is the key factor defining the taxpayer behavior not the bribe. Moreover, it was proven that the bribe reduces both the individuals' capital accumulation and the government's public resources. This fact will lead to smaller economic growth, depending on capital accumulation. Besides, it was demonstrated that a productive government's budget is

a significant factor in the economic growth for a high tax rate. However, the individuals' capitals are the guiding factor of economic growth for a low tax rate.

Chapter 3 suggests an optimal aspect of the institutional design that might reduce fiscal fraud in Lebanon. It was revealed that optimal institutional design results in a higher tax collection and an increase in the state's income. Due to this fact, the introduction of changes in the institutional design is needed to improve the financial condition of the state and to respond to the Lebanese taxpayers, who demand competent and transparent institutions that are able to be inclusive. Public provisions, political institutions, tax system, and laws are essential instruments for the regulation of taxpayer behavior. Within this context, this chapter gives concrete proposals to enhance Lebanese taxpayers' compliance. It shows that a well-developed legal framework that controls the general authorities creates an ideal environment for economic and social progress. A "one man, one vote" electoral law, coupled with structural reforms of independent judicial and supervisory bodies, will support the improvement of the general authorities' performance. Therefore, taxpayers will trust the government and establish new cultural fundamentals that induce them to fulfill their obligations toward tax authorities and raise their level of compliance.

Keywords: Lebanon, bribe's impact, tax evasion decision, economic growth, shadow economy, optimal institutions, concrete reforms, tax compliance

Résumé

Cette thèse porte principalement sur la proposition de réformes politiques, économiques et culturelles cruciales visant à influencer la conformité fiscale des contribuables Libanais. Outre l'estimation de l'économie de l'ombre au Liban et l'analyse de l'effet des pots-de-vin sur la fraude fiscale et la croissance économique, des institutions optimales ont été suggérées afin de confronter la fraude fiscale. Ces sujets, objets de cette thèse, sont reformulés dans les trois chapitres détaillés ci-après.

Le premier chapitre évalue l'économie de l'ombre au Liban tout en mettant en œuvre une approche monétaire. Il convient de noter que l'économie de l'ombre a été appréciée à 36.61 % du Produit Intérieur Brut (PIB) en 2018. Il a également été révélé que la part de l'évasion fiscale dans l'économie de l'ombre avait atteint 30.04% en 2018. En ce qui concerne l'année 2020, des prévisions se rapportant à l'économie de l'ombre seront présentées. Ce chapitre introduit les facteurs multiples qui accentuent ce phénomène au Liban et suggère de nombreux éléments clés qui pourraient limiter sa croissance. Par exemple, il a été montré que le contrôle de la fraude fiscale pourrait accroître le PIB et diminuer l'économie de l'ombre.

Le deuxième chapitre aborde le pot-de-vin versé par les fraudeurs fiscaux aux contrôleurs fiscaux corrompus dans le cadre d'un modèle d'accumulation de capital; ceci a pour objectif d'étudier l'effet du pot-de-vin sur la décision de fraude fiscale et la croissance économique. Il a été démontré que la politique fiscale adoptée par le gouvernement est le facteur clé définissant le comportement des contribuables et non le

pot-de-vin. De plus, il a été prouvé que le pot-de-vin réduit l'accumulation de capital des individus ainsi que les ressources publiques du gouvernement. Ce fait entrainera une croissance économique plus faible en fonction de l'accumulation du capital. En outre, il fut démontré qu'un budget gouvernemental productif constitue un facteur important dans la croissance économique quant au taux d'imposition élevé. Cependant, les capitaux des particuliers représentent le critère déterminant dans la croissance économique en ce qui concerne le faible taux d'imposition.

Le troisième chapitre propose un aspect optimal de la conception institutionnelle qui pourrait réduire la fraude fiscale au Liban. Il s'est avéré que la conception institutionnelle optimale entraîne une perception d'impôts plus élevée et une augmentation des revenus de l'Etat. Pour cette raison, la mise en place de changements dans la conception institutionnelle est requise afin d'améliorer la situation financière de l'Etat ; de même celle-ci est nécessaire pour répondre aux contribuables Libanais qui réclament des institutions compétentes et transparentes, capables d'être inclusives. Egalement, les dispositions publiques, les institutions politiques, le système de taxation, ainsi que les lois sont des instruments essentiels pour la régulation du comportement des contribuables. De plus, ce chapitre fournit des propositions concrètes visant à optimiser la conformité des contribuables Libanais. Celui-ci montre qu'un cadre juridique bien développé contrôlant les autorités générales crée un environnement idéal qui puisse contribuer au progrès économique et le développement social. De même, la loi électorale " un homme, un vote " - combinée avec des réformes structurelles des organes judiciaires et des autorités de contrôle - favorisera l'amélioration de la performance des autorités générales. Par conséquent, les contribuables feront confiance au gouvernement et établiront de nouveaux fondamentaux culturels qui les incitent à remplir leurs obligations envers les autorités fiscales et à augmenter leur niveau de conformité.

Mots-clés : Liban, l'effet des pots-de-vin, décision de fraude fiscale, croissance économique, l'économie de l'ombre, institutions optimales, réformes concrètes, conformité fiscale.

Contents

Acknowledgements	i
Abstract	iv
Résumé	vii
Contents	xiii
List of Figures	xv
List of Tables	xvii
General Introduction	1
1 Shadow Economy and Tax Evasion in Lebanon	23
1.1 Introduction	24
1.2 Shadow economy estimation approaches	26
1.2.1 Direct approaches	29
1.2.2 Indirect approaches	30
1.2.3 The MIMIC or Model approach	35
1.3 Monetary approach materials	38
1.3.1 Results	41
1.4 Discussion	48
1.4.1 Proposals	52
1.5 Shadow economy forecasts for Lebanon 2020	58

CONTENTS

1.6	Conclusion	62
2	Bribe's Impact on Tax Evasion and Economic Growth in Lebanon	66
2.1	Introduction	67
2.2	Model Development	70
2.3	Evasion Decision	77
2.3.1	Proportionality of Fine to Evaded Taxes	77
2.3.2	The Imposition of Penalties on Unreported Income	78
2.4	Growth Implications for Variable Tax Rate	80
2.4.1	Fines Proportional to the Evaded Taxes	80
2.4.2	Fines Independent of the Tax Rate	83
2.5	Capital accumulation model in the current Lebanese context	84
2.6	Conclusion	86
2.7	Appendix	89
3	Institutions and Tax Compliance in Lebanon	92
3.1	Introduction	93
3.2	Trust Building Scheme through Institutions	98
3.2.1	Well-developed Legal Framework	101
3.2.2	Political Power	106
3.2.3	Tax System Structure	108
3.2.4	Structural and Administrative foundations	110
3.2.5	Social Interactions, Tax Morale and Education	111
3.3	Lebanese Global Configuration and Fiscal Reality	115
3.4	Development of the Optimal Institutional Design for Fiscal Fraud Re- duction in Lebanon	121
3.4.1	Political and Legislative Institutions	122
3.4.2	Judicial Reforms	128
3.4.3	Supervisory Authorities in Lebanon	131
3.4.4	Optimal Provision by Public Institutions	132

CONTENTS

3.4.5 Tax System Reform	136
3.5 Conclusion	142
General conclusion	147
Main findings and policy implications	150
Limitations and Future Research Directions	154
Bibliography	156

List of Figures

1.1	A taxonomy of types of underground economic activities	27
1.2	The structure of MIMIC model	37
1.3	Comparison of the estimated size of the shadow economy obtained from the real and the proposed data	58
2.1	Model's development structure	70
2.2	Lebanese government's budget expenditures	73
2.3	Individual's evasion decision with respect to the tax rate and the bribe acceptance	79
2.4	Growth rate with different productivity rate λ for varying tax rate τ	81
2.5	Growth rate for varying tax rate with different productivity rate λ and different probability of bribe acceptance η	82
2.6	Growth rate for varying tax rate in 2018	85
3.1	Well-structured framework for taxpayers' compliance	100
3.2	Authority's legitimacy impact on tax compliance	103
3.3	Institutions and taxpayers' behavior	105
3.4	Judicial and supervisory authorities' independency	130
3.5	Growth rate for varying probability of auditing	140
3.6	Towards inclusive institutions	142

List of Tables

1.1	Data used to estimate the shadow economy's size	43
1.2	Independent variables' comparative table	44
1.3	Econometric estimation, the first version	45
1.4	Econometric estimation, the second version	45
1.5	Annual estimates of the Lebanese shadow economy	47
1.6	Tax evasion's rate of the shadow economy	48
1.7	Modified GDP and velocity of circulation values with the same inflation rate and incentives	55
1.8	Econometric estimation, the third version	56
1.9	Modified annual estimates of the Lebanese shadow economy	57
1.10	Forecasted GDP, inflation rates, velocity of circulation and incentives .	60
1.11	Econometric forecasted estimation	60
1.12	Forecasted shadow economy estimation for 2019-2020	61
2.1	Comparative table for taxes on income, profits and capital gains	73
2.2	Comparative table for households' consumption	74
3.1	State debt of Lebanon	117
3.2	Budget deficit of Lebanon	119

General Introduction

The Lebanese Political Structure

Despite the many properties that define the Lebanese confessional system is marked by, its main characteristic lies in the proportional distribution of political power among the different religious communities based on their demographic weight and geographic distribution. This arrangement alludes to Arend Lijphart's literature regarding consociationalism in divided societies. As per Lebanon, the governmental representation of different groups is guaranteed by way of confessional lines. In other words, representatives of each religious community are entitled to a proportional number of high-level government offices, in addition to cabinet seats and legislative seats, and employment opportunities in the public sector (Saliba 2010). Consociational literature created by Arend Lijphart, constitutes the most commonly applied political theory with regard to fragmented societies embracing multiple confessions. The essence of this philosophy indicates that political elites belonging to diverse sects and characterized by different values will abide by an institutional arrangement that aims at favoring democratic stability and governance (Lijphart 1968). The objective of the parliamentary consociational democracy is to avoid sectarian conflicts and represent society's demographic composition in a truthful manner. This particularly applies to religious and minority groups that are presented within the state (Lijphart 1995). This is an efficient and realistic approach for managing conflicts, in addition to creating and preserving stability in deeply divided societies (Lijphart 1977, Andeweg 2000, Assaf 2004). Moreover, it is considered as a solution for sub-national and religious conflicts in the Middle East.

Despite the fact that many criticisms address democratic quality and vitality (Lustick 1997), consociationalism was considered as a solid and efficient approach in many different countries.

In Lebanon, Salamé (1994) indicates that confessional democracy survived for half a century despite many unfavorable factors, including the discontent of the Muslim confessional elite. Added to that is the endeavor of the governing confession to take over the biggest proportion of power, as well as the explicit rejection of the system by new radical forces instituted by modernization. Not to mention the continued interference exerted by the regional forces in the country's domestic affairs' (Salamé 1994). Somsen (2016) implies that the confessional system provided protection for Lebanon against a messy and precarious regional setting. Indeed, Lebanon is actually ranked as one of the most stable countries in the region despite the turbulent events that are taking place in Iraq and despite the fact that Lebanon is geographically close to Syria and the Islamic State where the war broke out. Thus, the consociational arrangement achieved its main objective: ensuring Lebanon's stability. It must be noted that the confessional system has been preserved since its emergence in the Ottoman era (Makdisi 2000, Collelo 2003, Traboulsi 2012). In addition, prominent signs of post-war settlement are being noticed as they are manifested by the political and economic rise of a new social group: The Shia. Under the wing of Hezbollah, the previously marginalized Shiite group obtained veto power in 2008. It must be mentioned that Hezbollah is considered today as a bona fide party that participates in domestic politics (Hamzeh 2004, Wiegand 2009). Moreover, it's involved in defending Lebanon's constitution and procedural legitimacy. Although 'occasional crises' arose from time to time, the system has been maintained since Lebanon's independence (Salamé 1994). Furthermore, some intellectuals indicate that the integration of new elites symbolizes natural adjustments to the consociational system, which in turn leads to more stability (Assaf 2004).

The sectarian client-patron networks, that constitute the foundation of the Lebanese

political system, survived an epic journey of warfare and battles, despite being described as vulnerable and unstable. To begin with, they faced a World War (1939-45) as well as three Arab-Israeli wars (1948, 1967, 1973); They also confronted the rise of Jamal Abd al-Nasser with its concomitant military revolutions elsewhere in the region. These networks have also handled two civil wars (1958, 1975-90) and subsequent occupations by Israel and Syria. Moreover, they endured three further rounds of fighting with Israel (1993, 1996, 2006). Currently, they are faced with a civil war in neighboring Syria. They have done so while maintaining an intact and unchanged composition. Makdisi and Marktanner (2009) have strongly criticized the consociational system in Lebanon. But at the same time, they admit that its most advantageous and valuable outcome lies in the levels of freedom and civil rights it provides. Subsequently, it places Lebanon well ahead of other Arab countries. Likewise, Ehrlich (2000) who has harshly criticized the consociational system, affirms that the post-war system aims at allowing the sects to resolve their own issues and preserve their own beliefs while belonging to a unified identity. Lebanon has maintained a liberal and pluralistic political environment. It was mainly marked by the predominance of civil liberties, notably freedom of expression; whereas the practice of consociational democracy suffered many flaws and defects, especially in the post-civil war period. Lebanon's model has provided an effective opportunity for various religious communities to engage in power sharing. It also allowed them to freely express their views in public policy debates. Nevertheless, one can clearly notice the advantages bestowed to the Maronites, the Sunni, and the Shia that constitute the three main religious communities (Makdisi et al. 2011).

Although the political system may not have vigorously promoted national integration in the post-war period, Abdel-Kader (2010) indicates that the system ensured favorable conditions for the emergence of 'national consciousness'. In addition, it contributed to an increased inter-community cooperation and allowed political values to thrive and converge. Abdel-Kader (2010) also stated that Lebanon's political system requires a high level of cooperation between different powers in order to promote concil-

iation in all issues that could lead to confessional disagreement or conflict. Therefore, Lebanon preserves its position as a model of pluralistic and stable democracy in the Middle East. As a matter of fact, it ensures a political representation of the country's sects through a confessional arrangement. Advocates of the consociational model consider it as the best alternate option thanks to the high degree of internal heterogeneity that Lebanon enjoys. In addition, Lebanon preserved its political stability despite the long civil war that broke out in neighboring Syria. Somehow, this stability is only ensured by its confessional system as it prevents the country from descending into yet another civil war. Consequently, Lebanese confessionalism is still viewed as the most sustained political model, despite the consociational trade-off between the guarantee of an institutional order and the lack of democratic quality. Yet, a domestic aspect of the situation has been neglected while emphasizing the stability of the Lebanese political system in the midst of a troubled regional scenario: the democracy's *modus operandi*. In fact, the real effects and limitations of the confessional consociationalism are responsible for the flawed Lebanese democracy yet they were ignored by most researchers.

The confessional system has been brutally criticized for promoting sectarian activities and reinforcing religious identities, as well as leading to political instability and causing the state's inefficiency (Van Schendelen 1984, Lustick 1997, Assaf 2004, Makdisi and Marktanner 2009, Nelson 2013). Horowitz (1985) argues that consociationalism might entrain the reification of ethnic divisions. Whereas Assaf (2004) states that consociationalism in Lebanon involves many negative effects; as it could lead to division among groups and promote politicized and manipulated ethnicity. Moreover, it cannot prevent communal combats. Discursively, critics stress on the restricted conception of the state's role, along with the assignment of legislative functions to non-state institutions. On top of that, traditional Maronite and Sunni elites are usually politically dominant (Makdissi 1996). Besides all the above-mentioned elements, consociational democracy has been reproached for maintaining a weak state and establishing differences between sects (Makdisi and Marktanner 2009). It must be noted that electoral

stimuli are previously determined within the context of confessional consociationalism. Moreover, they fixate voters' identification and politicians' affiliation on grounds of caste. This in turn affects election results that are well defined along doctrinal lines. Despite the efforts that were made in order to reach pluralistic representation, the flaws and lack of flexibility of the system contribute to the ignorance of dogmatic alterations and migration movements. Subsequently, they reify communal bonds and strengthen the regionally based elites in terms of electoral power. This power-sharing system leads us to think that local communities' leaders bargain for power within state institutions. Other than being the sole representatives of their communities, sectarian leaders are essentially the main providers of services, jobs, and security. This in turn has paved the way to a lengthy history of clientelistic networks.

The state's deficiencies that emerged due to the post-war political arrangement prevented this new "Lebanese history" from achieving full official recognition. Nevertheless, it certainly made steady progress regarding collective representations. The Lebanese state hardly intervened in the historiographical domain, since its creation in 1920 until the 1975-1990 war. By doing so, it preserved a non-intervention policy that mirrored its economic management approach. Lebanon, as opposed to many other states in the region, abstained from mobilizing its political, institutional, and financial means in order to create a national history that symbolizes a historiographical doxos. Lebanon's future can be foreseen according to two perspectives. The first one implicates that the country faces numerous, huge and complex problems to be able to reach a comprehensive solution. Whereas the second one indicates that the situation is not that bleak. Such optimism rests on one element: although the Lebanese citizens reproach each other and their political system, they all aim at preserving Lebanon during the process of its transformation. Everyone consents to the idea that confessionalism doesn't accurately reflect their interests, expectations and aspirations. Therefore, any formula designed to reinstate stability must address numerous basic crises: the Arab-Israeli conflict, sectarian divisions, and the various diversified challenges that beset

sovereign authority. Confessionalism and consociationalism have wiped out the likelihood of establishing a strong Lebanese state, where strength doesn't necessarily indicates authoritarianism or totalitarianism. A strong state resorts to universal suffrage in order to ensure an active and dynamic participation of its citizens in the governmental process and, thus, reinforces its national integrity. To achieve this goal, the country must quickly proceed with the deconfessionalism.

However, confessionalism relies on neutrality as well as institutional and parochial interests. Accordingly, deconfessionalism must be approached from formal and informal perspectives. First of all, in any evolutionary process that involves deep social and political changes, the men and women of letters must play a conclusive role. The educated class must also be aware of the confessional snares and seek to avoid them. In addition, they must adopt a "cooperative scheme" which comprises a voluntary and informal coordination of conflicting objectives. These must be managed through an ongoing political dialogue between groups, state bureaucracy, and political parties. In addition, the educated class must support social partnership, that is shared by both business and unions. Last but not least, the literati must enhance non-confessional organizations that aim at establishing citizenship culture. In other words, they must introduce a citizen with his national duties towards his fellow Lebanese irrespective of their confessional belongingness. Many authors (Barclay 2007, Somsen 2016) indicated that the Lebanese confessional system proved to be efficient and sustainable since it survived throughout the 20th century. Moreover, it ensured stability in Lebanon as the Lebanese country hosted new political elites in the post-civil war period. In this regard, we can namely mention the Shia. The inclusion of Hezbollah in the system as a political party demonstrated the system's co-operation and suitability for domestic reality while the Shiite party complied with the confessionalism rules. Yet, the country faced augmented tensions concerning sectarianism and polarization. Huge efforts were required to prevent the system from sliding into regional unrest and extremist groups. During the last decade, the country confronted continued institutional dis-

ruption and increased tensions between sects. This situation persisted even after the civil war's end (1975-1990). Tensions were manifested by the governance crises in 2005 and 2008. Not to mention the presidential vacuum from May 2014 to October 2016. Added to this are the persistent budget, energy, water, and waste disposal crises of 2015. The previous parliament postponed national elections three times since 2009 under the pretext of security concerns implicating political instability and the Syrian war.

Furthermore, Lebanon was reproached for lacking a powerful nation-state that enjoys a sufficient military defense, public goods and enhanced social services. The 2015 public protests and the results of 2016 municipal elections manifested mass dissatisfaction with regard to the Lebanese leaders as they failed to manage the country efficiently. In a way, stability in Lebanon stipulates the fulfilment of many requirements. Mainly, it demands a transitional period during which all confessions seek to enhance confidence and ease tensions. In order to achieve this, Lebanese citizens must realize that they are the only ones who can put an end to their misery. Moreover, they must realize that Lebanon's revival relies on moderation, discipline and non-violence. The public's mistrust in the competence of the traditional political class increased as the economic crisis deteriorated in Lebanon. During the illustrious October 2019 revolution, abundant numbers of citizens have hit the streets. Their main objective was to lay the blame on the country's political elite for corruption. Protestors also expressed their frustration towards politicians as they failed to provide rightful public services and led to an economic collapse at unprecedented levels. The government's announcement for additional tax plans triggered anger and protests among the public, while, at the same time, volunteer firefighters faced unexampled wildfires throughout the country. Protests were peaceful despite some fights involving the security forces and different political groups. As opposed to the uprisings of 2005 and 2015 that were led by political parties (2005) or directed by civil society groups (2015), the 2019 protests had a popular base and were decentralized by nature.

Towards a New Lebanese Society

Society structure in Lebanon often precluded the unity of citizen's position towards many pending issues. Indeed, the political division has always prevailed the livelihood issue. Although manifestations of popular movement used to emerge modestly upon the accumulation of crises, however, the government was predominantly unable to provide the simplest demands of its citizens, including electricity, solution to waste crisis, provision of job opportunities and hospitalization. Protesters' short-term demands comprised the government's resignation, in addition to the designation of a government of independent experts. They succeeded in achieving the latter as the government resigned and operates in a care-taker function. Protesting citizens utilized some spaces in order to practice direct political dialogue. For this purpose, they utilized many squares, streets and previous public properties that currently became privatized. Lebanese are not only protesting; they are also making discussions between large numbers of citizens. Furthermore, the protests and dialogues were not presided by experienced activists or politicians, while the crowd engaged in an efficient leadership at local levels. They organized debates, discussions, marches and created road barriers. Women and youth, who are frequently marginalized by society, both politically and economically, played an evident role in the protests' organization.

With regard to long-term demands, protesters claim better and accessible public services. They also ask for improved living conditions in terms of making jobs opportunities available for all citizens, as well as providing housing options and social security. They aspire for a functioning state that is capable of performing its duties to the fullest extent. Moreover, they demand full citizenship rights that are preserved within a different political system. Although protests gained a nation-wide character, and witnessed the creation of many slogans such as "All of them means all of them" and "The people want to tear down the system", many Lebanese hold onto to the distinctive character of their sectarian affiliation. The integrity that they showed could be

interpreted as support for their "unity in diversity" rather than a wish for dispersing their distinct sectarian identities. It is difficult to anticipate the success of protesters in changing the destiny of a country that suffers from a dire financial and economic situation; added to it a new political crisis. It makes sense to indicate that Lebanese politics is manifested through the competition of outside players who seek to define the small nation's fate. A new government will be assigned with the daunting task of embracing the unraveling financial crisis. What steps could a new government take to tackle the protests and the political crisis? It may convoke early election as claimed by protesters. Such election will have an impact on directing political tensions away from protests squares. However, any new players will have hard time gaining seats in parliament due to the actual electoral system. Subsequently, some analysts believe that the situation requires a reform of the electoral law prior to holding new elections. A new government could handle protesters' demand by presenting a detailed scheme comprising the method and period during which reform of the state will take place.

This scheme may carry comprehensive advisory processes that aim at making changes to the election law, in addition to framing the constitutional set-up, allowing broad and effective decentralization of the country, and reinforcing judicial independence. A government commits to reform in the short term by recovering misused revenues, adopting an effective tax collection policy, and promoting the independence of the judiciary. Furthermore, reforms must be implemented through the empowerment of local councils that improve service delivery and channel citizen participation in political decisions. Contrary to the huge mobilizations that date back to 2005 and 2015, the events that have been unraveling since October 2019 are characterized by unique and unprecedented features. In fact, protests were marked by a huge popular support that the country failed to witness since its independence in 1943. For the first time, demonstrations do not represent political camps fighting against one another. They rather symbolize the uprising of a popular movement resisting the legitimacy of established political parties. Usually, protests in Lebanon are generated by politi-

cal injustice; this time, the reason goes back to deep socio-economic roots. Actually, 2005 uprisings aimed at regaining the sovereignty from the Syrian regime, while 2015 protests were directed against inefficient governance of the ruling class. Whereas the government's inability to fulfill its high-aspiring promises clearly frustrated the people and manifested the depletion of its efforts consecrated to ensure structural political and socio-economic reforms. In addition to high unemployment rates and a debt-to-GDP ratio of 151% (World Bank 2019), escalating public discontent towards the economic situation peaked in October 2019 when the government announced the introduction of a new tax on WhatsApp calls.

Uprisings were decentralized as citizens realized they all share the same fate and all social groups across Lebanon are facing the same worsening socio-economic conditions. Protesters organized demonstrations, sit-ins and marches in the majority of Lebanese cities. Unlike what usually happens, Beirut was not at the center of media's attention. Yet their attention was drawn to Tripoli and other towns that never witnessed such a level of mobilization before. On October 27th, a human chain that was extended from north to south outlined the cohesion between the different protests, and showed a sense of solidarity and national unity that crosses the limits of regions and religions. Decentralized protests have created a civic space that fills the gap between society and the state. Public fora took back privatized public properties and transformed them into platforms for boosting cultural expression and initiating civil dialogue over main citizens' concerns. Camping-style meetings solicited interest of thousands of people throughout Beirut and other cities. Their objective was to debate strategies and schemes in order to establish the uprising's schedule. Lebanese citizens had the opportunity to learn and experience civic education in the streets. They are collecting, sorting and recycling their waste; they are also debating politics centered around the citizen. In short, they are achieving all things that politicians failed to do.

Dominant political parties concocted and presided the 2005 centralized protests.

While the 2015 demonstrations were headed by civil society's campaign. As per the 2019 revolt, political and civil actors were astonished by the pace at which the protests progressed. Uprisings were indeed directed despite the absence of individual leaders; they rather represented the prominence of a popular movement that is not subjected to the control of political parties and that emerges civil society movements. Social media and WhatsApp constituted the main communication tools for protesters as they adopted them to coordinate and conduct their actions. Although some political factions attempted to exert repression and provocations in order to recuperate the situation into their favor, these tools proved to be efficient in inducing quick, coordinated actions and in preventing the escalation of violent events. Youth and women led the course of action as they presided marches, sit-ins and roadblocks. These groups are making their voice heard in the streets amid a political system that persistently marginalized them. This prominent appearance is due to the absence of top-down organization as youths are directing the protests instead of experienced activists. Since the current economic system lacks decent job opportunities for university degree holders who graduate by thousands per year, high unemployment rates and alienation from traditional politics have prompted the Lebanese young class to resort to emigration or protests. Within the same context, the prominent appearance of Lebanese women in the protests reflects their determination to regain their role in public life. According to the World Bank survey (2018), women constitute only 20% of the Lebanese labor force. Moreover, they occupy a smaller percentage of political posts in municipal councils, the parliament and the government. Thus, Lebanon placed 140th on the 2018 Global Gender Gap Index. Obviously, patriarchal politics contributed to many disadvantages and undesirable repercussions for women. As a result, they are excluded from public office, they are economically marginalized, and they struggle to obtain their basic civil rights. Till present, children are unable to obtain their mother's nationality. Moreover, women's civil status depends on their male next of kin.

Lebanese claim accountability for leaders. They also demand job opportunities, and

aspire to social justice. Citizens want to have access to basic public services that the governing parties abstained to provide. As a matter of fact, Lebanon occupied 137th position out of 180 countries in Transparency International's Corruption Perceptions Index (2019), while more than 50% of the Lebanese don't trust their politicians. This is an expected result since half of the citizens aren't covered by social security, while environmental degradation is causing chronic illness for a huge numbers of people. According to the Lebanon Economic Vision report (2018), infrastructure ranks 113th out of 137 countries and it has the fourth worst quality of electricity supply worldwide. Moreover, this sector faces severe supply shortages since 1990, suffers from inefficiency and incurs enormous losses (IMF 2019). Political interests that are vested to specific elites in all sectors result naturally in absence of reforms. The delay of these reforms can no longer be tolerated. According to the World Inequality Database (2018), the 1% wealthiest class among Lebanese obtains 25% of national income while the top 0.1% earns as much as the bottom 50% of population. A considerable proportion of the wealthy class is constituted of politicians' relatives or business acquaintances. This basic solidarity between the political and economic sectors must now make way for a new elite; an elite that reorganizes political rules while taking into account democratic principles, competence, cost-efficiency and public government's accountability. Meanwhile, protesters realize that "administrative" reforms represent a new method of dealing with politics rather than a matter of technical knowhow in public management. The emergence of a new political approach in public institutions is vastly related to the rearrangement of political power. If we put aside governance issues, the protests symbolize an invitation to promote human dignity and citizenship rights that are preserved and maintained in a different political system.

Protesters are nothing but the targeted taxpayers who represent the heterogeneous face of the society. Consequently, a tax system reform is needed in order to improve tax compliance. Yet, reforming the tax system is not limited to the act of imposing suitable tax rates. It rather corresponds to a comprehensive reform of the Lebanese

arrangement. The arbitrary imposition of additional duties on the Lebanese taxpayer contributed to the rejection of injustice and caused the outbreak of the revolution composed of citizens of different sectarian, zonal and political affiliations. Based on the foregoing, we notice that the actual reasons that led to the revolutions outbreak in Lebanon are not limited to the dereliction of the government in performing its duty. They also comprise the government's continued and blatant exploitation of its citizens to the point of violating the individual's dignity. The arbitrary imposition of additional taxes just goes to indicate that the government disdains the people to a huge extent. In this spirit, we realize that the tax is far from being an economic tool designed for the collection of financial sums on the pretext of providing public services. It's a double-edged sword and its misuse would lead to adverse and unsolicited consequences. Hence, this subject establishes the background for the main question of this research. It tackles the possibility of reconstructing of tax system in Lebanon; especially in the absence of an embracing political and legal environment that preserves the taxpayer's right and defines the methodology of tax imposition based on scientific basis.

Cowell (1990) tackled the subject of tax evasion from different angles including the legal, economic and social one. He aimed at devising fiscal policies that tend to reduce the evasion rate, increase the level of public projects within a fair and efficient setting, and reduce costs of detection and control. Tax evasion, which is a special economic crime, does not only constitute a fiscal problem. It's also considered as a means of social protest; especially that the government that is supposed to spend the public revenues on beneficial projects for the community, deviates in one way or another from its main mission. Moreover, tax evasion represents a reflection of the individual's complex structure which swings between egoism and personal interest or social reputation and public interest. The subject of tax evasion in Lebanon - which constitutes one of the prominent aspects of the shadow economy - enjoys a particular impact; especially that it is widespread in a corrupt environment that authorizes the payment of bribe and its collection. Therefore, this reality supports the tax evasion decision. Thus, in order to

discover whether it facilitates this decision or not, and to determine its implications on the general economic situation, we resorted to the capital accumulation model adopted by Caballé and Panadés (2007) in their paper "Tax rate, Tax evasion and Growth in a Multi-period Economy". By adopting this model, we will be able to determine whether the acceptance of bribe is beneficial for the general economic situation. Moreover, we will verify whether the foundations of penalties that are proportionally imposed to the tax rate or their abstention have an impact on the tax evasion decision. In addition, this model will shed the light on the tax rate, the level of productive government spending and the private capital; the goal is to determine the driving factors of the economic growth and to contribute to create the optimal fiscal policy design.

In order to properly elaborate on the concept of tax evasion, we must take into account that evasion is a vital aspect of the shadow economy. For this reason, shadow economy in Lebanon will be reassessed using the monetary approach. This step aims at figuring out the adequate proposals that control this phenomenon. Moreover, it ensures the creation of resources that might finance government expenditure and reduce the debt ratio of GDP. The Lebanese have had enough of a system that has enriched the political elite while failing to build a stable economy and provide basic needs like 24-hour electricity and garbage collection. This reality led to a civil war about 30 years ago. It didn't end until a convention was held between kings of territorial divisions. The resulting deal divided power between the nation's 18 recognized religious sects, which led to effectively institutionalizing corruption, as each group was able to dole out government jobs, contracts, favors and social services to its followers. Therefore, we come up against another question related to tax evasion: if the institutions that represent the state lost its true significance in terms of performing their duties, how come the taxpayer abstains from adopting tax evasion as a solution for increasing his financial savings. As these savings provide his most basic rights amid the absence of the state deference; a state burdened by the failure of its institutions to perform their duties.

Institutions are the humanly invented restrictions that organize human relations (Alesina 2005). They are composed of formal restrictions that include rules, laws, constitutions, and informal restrictions. Behavioral norms, conventions and self-imposed codes of conduct, as well as their implementation characteristics, are a social fundament for the functioning of institutions (North 1990, Williamson 1975). In this sense, we wonder what is the optimal institution design in Lebanon that might reduce tax evasion especially that institutions in most literature are related to culture and beliefs (Alesina and Giuliano 2015). Is optimal institution design achievable without comprehensive reforms that affect the political, social and economic structure?

In particular, the tax subject is closely associated with the degree of trust in the government and its performance at various levels. Therefore, confidence building and tax compliance require bold moves starting with the amendment of laws such as the electoral law, passing by the separation of powers and roles, and ending with the changing of educational curricula. Within this framework, taxes constitute a financial obligation that the state defines and collects from taxpayers who are bound to pay it in order to achieve its economic, social, and developmental objectives. Whereas tax evasion is the capacity of the taxpayer to avoid payment of due taxes either wholly or partly.

Tax evasion in Lebanon is considered as a fact of life, which is justified for many reasons including the absence of awareness-raising culture about the critical role that tax plays in the development of the society, in addition to the imposition of tax burdens with understudied rates. In addition to the state's failure to perform its fundamental duties towards its citizens, the presence of fragile laws full of legal gaps, and convenient for tax evasion, makes incompliance a convenient way for the enhancement of the financial ability of an individual. The weak supervision and scrutiny, and refusal to apply effective penalties towards the bribe-giver and bribe-taker contribute to the development of the shadow economy. In this regard, the culture of self-reliance and corruption's acceptance prevail due to sectarian excuses that were fueled by successive

crises in Lebanon. As a matter of fact, they provided new dimensions for tax evasion from income tax payment, custom duties payment, bills and fees for public institutions. Consumer, banking sector, and employees whose taxes are deducted from their salary bear most of the tax burdens. Since the shadow economy is based on institutions that operate discreetly without any official presence and forms a large proportion of the Lebanese economy, citizens who pay taxes experience a more significant burden. Tax evasion is also a means designed for the expression of public position. In this context, taxpayers may refuse to pay obligations if they are convinced of the mismanagement of budget and the favoring of private benefit over social benefit by officials. However, tax evasion's control is needed in order to increase the state's revenues and reduce the budget deficit as this reduction is required to break this vicious circle.

The Thesis

This Ph.D. dissertation falls within the described context as it deals with the estimation of the shadow economy in Lebanon and includes recommendations that are intended to reduce it. The impact of bribes on tax evasion and economic growth and its dependence on private capitals were analyzed in order to suggest the optimal institution design that fights fiscal fraud.

The dissertation addresses the following research topics:

I- Estimation of the shadow economy and scenario of fraud reductions and its effect on Lebanon's economic growth.

II- Tax evasion and economic growth depending on a capital accumulation model.

III- Institutions and tax compliance: Does the current political organization promote fraud? What type of institutions is optimal for Lebanon?

In order to answer the first question, different databases were used as variables for econometric regression. These databases include the GDP (Gross Domestic Product), inflation rate, government expenses from the World Bank, and the money in circulation (M3) from Banque du Liban (BDL) for the period from 1998 to 2018 were used as variables for econometric regression. These variables were adopted since they are significant indicators of the economic growth and shadow economy. Matlab simulations, which depend on realistic standards for each parameter revealed an empirical outcome for the analysis of the second and the third points. In order to identify the relations between tax evasion and personal capitals, the capital accumulation model was verified from the individual viewpoint through the analysis of the growth depending on the private capital. The same capital accumulation model was considered from the government viewpoint with the goal to find the connection between fiscal fraud and institutional design.

The fight against tax evasion and its eradication is not a simple task for which the state tries to find quick solutions for the improvement of its management. On the contrary, it is an issue that has to be treated from social, economic, political, legal and human angles. These angles are taken into account in the third and fourth research topics. In fact, tax evasion is regarded as an economic crime against the state. However, what many developed countries consider as a crime is deemed as a way for the taxpayer to protect private funds from mismanagement and frequent wastage in the developing countries. Therefore, from this point on, addressing the issue of tax evasion in Lebanon begins by ensuring citizens' rights in order to earn taxpayers' trust and urge them to perform tax duties. For the citizens' right to be guaranteed, convenient economic and political conditions must be provided, in addition to the creation of private and public institutions in the light of a fair legal and judicial reality. Furthermore, these circumstances increase citizen's vigilance and confidence regarding the importance of tax's role in the revival of society. Therefore, the intervention of the

state in the control of tax evasion under the globally recognized due processes stands to reason. The principle of tax evasion control, alongside the appropriate expenditure of these taxes for the sake of the public interest, represents a critical element of the economic and social stability of the society. October 2019 revolt in Lebanon confirms that the arbitrary imposition of tax within the absence of its purpose and the increase of corruption are capable of triggering the revolution's sparkles.

This Ph.D. dissertation is organized as follows:

Chapter 1 aims to estimate the size of shadow economy in Lebanon by using the monetary approach. This analysis is based on the use of econometric estimates of the demand for money during the years 1998 to 2018. Moreover, this chapter determines the tax evasion's share of the shadow economy and provides forecasts of the shadow economy for 2019 and 2020. In addition, it presents recommendations to the Lebanese government regarding effective ways to reduce hidden transactions. First, it introduces the shadow economy and its negative effect on the economic growth of affected countries. In addition, it highlights to the interest of the governments across the globe in the development of strategies that are designed to reduce the size of the shadow economy (Schneider and Buehn 2009). Furthermore, this chapter defines some of the causal variables associated with the shadow economy. These include tax and social contribution security burdens (Dell'Ano 2007, Buehn and Schneider 2012), the institutions' quality (Schneider and Williams 2013), the implementation of different regulations in the country (Kucera and Roncolato 2008), and public sector services (Johnson et al. 1998). These variables also comprise tax morale (Kirchler 2007), deterrence (Feld and Schneider 2010), and self-employment as well as the development of the official economy (Schneider and Williams 2013). Furthermore, this chapter shows that the development of effective and proficient decisions concerning the distributions of a country's resources depends on the availability of evidence about the size of the shadow economy (Schneider and Buehn 2016). Second, it gives an overview of the

monetary method's materials and provides empirical results for the estimated size of the shadow economy in Lebanon. Within this context, the monetary approach assumes that all payments in shadow economy are made in cash, and that the velocity of circulation in observed and hidden sectors is the same. This estimation method is based on the methodology of Cagan (1958), which was later developed by Gutmann (1977), Feige (1979) and Tanzi (1980, 1983). Therefore, illegal transactions should be carried out in the form of cash payments in order to ensure the absence of the government authority's traces. An expansion in the shadow economy consequently results in the rise of currency demand. The monetary approach developed by Tanzi (1982, 1983) is based on the use of econometric tools in order to estimate the amount of cash required to finance shadow operations. A discussion on the significant challenges that must be addressed in Lebanon for the reduction of the size and effects of the shadow economy includes the smuggling at the illegal border crossings between Lebanon and Syria, the Syrian and the domestic workers' files, the informal public sector and the tax evasion topic.

Chapter 2 deals with the bribe that tax auditors accept for the benefit of tax evaders. It also handles the impact of tax evasion decision on the economic growth depending on private capital. Moreover, it defines tax evasion that is a high-risk decision made by offenders (Arrow 1970), as a fraud committed against the government (Cowell 1990). As well, it indicates that tax evasion occurs when the individuals do not declare their real income. However, the economic growth will be affected by these decisions and will, in turn, affect the general resources designed for financing the government. For Lebanon, where private capitals constitute the driving factor of the economy and where corruption reaches high levels, the bribe was introduced in a capital accumulation model in order to analyze its impact on the economy in general and the amount of unreported income in particular (Caballé and Panadés 2007). It was shown that the fiscal policy adopted by the government is the key factor defining the taxpayer behavior not the bribe. Moreover, it was demonstrated that in the case of imposition of fines

on evaded taxes, the evaded amount per individual decreases when tax rate escalates. Whereas, if the fines are imposed on unreported income, evasion amplifies when the tax rate increases. Growth implications and numerical simulations are provided to show the contribution of the bribe in reducing the private capital accumulation of the individuals and the government resources. This in turn will lead to a smaller economic growth.

Chapter 3 proposes an optimal inclusive aspect of the institutional design that attempts to reduce fiscal fraud in Lebanon. Public sector development, electoral law adjustment, tax system reform, and tax fraud criminalization are the dominant factors that affect the Lebanese taxpayers' behavior. According to Alesina (2005), an efficient institutional design is not enough to ensure harmony and growth since individuals, not institutions, are the decision-makers. Institutions are required to pave the way for well-intentioned policymakers in order to attain the constructive results and to create obstacles that impede corrupted plans (Alesina 2005). In this chapter, the capital accumulation model (Caballé and Panadés 2007), that is developed to determine the impact of the bribe and tax evasion on the private capitals was analyzed from the government's perspective. It was proven that a high probability of auditing associated with a low probability of bribe acceptance by the auditors contributes to the detection of a higher level of private capitals and to an increment in the numbers of risk-averse individuals. Consequently, this fact will contribute to the economic growth of the public sector at the expense of the private sector. Furthermore, this chapter suggested concrete economic, social, and juridical proposals destined for reducing tax evasion. It is devoted to the internal and external factors that might have an impact on the Lebanese taxpayers' decisions. Added to this is a set of reforms that have a primordial effect on tax compliance. It was shown that a restructuring of the Lebanese authority might raise the taxpayers' trust in the government and enhance tax compliance. Power's restructuration includes political reform, adjustable design for the electoral law, a redefinition of the judicial power's role, and determination of the supervisory authority's independence. The fair exchange between paid amounts and the

public services that are provided by the public institutions' services in addition to the quality of these supplies strongly affect the citizens' tax behavior. Structural reforms are required in order to introduce technological innovation. They can be reached by decentralizing resources and making the public institutions available, as they represent the most prominent result of the tax redistributions. This chapter identified the social, educational, and cultural norms that shape taxpayer behavior.

Finally, the general conclusion sums up the major findings of this Ph.D. dissertation. It also comes with a debate on the repercussions of our deeds and actions as Lebanese citizens, politicians, and policymakers. The conclusion also provides suggestions on future research directions that might emerge from this analysis.

Chapter 1

Shadow Economy and Tax Evasion in Lebanon

Abstract

This chapter aims to estimate the size of the shadow economy in Lebanon by using the monetary approach. This analysis is based on the use of econometric estimates of the demand for money during the years 1998 to 2018. These measures are used to determine the additional currency detained by agents to finance registered transactions. The Lebanese shadow economy is estimated to amount to 36.61% of the country's GDP in the year 2018. Tax evasion's share of the shadow economy reached 30.04% in 2018. This chapter also provides predicted estimation of the shadow economy for the years 2019 and 2020, and proposes recommendations to the Lebanese government regarding effective ways to reduce hidden transactions.

Keywords: shadow economy, monetary approach, Lebanon

JEL codes: E24, H3, K4, O17.

1.1 Introduction

Shadow economy is a multifaceted term. It is used to represent the series of activities designated by numerous names: hidden, unrecorded, underground, parallel, black, undeclared, under-declared, non-measured and under-registered transactions. In this chapter, the term for shadow or underground economy refers to legal or illegal activities that are not reported in the National Account Income Statistics of Lebanon. It is the description of all the economic activities- whether legal or illegal, market and nonmarket- that add value to the Gross Domestic Product (GDP), but are not reported to tax authorities nor documented in the statistics of the National Account Income of the country (Tedds 2005, Hernandez 2009). Over the years, the shadow economy was continually growing in different parts of the world. As for Lebanon, the shadow economy contributes significantly to the increase in employment and output in diverse sectors of the economy. The illegal transactions associated with this unobserved economy have a negative effect on economic growth. Some of the causal variables associated with the growth of the shadow economy include tax and social contribution security burdens (Dell'Anno 2007, Buehn and Schneider 2012), the quality of institutions (Schneider and Williams 2013) and the implementation of different regulations in the country (Kucera and Roncolato 2008). These causal variables also include public sector services (Johnson et al. 1998), tax morale (Kirchler 2007), deterrence (Feld and Schneider 2010), self-employment, and the development of the official economy (Schneider and Williams 2013). Given this context, government officials across the globe have developed various strategies to reduce the size of the shadow economy (Schneider and Buehn 2009). However, the development of effective strategies and regulations destined to control the increase of the shadow economy depends on the government's ability to estimate the shadow economy's size. In fact, the International Monetary Fund (2011) estimated the shadow economy's size in Lebanon during the years 1991 to 2015. The organization used the Multiple Indicators Multiple Causes (MIMIC) method to assess the ratio of the shadow economy to the country's GDP. The findings revealed that 31.58% of the country's GDP is attributed to the illegal transactions of the shadow

economy. However, this percentage only gives a preliminary estimate of the size of the shadow economy. Schneider and Enste (2002) also used the MMIC approach to evaluate the size of the shadow economy in Lebanon. The research showed that 34.1 % of the country's GDP for the years 1999 to 2000 was attributed to the illegal activities share of the unobserved economy. Schneider (2016) also documented that the Lebanese shadow economy represented an average of 33.1% of the country's GDP for the years 1999 to 2007. The International Monetary Fund attributed the large size of the shadow economy to the excessive tax and regulatory burden in the product and labor markets, as well as the low quality of institutions and governance. Similarly, the World Bank's (2015) report revealed that only one-third of all the workers in the country are formal employees. A research study carried out by Fakhri (2016) indicated that the total number of informal workers in Lebanon accounts for more than 50% of the country's workforce. This proportion continued to increase since the year 2011 due to the rise in the percentage of migrant workers (from 15 % in 2010 to more than 45% in 2016) as well as the influx of refugees from conflict areas in Syria during this period. It must be noted that the shadow economy plays a significant role in the economic activity of Lebanon. According to Rossis (2011), this phenomenon is a vital source of employment, revenue, and social conciliation in the country. A large part of society members receive income from shadow or underground activities. Despite the advantageous features of this underground economy, its negative impacts may weaken the entire state structure. In addition, this category of activities distorts the balance of payment, demand for money, and national income of the country (Tanzi 1983).

The measurement of the size of the shadow economy is an uphill task as employees who work in this sector conceal their profits. Such activities are hidden from the public authority because the economic data affects the real status of the country's economy. As a result, politicians are misguided and pushed to make inappropriate decisions, such as raising tax rates. This phenomenon fosters tax evasion and avoidance, which results in the loss of tax revenues and leads to limited government funds. Torgler (2004)

stated that individuals who live in societies that offer poor public services are more likely to evade taxes. The development of effective and proficient decisions concerning the distributions of a country's resources depends on the availability of evidence about the size of the shadow economy (Schneider and Buehn 2016). Lack of information about this phenomenon will enable the government to finance public expenditures and debts that aim to satisfy its citizen's economic, political, and social needs. Hence, this chapter seeks to estimate the size of the shadow economy in Lebanon. Although a various economic approaches exist for this purpose, however the monetary approach was adopted in this chapter. The first section of this chapter offers a brief introduction about the existence and impact of the shadow economy on Lebanon and its economic development. While the second part is dedicated for the presentation of the shadow economy estimation approaches. Thereafter, the third part is devoted to monetary method's materials; it also provides empirical results for the assessment size of the shadow economy in Lebanon for the period 1998-2018. The fourth section offers a discussion and recommendations on the ways to reduce the size and effects of the shadow economy in Lebanon. Whereas the fifth section predicts the shadow economy for the years 2019-2020. Finally, the sixth section provides a conclusion for the chapter and highlights the limitations encountered during the research .

1.2 Shadow economy estimation approaches

Measuring the size of shadow economy is not a simple task. It requires the determination of a definition for this phenomenon (Feld and Schneider 2010). A commonly adopted definition refers to it as follows: all currently unrecorded economic activities that would contribute to the official calculated Gross National Product if observed (Feige 1989). Smith (1994) uses the following definition: "market-based production of goods and services, whether legal or illegal, that escapes detection in the official estimates of GDP". One of the broadest definitions describes it as such: "those economic

activities and the income derived from them that circumvent government regulation, taxation or observation”.

Type of activity	Monetary transactions		Non-monetary transactions	
Illegal Activities	Trade with stolen goods; drug dealing and manufacturing; prostitution; gambling; smuggling; fraud; etc.		Barter of drugs, stolen goods, smuggling etc. Producing or growing drugs for own use. Theft for own use.	
	Tax Evasion	Tax Avoidance	Tax Evasion	Tax Avoidance
Legal Activities	Unreported income from self-employment; Wages, salaries and assets from unreported work related to legal services and goods	Employee discounts, fringe benefits	Barter of legal services and goods	All do-it-yourself work and neighbor help

Figure 1.1: A taxonomy of types of underground economic activities

The figure 1.1 represents an illustrious table made by Lippert and Walker (1997) to offer a rational definition of the underground economy. It is obvious that a broad definition of the shadow economy includes unreported income from the production of legal goods and services, either from monetary or barter transactions. Therefore, it includes all economic activities that would generally be taxable when they are reported to the tax authorities. According to Pedersen (2003), the shadow economy includes all market-based legal production of goods and services that are deliberately concealed from public authorities for many reasons. First, those who conceal such activities aim to avoid payment of taxes, e.g. income taxes or value added taxes. Second, their objective is to avoid payment of social security contributions. Third, they intend to avoid certain legal labor market standards, such as minimum wages, maximum working hours, safety standards, etc. Fourth, they seek to avoid complying with certain

administrative procedures, such as completing statistical questionnaires or other administrative forms. Individuals are rational calculators who weigh up costs and benefits when they consider breaking the law. Their decision to partially or completely participate in the shadow economy is marred by uncertainty; they might experience a trade-off between gains if their activities are not discovered, however, they might incur losses and get penalized in case they were caught. In this context, the direct, indirect and MIMIC approaches are the commonly used approaches for estimating the shadow economy (Schneider 2016). However, each of the methods has its own advantages and disadvantages. As for Lebanon, the shadow economy was estimated by the IMF (2011) and Schneider (2010, 2017) using the MIMIC approach.

In this, chapter, we will be applying the monetary approach since the required data are accessible. The monetary method is extensively applied in literature. It has the widest scope since it covers all money transactions and not only industrial or consumption transactions. Subsequently, the monetary approach can be considered as an adequate one to estimate the shadow economy in Lebanon. In fact, the main issues encountering the shadow economy in Lebanon, such as the smuggling at the illegal border crossings between Lebanon and Syria, the Syrian and domestic workers' files, the informal public sector and the tax evasion topic rely on monetary transactions and involve monetary implications. In addition, this approach does not require costly surveys that are restricted to a sample and it allows performing yearly, quarterly or even monthly estimations to consider the evolution of the size of shadow economy. This approach is based on econometric estimates of the demand for money. These estimates are utilized to obtain the extra cash held by economic agents for financing the registered transactions (Ahumada et al. 2009). Therefore, finding a new outcome according to this different approach might further clarify the reality of shadow economy in Lebanon. This, in turn, inspires an adequate plan of action in order to confront this phenomenon. In this section, a brief comprehensive summary of the different approaches for estimating the size of a shadow economy is displayed.

1.2.1 Direct approaches

These are microeconomic approaches that depend on well-designed surveys and samples based on voluntary responses, or tax auditing and other compliance methods. It must be noted that sample surveys that estimate the shadow economy are customarily used. However, the main weaknesses of this method evolves around the flaws that are deeply rooted in all surveys. For example, the average precision and results depend to a great extent on the respondent's willingness to cooperate. Therefore, a direct questionnaire is not considered as an accurate means for assessing the amount of undeclared work since most interviewees hesitate to confess having committed fraud. Subsequently, responses are not certainly reliable. This in turn makes it difficult to calculate a true estimate of the amount of undeclared work. However, the main advantage of this method lies in the detailed information that can be obtained about the structure of the shadow economy. But the results obtained from these types of surveys depend greatly on the formulation of the questionnaire. Estimates of the shadow economy might also rest on the discrepancy between the income that is declared for tax purposes and the one measured by selective checks. In this regard, fiscal auditing programs have been considered very efficient. Since these programs are designed to measure the amount of undeclared taxable income, they may also be adopted to calculate the size of the shadow economy.

However, this approach faces many setbacks. First, the exploitation of tax compliance data corresponds to the use of a possibly biased sample of the population. In general, taxpayers are not randomly selected for tax audits. This selection is rather based on properties of submitted tax returns that indicate a certain likelihood of tax fraud. Consequently, this sample is not randomly chosen from the whole population. Moreover, estimates of the shadow economy based upon a biased sample may not be exact. Second, estimates based on tax audits reflect only a portion of the shadow economy discovered by income tax authorities. Hence, this could constitute a tiny fraction of all hidden income. Another disadvantage of these two direct methods -surveys and tax auditing- corresponds to the point estimation. Survey methods are likely to under-

estimate the shadow economy as people might not fully declare in surveys what they are concealing from authorities.

1.2.2 Indirect approaches

These approaches, which are also denominated as indicator approaches, are mostly macroeconomic. In this sense, they use various economic and other indicators that contain information about the development of the shadow economy over time. Normally, five indicators that leave some traces of the shadow economy are taken into account.

The discrepancy between national expenditure and income statistics

This approach relies on discrepancies between income and expenditure statistics. In national accounting, the income measure of GNP must be equal to the expenditure measure of GNP. Therefore, if an independent estimate of the expenditure side of the national accounts is accessible, the gap between the expenditure measure and the income measure can be considered as an indicator of the size of the shadow economy. Since national accounts' statisticians are anxious to minimize this discrepancy, the initial discrepancy or first estimate rather than the published discrepancy, should be employed to assess the shadow economy rather than the published discrepancy. If all the components of the expenditure side are measured quite precisely and without error, then this approach would indeed provide a good estimate of the size of the shadow economy. Unfortunately, this is not the case. Instead, the discrepancy reflects all omissions and errors in the national accounts statistics as well as the shadow economy. Therefore, these estimates may be preliminary and they lack reliability.

The discrepancy between the official and actual labor force

If the labor force participation declined in the official economy, this indicates the increase of activity in the shadow economy. If the participation of the total labor force is assumed to be constant, then a decreasing official rate of participation can be seen as an indicator of increased shadow economic activities. One weak point of this method can be summarized as such: differences in the rate of participation may have other causes. In addition, people can work in the shadow economy and have a job in the official economy. Subsequently, such estimates might be considered as weak indicators of the size and development of the shadow economy.

The transactions approach

This approach has been fully developed by Feige (1986). It is founded on the assumption that there is a constant relation over time between the volume of transactions and official GNP, as summarized by the Fisher quantity equation, or $M * V = p * T$ (with M corresponding to money, V to velocity, p to prices, and T to total transactions). Assumptions also have to be made about the velocity of money $p * T$ and about the relationships between the total value of transactions (official and unofficial) and nominal GNP. If total nominal GNP has been related to total transactions, the GNP of the shadow economy can be calculated by subtracting the official GNP from total nominal GNP. However, one must also assume a base year in which there is no shadow economy in order to derive figures for the shadow economy. For this reason, exact numbers on the total volume of transactions must be provided, in order to obtain reliable estimates of the shadow economy. This proves to be difficult in terms of cash transactions, as they depend, among other factors, on the durability of bank notes and the quality of the paper on which they are printed. In addition, it is speculated that all variations in the ratio between the total value of transactions and the officially measured GNP are due to the shadow economy. Although this approach is theoretically attractive, however its difficult to fulfill the empirical requirements that are necessary for obtaining

reliable estimates. Therefore, the results of its application may be doubtful.

The currency demand approach

The currency demand approach was first used by Cagan (1958), who considered the correlation between currency demand and tax pressure. Gutmann (1977) applied the same approach but didn't adopt any statistical procedures. However, Cagan's approach was further developed by Tanzi (1980, 1983), who estimated a currency demand function. This approach assumes that shadow (or hidden) transactions are undertaken in the form of cash payments in order to leave no observable traces for the authorities. The basic regression equation for currency demand, proposed by Tanzi (1983), is the following:

$$\ln(C/M2)_t = \beta_0 + \beta_1 \ln(1 + TW)_t + \beta_2 \ln(WS/Y)_t + \beta_3 \ln R_t + \beta_4 \ln(Y/N)_t + ut,$$

with $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 < 0$, $\beta_4 > 0$, where \ln denotes natural logarithms, $C/M2$ is the ratio of cash holdings to current and deposit accounts, TW is a weighted average tax rate (as a proxy for changes in the size of the shadow economy), WS/Y is a proportion of wages and salaries in national income (to capture changing payment and money holding patterns), R is the interest paid on savings deposits (to capture the opportunity cost of holding cash) and Y/N is per capita income.

An increase in the size of the shadow economy will therefore lead to an augmentation in the currency demand. In order to isolate the resulting excess demand for currency, an equation for currency demand is evaluated over time. All possible conventional factors are controlled, such as the income development, payment habits, interest rates, credit and other debt cards as a substitute for cash and so on. Additionally, the estimation equation includes variable factors such as direct and indirect tax burdens, government regulation, state institutions and tax morale, which are assumed to be major factors causing people to work in the shadow economy. This is one of the most

commonly used approaches. However, it elicited several criticisms. The first main objection regarding this method is based on the fact that not all transactions in the shadow economy are paid in cash. The second of the three commonly raised objections is related to the idea that tax burden is the main cause of the shadow economy. Last but not least, the third major objection is linked to the concept that money circulation has the same velocity in official and shadow economies.

The physical input or electricity consumption method

There are two approaches regarding the electricity consumption method: the Kaufmann-Kaliberda method and the Lackó approach.

The Kaufmann - Kaliberda Method

In order to measure overall, official and unofficial, economic activity, Kaufmann and Kaliberda (1996) assume that electric power consumption is the single best physical indicator of overall economic activity. Overall economic activity and electricity consumption have been empirically observed throughout the world to move in lockstep with an electricity-to-GDP elasticity usually close to one. In other words, the growth of total electricity consumption is an indicator for growth of overall GDP. Kaufmann and Kaliberda (1996) derive an estimate of unofficial GDP by calculating this proxy measurement for the overall economy and then subtracting from this overall measure the estimates of official GDP from this overall measure. This method is very simple and appealing. Yet it can also be criticized for different reasons. For example, not all shadow economy activities require a considerable amount of electricity (e.g. personal services), while other energy sources can be exploited (gas, oil, coal, etc.). Consequently, only a part of the shadow economy will be figured out.

The Lackó method

Lackó (1998, 1999, 2000a,b) assumes that a certain part of the shadow economy is associated with the household consumption of electricity. This part includes so-called household production, do-it-yourself activities, and other non-registered production and services. In brief, Lackó (1996) supposes that in each country a part of the household consumption of electricity is used in the shadow economy. Within this context, Lackó's approach (1998) can be described by the following two equations:

$$\ln E_i = \alpha_1 \ln C_i + \alpha_2 \ln PR_i + \alpha_3 G_i + \alpha_4 Q_i + \alpha_5 H_i + u_i, \text{ with } \alpha_1 > 0, \alpha_2 < 0, \alpha_3 > 0, \\ \alpha_4 < 0, \alpha_5 > 0$$

and $H_i = \beta_1 T_i + \beta_2 (S_i T_i) + \beta_3 D_i$ with $\beta_1 > 0, \beta_2 < 0, \beta_3 > 0$ where:

i indicates the number assigned to the country,

E_i is per capita household electricity consumption in country i ,

C_i is per capita real consumption of households without the consumption of electricity in country i in US dollars (at purchasing power parity),

PR_i is the real price of consumption of 1 kWh of residential electricity in US dollars (at purchasing power parity),

G_i is the relative frequency of months requiring heating in houses in country i ,

Q_i is the ratio of energy sources other than electricity energy to all energy sources in household energy consumption,

H_i is the per capita output of the hidden economy,

T_i is the ratio of the sum of paid personal income, corporate profit and taxes on goods and services to GDP,

S_i is the ratio of public social welfare expenditures to GDP,

D_i is the sum of the number of dependents over 14 years and inactive earners, both per 100 active earners. It was presumed that in countries where the portion of the shadow economy associated with household electricity consumption is high, the rest of the hidden economy will also be high. Lackó (1996) believes that a part of the

household consumption of electricity is used in the shadow economy in each country. The weak point of this method is summarized by the fact that not all shadow economy activities require a considerable amount of electricity. In fact, other energy sources can be used. Additionally, shadow economy activities do not take place only in the household sector. It is uncertain whether the ratio of social welfare expenditures can be used as the explanatory factor for the shadow economy. This notion is especially applicable in transition and developing countries. The most reliable base value that calculates the size of the shadow economy for all other countries, especially for transition and developing countries, is called into question.

1.2.3 The MIMIC or Model approach

The concept of the MIMIC model is to examine the relationships between a latent variable -which is "size of shadow economy"- and a number of observable variables by using their information of covariance. The observable variables are grouped into causes and indicators of the latent variable. The key advantages of the MIMIC approach are the following: it allows modeling of shadow economy activities as an unobservable (latent) variable and it considers its multiple determinants (causes) and multiple effects (indicators). It was first introduced by Joreskog and Goldbreger (1975) and its contemporary form is perhaps best described by Giles and Tedds (2002). In comparison to other statistical methods, MIMIC models offer several advantages for the estimation of shadow economic activities. According to Giles and Tedds (2002), the MIMIC approach is a wider approach than most other competing methods, since it allows one to take multiple indicator and causal variables into consideration at the same time. Moreover, this approach is quite flexible as it allows us to vary the choice of causal and indicator variables based on the particular features of the shadow economic activity studied, the period in question, and the availability of data. MIMIC models lead to formal estimation and testing procedures, such as those based on the method of maximum likelihood. These procedures are well known and are generally optimal if the sample is

sufficiently large (Giles and Tedds 2002). Schneider and Enste (2000) emphasize that these models lead to some progress in estimation techniques concerning the size and development of the shadow economy, as this methodology allows wide flexibility in its application.

MIMIC approach adopts structural equations model (SEM) for estimation. First, a structural equation is introduced below:

$$\eta = \gamma'X + \zeta \tag{1.2.1}$$

Where $X = (X_1, X_2, \dots, X_q)$ is a $(q * 1)$ vector and each X_i for $i = 1, \dots, q$ is a potential cause of the latent variable η and $\gamma' = (\gamma_1, \gamma_2, \dots, \gamma_q)$ is a $(1 * q)$ vector of coefficients describing the relationship between X and η .

MIMIC approach adopts structural equations model (SEM) for estimation. First, in a structural equation as such, the latent variable η is determined by a set of exogenous causes and ζ being an error term. The previously represented mode is called a structural equation model and it is basically a regression model with an unobservable dependent variable. Even though η cannot be measured directly, however it still has impact on another set of observable variables. Those variables are called indicators, and their relationship to η is described by a measurement model as expressed below:

$$Y = \lambda\eta + \epsilon \tag{1.2.2}$$

Where $Y = (Y_1, Y_2, \dots, Y_p)$ is a $(p * 1)$ vector of several indicator variables, λ is the vector of regression coefficients, and ϵ is an error term. When the two equations are combined, a multivariate regression model is formed in which endogenous variables Y_j for $j = 1, \dots, p$ are indicator variables of a shadow economy variable η and exogenous variables X_i for $i = 1, \dots, q$ are cause variables of a shadow economy variable η .

A general equation is expressed as follows:

From (1.2.2) : $\eta = \lambda^{-1} (Y - \epsilon)$

From (1.2.1) and (1.2.2):

$$\gamma'X + \zeta_t = \lambda^{-1}(Y - \epsilon) \rightarrow Y = \lambda\gamma'X + \lambda\zeta + \epsilon \rightarrow Y = \Pi X + z \quad (1.2.3)$$

The structure of the model can be simplified by the below diagram based on Giles and Tedds (2002):

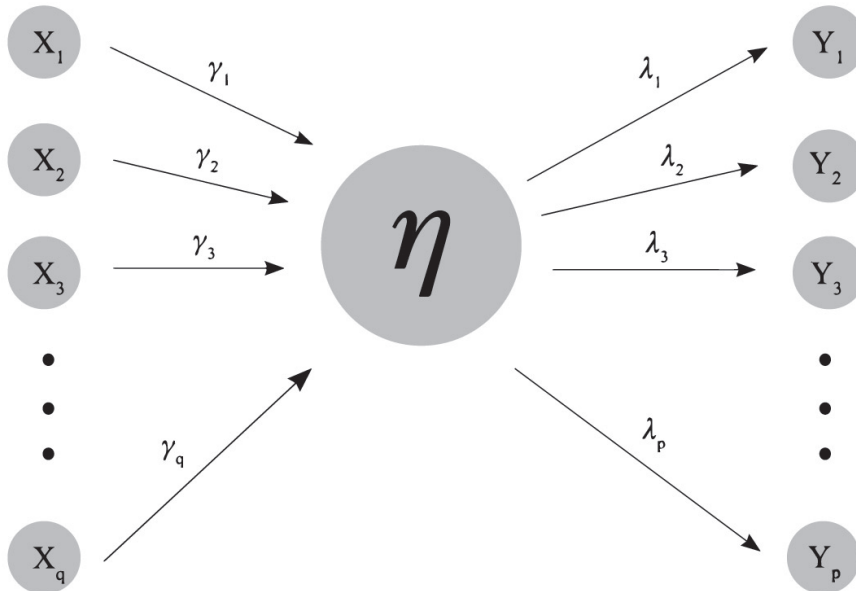


Figure 1.2: The structure of MIMIC model

Nevertheless, this method has its limitations, and they are identified in the literature. The three important points of criticism focus on the model's implementation, the sample used, and the reliability of the estimates. The most frequent objection revolves around the meaning of the latent variable (Dell'Anno 2003). This criticism, which is probably the most common in literature, remains difficult to overcome as it goes back to the theoretical assumptions behind the choice of variables and empirical limitations on data availability.

1.3 Monetary approach materials

The monetary approach was used to estimate the size of the shadow economy in Lebanon. This estimation method is based on the methodology of Cagan (1958), which was later developed by Gutmann (1977), Feige (1979), and Tanzi (1980, 1983). The monetary approach takes into consideration that all payments in the shadow economy are made in cash, and the velocity of circulation in observed and hidden sectors are the same. An expansion in the shadow economy consequently results in a rise in the demand for the currency. The monetary approach developed by Tanzi (1982, 1983) is based on the use of econometric tools in order to estimate the amount of cash required for financing shadow operations. The monetary approach equation for the currency was used to determine the additional cash detained by economic agents to finance such activities.

The currency demand function for this approach is shown below:

$$C_{Ot} = A(1 + \Theta_t)^\alpha Y_{Ot}^\beta e^{(-\gamma i_t)} \quad (1.3.1)$$

C_{Ot} is the observed cash balance at time t , Θ_t is the variable that induces agents to make hidden transactions (e.g., the ratio of taxes or government expenditure to GDP), Y_{Ot} is a scale variable (e.g., registered GDP), i_t represents the interest rate or the rate of inflation, while A, α, β and γ are positive parameters.

$$C_{Ot} = C_{Tt} = C_{Rt} + C_{Ht} \quad (1.3.2)$$

C_{Rt} is the cash documented for recorded transactions, C_{Ht} is the cash used for hidden transactions, while C_{Tt} or C_{Ot} is the total currency.

Y_{Tt} is the addition of the observed income Y_{Ot} or the registered income Y_{Rt} to the hidden income Y_{Ht} . Hence:

$$Y_{Tt} = Y_{Ot} + Y_{Ht} = Y_{Rt} + Y_{Ht} \quad (1.3.3)$$

The application of the monetary approach involves four major steps. The first step is the estimation of currency demand as in (1.3.1).

The second step involves the adjustment of Θ to zero to ensure that C_R and C_H have the same functional form with equal parameters in equation 1.3.4 and without any incentive to hide transactions \hat{C}_{Rt} .

$$\hat{C}_{Rt} = \hat{A}Y_{Ot}^{\hat{\beta}}exp(-\hat{\gamma}i_t) \quad (1.3.4)$$

The third step determines the cash for hidden transactions, \hat{C}_{Ht} by calculating the following difference:

$$\hat{C}_{Ht} = C_{Tt} - \hat{C}_{Rt} \quad (1.3.5)$$

The fourth step shows that the velocities of circulation for both registered and hidden transactions are equal,

$$v_{Rt} = \frac{Y_{Rt}}{C_{Rt}} = \frac{Y_{Ht}}{C_{Ht}} \quad (1.3.6)$$

$$\hat{Y}_{Ht} = \hat{v}_{Rt}\hat{C}_{Ht} \quad (1.3.7)$$

Where \hat{Y}_{Ht} is the estimation of the size of the shadow economy.

These four steps may be substituted by the direct estimation method developed by Ahumada et al. (2009), which applies econometric means to assess the demand for money. The assumption that indicates that the multiplication of currency excess with a velocity of circulation is equal in both registered and hidden sectors of the economy is the underlying rationale for the employed way of measurement of the hidden economy. The evaluation of the shadow economy size was restricted to the long run estimates of the demand for money to avoid *ad hoc* assumptions for the values of the registered cur-

rency. The inclusion of the lagged dependent variable with the known initial condition into the short-run estimate with regression is presumed as follows:

$$c_{Tt} = b_1 + b_2c_{Tt} + b_3y_{Rt} + b_4i_t + b_5\ln(1 + \Theta_t) \quad (1.3.8)$$

The lower case letters are used to represent the logarithms of the original definitions. The equation is a model of partial adjustment that is designed to reach the following:

$$C_{Tt} = AY_{Rt}^\beta e^{(-\gamma i_t)}(1 + \Theta_t)^\alpha \quad (1.3.9)$$

The case is the same in logs as it is expressed in the following equation:

$$c_{Tt} = \ln(A) + \beta y_{Rt} - \gamma i_t + \alpha \ln(1 + \Theta_t) \quad (1.3.10)$$

Hence, the equilibrium value for the level of targeted real cash holdings presents the following sustained solution that has no requirements concerning the information related to initial conditions:

$$c_{Tt}^* = c_{Tt-1} \quad (1.3.11)$$

$$c_{Tt}^* = \frac{b_1}{1 - b_2} + \frac{b_3}{1 - b_2}y_{Rt} + \frac{b_4}{1 - b_2}i_t + \frac{b_5}{1 - b_2}\ln(1 + \Theta_t) \quad (1.3.12)$$

The two previous equations show that:

$$\frac{b_1}{1 - b_2} = \ln(A)$$

$$\frac{b_3}{1 - b_2} = \beta$$

$$\frac{b_4}{1 - b_2} = -\gamma$$

$$\frac{b_5}{1 - b_2} = \alpha$$

Based on the fact that observed currency includes C_{Ht} , while observed income excludes Y_{Ht} , the traditional econometric regression of C_{Ot} and Y_{Ot} would result in biased estimates. Therefore, it is important to indicate that $\Theta_t = 0$, C_{Rt} can be directly determined. However, the calculation of C_{Rt} for the short run is a different issue since

C_{Rt-1} , or preceding value of it, should be well-known. The various parameters used to extrapolate the value of C_T are shown in the partial adjustment model below:

$$C_{Tt} = C_{Tt-1}^\lambda C_{Tt}^{*(1-\lambda)} = (C_{Rt-1} + C_{Ht-1})^\lambda (C_{Rt}^* + C_{Ht}^*)^{(1-\lambda)} \quad (1.3.13)$$

where

$$C_{Tt} = AY_{Rt}^\beta e^{(-\gamma_{it})} \left(1 + \left(\frac{Y_{Ht}}{Y_{Rt}}\right)^\beta\right) = AY_{Rt}^\beta e^{(-\gamma_{it})} (1 + \Theta_t)^\alpha \quad (1.3.14)$$

When the value of $\Theta_t = 0$, the desired C_{Rt}^* value that is due to registered transactions can be obtained. However, the value of C_{Rt} as a whole cannot be derived because C_{Rt-1} should be a known variable. In most monetary approach applications, C_{Tt-1} is used as an alternative for C_{Rt-1} . Accordingly, C_{Rt} is overestimated as λ values are positive. If C_{Rt-1} was replaced by C_{Rt-2} and C_{Rt-2} was substituted by its preceding value et cetera, the necessary information about registered currency would be moved back to an initial value of C_{R0} . It must be noted that C_{R0} corresponds to the initial condition of the solution related to the first-order differential equation regarding the log of currency demand. However, C_{R0} represents registered real cash when $t = 0$. This value can only be deduced if there is no concealment in underground economy transactions that is reflected by $C_{R0} = C_{T0}$. On the whole, the only solution to avoid ad hoc assumptions about the previous values of registered currency is the following: the limitation of estimates of the shadow economy size concerning the evaluated demand for money within the long-term perspective.

1.3.1 Results

The direct estimation of the size of the shadow economy in Lebanon was based on the aggregate demand for money described by Cagan (1958). The data collection method took account of the time series properties for cash holdings, income, interest rate, and inflation. All the data sets were used to calculate the demand in the currency and evaluate the size of the hidden economy in Lebanon. The data related to the years 1998

until 2018 were extracted from the World Bank open access data and the Lebanese Central Bank. In this chapter, the dependent variable for the long run regression equation is the total currency demand held by the agents c_t at a particular year t .

y_{Rt} denotes the registered income at a specific year t , which is considered as the Gross Domestic Product (GDP). The Gross National Income (GNI) was also used with reference to GDP.

i_t represents the inflation rate at a particular year t . Two alternative rates were used in this research paper, namely the annual interest rate on time deposits and the inflation rate. However, the latter was best fitted for the regression equation.

Θ_t denotes the incentives used to make a hidden transaction(s) at a given year t . The two options that were tested within this paper are the ratio of collected taxes to GDP and the government expenditure to GDP. However, government expenditure to GDP was applied.

The data used for the estimation of the size of the shadow economy in Lebanon is shown in table 1.1.

Years	M3	GDP	Inflation rate (%)	Expenses to GDP (%)	Velocity
1998	4.51E+14	2.61E+13	4.107	26.17	0.887
1999	5.09E+14	2.62E+13	0.81	28.05	0.789
2000	5.65E+14	2.60E+13	-2.087	30.51	0.834
2001	6.12E+14	2.66E+13	-1.525	29.009	0.800
2002	6.44E+14	2.88E+13	4.921	28.35	0.914
2003	7.30E+14	3.02E+13	1.581	30.47	0.871
2004	8.11E+14	3.15E+13	-0.943	27.10	0.877
2005	8.5E+14	3.20E+13	-1.089	27.10	0.861
2006	9.27E+14	3.28E+13	0.883	32.04	0.858
2007	1.02E+15	3.70E+13	3.174	31.89	0.904
2008	1.16E+15	4.40E+13	7.55	30.43	0.906
2009	1.36E+15	5.34E+13	10.29	28.72	0.907
2010	1.58E+15	5.79E+13	0.237	25.85	0.881
2011	1.70E+15	6.04E+13	3.3661	26.29	0.880
2012	1.81E+15	6.61E+13	7.445	26.66	0.911
2013	1.94E+15	6.93E+13	3.254	26.69	0.892
2014	2.072E+15	7.21E+13	1.144	25.38	0.873
2015	2.17E+15	7.45E+13	3.0463	22.87	0.886
2016	2.29E+15	7.47E+13	0.911	25.800	0.872
2017	2.47E+15	8.049E+13	3.633	25.801	0.877
2018	2.53E+15	8.53E+13	5.866	25.805	0.920

Table 1.1: Data used to estimate the shadow economy's size

A brief comparative table will be presented in order to highlight the significance of the numerical values of the independent variables (GDP, inflation rate, and expenses to GDP) that are used for the determination of the total currency demand in Lebanon. In this table, we will compare Lebanon's average GDP to other Arab countries, which are Egypt and the United Arab Emirates, for the period between 1998 and 2018. Egypt represents a weak economy, which is similar to that of Lebanon, whereas the United Arab Emirates (UAE) represents a strong economy.

The data are accessible on the World Bank's Open Data website. To make a clear comparison, the GDP is calculated in US Dollars and not LCU (Local Currency Units). The GDP in each given year is converted to US Dollars according to the official exchange rate in that year.

	Lebanon	Egypt	United Arab Emirates
GDP (USD)	32960980218	1.80112E+11	2.52132E+11
Inflation rate	2.69	9.62	4.49
Expenses to GDP (%)	27%	28.65%	4.91%

Table 1.2: Independent variables' comparative table

One could notice that Lebanon has the lowest GDP and this might be justified since Lebanon is a small country facing difficult political, social, and economic conditions. On the other hand, the United Arab Emirates has the highest GDP. In fact, many factors contribute to the UAE's robust economy, including the country's strategic location, strong financial reserves, and large sovereign wealth fund. These factors also include promising investor home economies, consistent government spending, in addition to free zones, and increased foreign direct investment. The inflation rate in Lebanon is the smallest among the three countries. As for the government expenses to GDP, Lebanon and Egypt have the greater share. Hence, the combinations of the three independent variables will provide varying signals concerning the cash holdings of the economic agents in different circumstances. Based on the Currency Demand Approach (CDA), the shadow economy in Egypt constituted a major portion of official GDP until the mid-1980s and then this tendency decreased thereafter. However, it settled on average between 20%-15% of GDP starting in the early 90s. The shadow economic activity rose in Egypt in the aftermath of the 2011 revolution reaching 21% of GDP (Hassan and Schneider 2016). Within the same approach, the results indicate that the size of the underground economy in the UAE grew significantly on average of 10.34% of the GDP over the study period extending from 1991 to 2010 (Gamal and Dahalan 2015).

The procedure described by Ahumada et al. (2007) was applied to measure the size of the shadow economy. In addition, the two-stage least squares (TSLS) analysis was carried out on Eviews to estimate the total currency demand. The results are shown in table 1.3.

Coefficient	value	Std. Error	t-Statistic
$\ln A$	-16.58469	10.75517	-1.542020
β	1.003531	0.325120	3.086651
γ	-43.97555	12.84848	-3.422262
α	43.36911	16.42086	2.641099

Table 1.3: Econometric estimation, the first version

The residuals are normally distributed with a Jarque- Bera probability of 0.585. The residual diagnostic results obtained after applying the Breusch-Pagan-Godfrey's test related to heteroscedasticity showed that the probability value for observed R-squared is 0.661. Subsequently, this indicates the absence of heteroscedasticity. Another alternative estimation was carried out using equation (1.3.10) with a β value of 1. The results of the econometric estimation obtained from the equation are shown in table 1.4.

Coefficient	value	Std. Error	t-Statistic
$\ln A$	-18.22045	10.71641	-1.700237
β	1.022913	0.323948	3.157647
γ	-44.71129	12.80218	-3.492475
α	47.80347	16.36168	2.221673

Table 1.4: Econometric estimation, the second version

The residuals are normally distributed with a Jarque-Bera test corresponding to 0.673. The Breusch-Pagan-Godfrey's test of heteroscedasticity revealed that the probability value for observed R-squared is equal to 0.668 and indicated the absence of heteroscedasticity. The information in table 1.3 and table 1.4 contributed to the establishment of table 1.5 for the annual estimates of the Lebanese shadow economy from 1998 to 2018.

The econometric estimations developed from tables 1.3 and 1.4 resulted in a β value that is close to 1. Such a value of β shows the income elasticity of the demand for money. It also validates the assumption that the velocity of circulation is the same for hidden and registered sectors.

EViews was used to calculate the total currency demand for the years 1998 to 2018. The difference between the money supply (M3) provided by the Central Bank of Lebanon and the total currency demand, which represents the excess amount of currency, was also evaluated with this software. M3 values were used in the research because they comprise all the foreign (e.g. United States Dollar) and domestic currencies (e.g. Lebanese pound) used in Lebanon.

The direct estimation of the size of the Lebanese shadow economy in table 1.5 was obtained by multiplying the excess amount of currency by the velocity of circulation. The total currency demand was calculated using TSLS on Eviews. The logarithmic scale of the first difference estimator was applied to convert the GDP for the years 1998 and 2018 from non-stationary data into stationary data.

The velocity of circulation was assessed by dividing the GDP by the money supply (M3). The value obtained represents the size of the Lebanese shadow economy, which is an approximate percentage of the GDP.

Years	Shadow economy % GDP
1998	36.87
1999	40.36
2000	29.26
2001	35.16
2002	33.67
2003	30.42
2004	30.20
2005	31.99
2006	29.57
2007	28.23
2008	34.81
2009	39.81
2010	31.84
2011	36.11
2012	38.25
2013	34.27
2014	34.24
2015	38.94
2016	34.15
2017	36.98
2018	36.61

Table 1.5: Annual estimates of the Lebanese shadow economy

The enormity of tax evasion constitutes an important indicator of the weakness of the Lebanese government in collecting taxes. The Lebanese Center for Policy Studies (2018) has provided an estimate of the amount of evaded taxes in Lebanon, which totaled between 1.13 billion USD in 2015 (2.28% of GDP) and 5 billion USD (10% of GDP) in 2015. Such a fiscal evasion gap is nearly equivalent to Lebanon's budget deficit. Therefore, according to this assumption and based on the budget deficit's report (2019) of the Lebanese Ministry of Finance, we will determine the share of the tax evasion from the total shadow economy presented in table 1.5 for the period between 2010-2018. The budget deficit was determined numerically by multiplying the mentioned percentages in table 1.6 by the GDP values in table 1.1. In order to

calculate the shadow economy numerically the percentages in table 1.5 were multiplied by the GDP values in table 1.1. Therefore, the budget deficit's numerical values were divided by the shadow economy's numerical values in order to obtain the tax evasion's rate of the shadow economy indicated in table 1.6.

Years	Budget deficit (% GDP)	Fiscal evasion gap (Billions of LBP)	Shadow economy (Billions of LBP)	Tax evasion's share of the shadow economy
2010	7.47%	4.32E+12	1.84E+13	23.46%
2011	5.923%	3.57E+12	2.18E+13	16.40%
2012	8.429%	5.62E+12	2.55E+13	22.03%
2013	8.901%	6.28E+12	2.42E+13	25.97%
2014	6.162%	4.48E+12	2.49E+13	17.99%
2015	9.1%	6.85E+12	2.93E+13	23.36%
2016	9.4%	7.26E+12	2.63E+13	27.53%
2017	8.6%	6.92E+12	2.97E+13	23.25%
2018	11%	9.39E+12	3.12E+13	30.04%

Table 1.6: Tax evasion's rate of the shadow economy

1.4 Discussion

Lebanese shadow economy, as in any other country, includes legal and illegal transactions (Lippert and Walker 1997). These activities led to the occurrence of high levels of unemployment, rampant corruption, and a stagnant economic environment. The obstacles preventing the reduction of the size of this underground economy must be controlled to mitigate its negative impact on diverse sectors in the country. The major challenges that must be addressed include the illegal border crossings between Lebanon and Syria, the Syrian workers' crisis, the growth of the informal public sector in the country, the unemployment rates, the domestic workers' file and the tax evasion issues.

A precise border between Lebanon and Syria has never been fully demarcated (Kaufman 2004). The Lebanon-Syria borders report (2011) indicated that Lebanon's borders were defined, demarcated, and delimited under the French Mandate in 1920. However, upon achieving independence from France after World War II, Lebanon and Syria never established a formal boundary that separates the two states. These borders have been considered as smuggling passages. The Lebanese government issued border-crossing restrictions for Syrians crossing into Lebanon. This in turn led to the movement of refuge seekers shifting towards illegal smuggling. The problem of smuggling in Lebanon is harmful to the economy. The obstacle lies in its nature that is difficult to estimate accurately. Lebanon is losing millions of dollars yearly due to the smuggling of goods to Syria through illegal border crossings while Lebanon's public and foreign debts keep accumulating. The treasury loses much needed customs, income tax and VAT revenues. The smuggled items generally include oil derivatives, drugs, in addition to the arms and weapons. Moreover, smuggling consists of an illicit trade of a variety of basic goods. This in turn is severely harming competition in Lebanon as these goods are often sold at much lower prices than local products. In addition, the high number of Syrian refugees in Lebanon has led to the rise in the Syrian workers' crisis. Fakhri (2016) revealed that the strong linkages between Lebanon and Syria that are based on the bilateral agreement on Economic and Social Cooperation and Coordination have made Lebanon vulnerable to the aftermath of the Syrian crisis. Correspondingly, Lebanon has continued to experience a decrease in its economic activities. The post-2011 period, which marked the outbreak of war in Syria, caused a shift in the Lebanese economic fundamentals. The real GDP growth rate decreased significantly from an average of 5.4 % during the 2000-2010 pre-crisis period to 1.9 % during the 2011-2016 post-crisis period (Sumpf et al. 2016). A recent World Bank report (2017) documents that the population of Lebanon in the year 2016 raised from 4.5 million to 5.9 million due to the influx of Syrian refugees. The high participation of Syrian workers, who are under the age of 15 years and have lower education levels, and the lack of formal job creation in the Lebanese economy has forced most of the

refugees to belong to the shadow economy. These events caused an increase in the growth rate of the labor force, which is 35 % faster than the average growth rate of the Lebanese population. Furthermore, the high presence of Syrian refugees accompanied by the financial facilities granted by the local and international NGOs promoted the establishment of many companies between the years 2011 and 2014. The presence of a high level of cash holdings led to an increase in the size of the underground economy. Furthermore, more than 36.4% of the employees in Lebanese public institutions such as military, civilian, and educational organizations are informal workers. According to the World Bank (2011), 66.9% of such employees do not have access to social or retirement benefits. As a result, they do not enjoy any type of coverage against work accidents. These factors motivate these individuals to engage in the activities of the hidden economy. Unemployment and self-employment workers are similar to these employees of public organizations regarding their impact on the shadow economy. Moreover, the high percentage of unemployed and self-employed individuals in the Lebanese population has fostered the growth of the shadow economy. Most of the jobs created in Lebanon do not require skilled labor for production activities. Migrant workers often carry out these jobs due to the relatively high skills of Lebanese workers and their reservation wages. A vast reservoir of untapped human resources, coupled with limited job creations in the private sector, has led to the rise in the number of employees, who engage in unproductive and subsistence-level activities in the shadow economy. Besides, 11.6 % of all households in the Lebanese capital have hired a domestic worker in 2010, most of whom lived in the residence of the employer (Fakih and Marrouch 2014). With the end of the Lebanese civil war (1975-1990), Syrian and Arab domestic workers were gradually and promptly replaced by foreigners from areas beyond the Middle East (Jureidini and Moukarbel 2004). Today, the majority of household workers come from Asia and Africa. Moreover, 97 % of the 118000 foreign domestic workers who lived in Lebanon in 2010 were women, most of whom came from Ethiopia (27 %), the Philippines (25 %), Bangladesh (20 %), Sri Lanka (11 %), Nepal (10 %), and Madagascar (3 %) (Fakih and Marrouch 2014). If informality labor relations are defined on the

criterion of the worker's registration in the national social insurance system (Alloush et al. 2013), the labor relations between Lebanese employers and foreign domestic workers in Lebanon appear to constitute a hybrid system. On the one hand, foreign domestic workers in Lebanon have an elementary accident and health insurance. On the other hand, they are not enrolled in a pension fund, enjoy no job protection, and are not entitled to social benefits (Directorate of General Security 2017). At the same time, the process of hiring a foreign domestic worker is regulated by the state in a very bureaucratic manner. In fact, the employer who in most cases selects the worker via an agent must register as a "sponsor" in a contract that has to be certified by a notary public. An average domestic worker can earn as much as 150 dollars a month. Despite the little income, workers send back the money to their country in order to help their needy and destitute families. However, the domestic workers' remittance process affects their countries' economy. In 2008, the Philippines had 13% of its GDP as a direct result of foreign remittances sweeping in the country. In 2007, Sri Lanka, which is another major workforce contributing state received 3.4 billion dollars in remittance. As well, the entire Sub-Saharan African region has received 7 billion dollars from workers who sent back money they have earned ¹. According to IMF (2019) Lebanon had the third-highest debt-to-GDP ratio in the world. Public debt is expected to increase to 155 % of GDP by the end of 2019. The fiscal deficit increased significantly, reaching 11 % of GDP in 2018, up from 8.6 % of GDP in 2017. The taxes evaded in Lebanon include income taxes, VAT and custom duties, Electricity of Lebanon revenues, and property taxes. The increase in this fiscal evasion has been attributed to the absence of strict controls on tax collection. Improvement in the collection of existing taxes are required in order to reduce the necessary future increase in tax rates.

¹Few rights, low pay for 200 000 migrant domestic workers. The New Humanitarian. 2008-06-22. Retrieved 2019-07-17

1.4.1 Proposals

According to the International Labor Organization ², the expression "shadow economy" comprises an enormous variety of forms across and within economies. Workers in the shadow economy are not recognized, registered, regulated nor protected under labor legislation and social protection. This phenomenon is related to the economic context, the legal, regulatory and policy frameworks. In fact, it's also related to some micro level determinants such as low level of education, discrimination, poverty and, as mentioned above, it pertains to lack of access to economic resources, property, financial and other business services and to markets. Some measures need to be undertaken to facilitate transitions to formality. Actually, a large shadow economy has a negative impact on enterprises, public revenues, government's scope of action, soundness of institutions and fair competition.

Indeed, there has been a rise in the development of economic empowerment initiatives that aim to increase the access of refugees to productive resources in Lebanon. However, most of these initiatives contribute to the growth and expansion of the shadow economy. Given this, it is crucial to establish and disseminate clear standards that will coordinate the implementation of these initiatives and guarantee the protection of migrant workers and the rights of the host country. Since the lack of public services for employees entrains the development of the unofficial economy, labor standards must be established to introduce the bargaining and moral power of Lebanese workers and improve working conditions. The Lebanese civil society organizations must cooperate with the existing labor bodies to create an organizational framework that represents the interests of the workers and the state to enhance the opportunities of employees. Similar initiatives should be applied in order to control the smuggling or the illegal trade on the border crossings between Lebanon and Syria. The success in combating this phenomenon will depend on the collaboration of all stakeholders. Concerning the growth of the informal public sector in the country and the domestic workers'

²ILO portal on the informal economy

file, formalization is required in order to include these activities to the official economy. Formalization allows us to standardize and regulate this behavior. It is also an attempt to make structure of relationships more visible and explicit. As well, it contributes to the elaboration formal documents that can be supervised by the authority. Weick (2001) asserts that formalization is a framework of roles, rules, procedures that configured activities and authority relations. It also seeks to reduce and absorb complexity and ambiguity (Carson et al. 2006). As for the tax evasion issue, the increase in its the occurrence in Lebanon is associated with a low institutional quality, a lack of quality services, corruption, and waste of resources in the country. Therefore, a political decision must be made to ensure the equal application of tax laws to all citizens. This decision must be accompanied by the provision of essential services on which the citizens pay taxes in order to enhance their confidence in the state. The issues of tax morale should be considered for the improvement of tax compliance. In fact, the willingness of citizens to pay taxes depends on their tax morale. According to Frey et al. (2002), there is a correlation between tax morale and the relationship of the citizens with the government. The existence of positive relationships between the government and citizens fosters tax morale and the willingness of individuals to pay their levies. However, a high degree of trust and political influence must exist between the taxpayer and the state. Such relationships are crucial for the proper functioning of society. Numerous economic reports have shown that it is difficult to estimate the number of institutions and individuals who evade authorization and tax payment as well as the amount of money that is concealed from the state treasury. Among larger informal firms, the time, fees, taxes, and inspections that registering involves also matter regarding their decision to remain informal. Actually, this indicates a propensity to opt out of the formal sector as a mechanism to escape policy enforcement. About 72 % of informal owners report that they do not register their firm because they see no real benefits to registration. Informal firms in Lebanon choose to opt out of the formal economy in order to fall below the radar screen of enforcement authorities given the low opportunity cost of informality (World Bank 2016). Tax evasion has caused a

massive loss of treasury imports in Lebanon. The country must eliminate or reduce this phenomenon by proposing fundamental solutions to the problem. One of the available measures lies in the establishment and issuance of new laws that deter violators and reduce their impact on society is one of the available measures. In Lebanon, we notice the absence of the culture of deterrence within laws that are developed to combat tax evasion. Historically, penalties for tax evasion are available under specific articles in the law³ that was approved by the Ministry of Finance. Although additional law ⁴ was proposed to guarantee more tax payment, however it has not been implemented by the country. Sanctions must be imposed on individuals who violate tax laws. The social justice system must also prosecute and punish those who refuse to pay taxes to the government. The social contract obligates citizens to pay taxes in order to enable the state to provide essential services to society. The full payment of taxes by all taxpayers will increase the state's income by at least 1 billion USD a year. This will automatically contribute to higher state imports and will reduce the budget deficits and the state's due debt.

It will be assumed that the government applies one of the proposed solutions, like the control of the tax evasion to reduce the shadow economy. We will suppose an increase of the GDP by no more than 10% for the same period 1998-2018.

Following the approach developed by Ahumada et al. (2009), table 1.7 shows the new estimate of the total currency demand based on the modification of the GDP and the velocity of money circulation.

³ Article 108 of the Income Tax Law and the Legislative Decree 15683

⁴ The vote on law 442008

Years	M3	GDP	Inflation rate (%)	Expenses to GDP (%)	Velocity
1998	4.51E+14	2.87E+13	4.017	26.17	0.89
1999	5.09E+14	2.88E+13	0.81	28.05	0.79
2000	5.65E+14	2.891E+13	-2.087	30.51	0.80
2001	6.12E+14	2.92E+13	-1.525	29.009	0.84
2002	6.44E+14	3.17E+13	4.921	28.352	0.91
2003	7.30E+14	3.33E+13	1.581	30.472	0.87
2004	8.11E+14	3.50E+13	-0.943	26.864	0.88
2005	8.5E+14	3.56E+13	-1.089	26.853	0.86
2006	9.27E+14	3.65E+13	0.883	31.675	0.86
2007	1.02E+15	4.12E+13	3.174	31512	0.90
2008	1.16E+15	4.84E+13	7.55	30.43	0.908
2009	1.36E+15	5.88E+13	10.29	28.72	0.910
2010	1.58E+15	6.37E+13	0.237	25.85	0.884
2011	1.70E+15	6.66E+13	3.361	26.29	0.803
2012	1.81E+15	7.33E+13	7.445	26.66	0.914
2013	1.94E+15	7.77E+13	3.254	26.69	0.895
2014	2.072E+15	8.008E+13	1.144	25.83	0.876
2015	2.17E+15	8.28E+13	3.0463	22.87	0.889
2016	2.29E+15	8.49E+13	0.911	25.80	0.875
2017	2.47E+15	8.85E+13	3.633	25.801	0.88
2018	2.53E+15	9.39E+13	5.86	25.805	0.92

Table 1.7: Modified GDP and velocity of circulation values with the same inflation rate and incentives

The same procedure described by Ahumada et al. (2009) was used to estimate the new value of c_t in equation (1.3.10), and the outcomes were displayed in table 1.8. A Jarque-Bera test revealed a normal distribution of residuals with a value of 0.187. According to the results of the test of Breush- Pagan- Godfrey's for heteroscedasticity, the probability value for observed R- squared is 0.774, which indicates the absence of heteroscedasticity.

Coefficient	value	Std. Error	t-Statistic
$\ln A$	-13.15458	12.52619	-1.050167
β	1.006531	0.374496	2.687694
γ	-32.92486	14.58646	-2.257221
α	28.11302	18.5051	1.519203

Table 1.8: Econometric estimation, the third version

The currency demand during the periods 1998 to 2018 was calculated with the modified values of the GDP and total currency demand. The difference between the money supply (M3) provided by Central Bank of Lebanon and the obtained total currency demand was multiplied by the modified velocity of circulation to estimate the size of the shadow economy in table 1.9.

Years	Shadow economy % GDP
1998	35.28
1999	40.62
2000	34.99
2001	32.79
2002	32.55
2003	31.27
2004	30.59
2005	32.45
2006	31.12
2007	28.90
2008	33.60
2009	37.08
2010	31.44
2011	34.82
2012	35.68
2013	33.16
2014	33.53
2015	36.44
2016	33.51
2017	35.42
2018	34.21

Table 1.9: Modified annual estimates of the Lebanese shadow economy

A comparison of the calculations with the real data shows that the size of the shadow economy decreased over the period between 1998 and 2018 from 36.61% to 34.21%, while the GDP increased by 1 to 2 points. The y axis represents the percentage of the shadow economy to GDP while the x axis depicts the years 1998 to 2018.

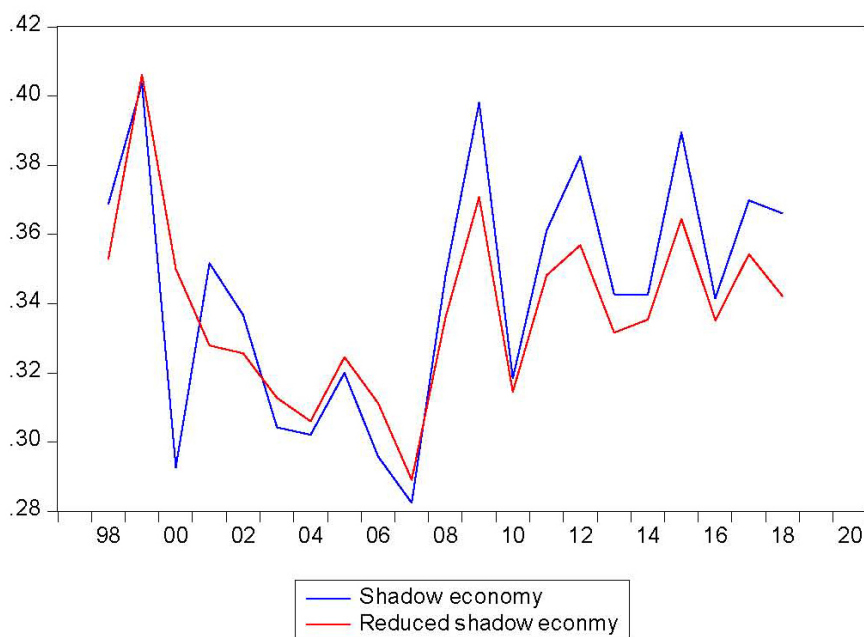


Figure 1.3: Comparison of the estimated size of the shadow economy obtained from the real and the proposed data

The trend in figure 1.3 indicates that an increase in the GDP representing the registered income, results in a decrease in the difference between the money supply (M3) and the total currency demand. Consequently, the size of the shadow economy is decreasing.

1.5 Shadow economy forecasts for Lebanon 2020

The country encounters several social issues, not to mention the macroeconomic and politic challenges. The massive influx of Syrian refugees has negatively affected the country's demographic balance and labor market. Furthermore, it is exercising a pressure on the costs of rent, public services supply and infrastructure (IMF 2014). The 'waste crisis', which begun in 2015, is yet to be resolved as garbage continues to pile up along the Mediterranean Sea. Unemployment rates have skyrocketed following the

inflow of Syrian refugees. In this sense, they are competing with Lebanese workers in the underground sectors. This issue could hit over a quarter of the workforce (IMF 2016). The situation has worsened since October 2019. As the movement has led to the loss of hundreds of thousands of jobs, the closing of many companies, and the increase of poverty rate (Le Borgne and James 2016). In 2019, the already worrying economic situation in Lebanon worsened, which in turn raised fears of a collapse of the country. Since the economy slowed down and transfers of Lebanese migrants and bank deposits declined, the state has become over indebted and lacks liquidity. In order to raise funds, the government has decided to impose a tax on Internet calls like WhatsApp. This in turn has triggered the biggest uprising the country has ever witnessed in a decade. Subsequently, Prime Minister was forced to resign. According to IMF (2019), public debt increased continually, and reached more than 155% of GDP in 2019. Moreover, it is expected to reach 161.8% of GDP in 2020. The already high budget deficit has deteriorated and reached -13.7% of GDP in 2019. Actually, it is expected to rise to -12.7% of GDP in 2020. Furthermore, the current account deficit increased to represent -26.4% of GDP in 2019. With regard to inflation, it slowed from 6% in 2018 to 3.1% in 2019. In addition, GDP growth that amounted to 0.2% in 2019 should only slightly increase to 0.9% in 2020. The real estate, construction and tourism sectors that constitute the engines of growth in Lebanon have come to a halt. Even worse, the banking sector, which has so far been admired for its resilience, has proven to be fragile, revealing worrying prospects for growth. However, the Covid-19 pandemic surpassed many wars because of its implications. It led to the closing of bars, restaurants and entertainment centers across the tiny Mediterranean region. It's a gut punch for the economic sector at a time where Lebanon is already mired in the worst financial crisis in its history. Lebanon has suffered in recent years from a lack of economic growth, high unemployment rates and a drop in hard currency inflows from abroad. But the financial crisis erupted after nationwide protests overflowed the country in October 2019 as a result of the widespread corruption and decades of mismanagement by the ruling political class. That in turn has led to bank closures and

crippling capital controls on cash withdrawals and transfers. Subsequently, fears about depositors' savings in US dollars raised. The local currency lost up to 60% of its value on the dollar on the black market. In light of these circumstances, the World Bank projected 0.2% negative growth in 2020 before the protests began in October. However, recent estimates suggest the contraction in the country's economy could be more than 1% of GDP. About half of Lebanon's population could end up living below poverty levels (World Bank 2019). In this section, we will forecast estimation of the shadow economy for 2019 and 2020 using the same monetary approach. We will resort to the World Bank and the IMF forecasts in order to determine the total currency demand, values for the GDP, the inflation rate and the government expenses with respect to GDP. The data used for the estimation of the size of the shadow economy in Lebanon for 2019 and 2020 is shown in table 1.10.

Years	M3	GDP	Inflation rate (%)	Expenses to GDP (%)	Velocity
2019	2.52E+15	8.61E+13	3.1	26.60	0.72
2020	2.53E+15	8.69E+13	2.6	26.65	0.72

Table 1.10: Forecasted GDP, inflation rates, velocity of circulation and incentives

The same procedure described by Ahumada et al. (2009) was used again to forecast the new value of c_t in equation (1.3.10), the following outcomes were obtained:

Coefficient	value	Std. Error	t-Statistic
$\ln A$	-14.7156	10.4450	-1.408
β	1.005	0.342577	2.935
γ	-31.9284	14.05179	-2.27
α	34.4387	15.63621	2.202

Table 1.11: Econometric forecasted estimation

A Jarque-Bera test revealed a normal distribution of residuals with a value of 0.686. According to the results of the Breush- Pagan- Godfrey test for heteroscedasticity, the probability value for observed R- squared is 0.644, which indicates the absence of heteroscedasticity. The currency demand for the periods 2019 and 2020 were displayed after the modification of the GDP and total currency demand values that were forecasted by the IMF and the World Bank. Therefore, the difference between the money supply (M3) provided by Central Bank of Lebanon and the obtained total currency demand was multiplied by the modified velocity of circulation to estimate the size of the shadow economy in table 1.12.

Years	Shadow economy % GDP
2019	48.33
2020	47.15

Table 1.12: Forecasted shadow economy estimation for 2019-2020

A comparison of the calculations with the previous real data shows that the size of the shadow economy will increase in 2019 and 2020. The expansion of the shadow economy is justified by the contraction of the GDP. The collapse of the economy after October 2019 revolt, the devaluation of the Lebanese currency in the black market in addition to the emergence of Covid-19 drove the Lebanese toward no employment in most sectors. In fact, Lebanese depositors are struggling with informal capital controls in banks due to the dollar scarcity in the country. However, the Lebanese residents rush to buy US dollars in the black market to fulfill their payments and meet their needs. The run on the US dollars has led to a dramatic decrease in the value of the Lebanese currency on parallel and black markets. On the other hand, the United States sanctions on Syria push people towards more smuggling transactions. Actually, subsidized goods like the wheat, fuel and some other basic items that were purchased by the Lebanese government with foreign currency and sold at a discount to the Lebanese people are trafficked to Syria. Hence, the raise of the unemployment rate and the devaluation

of the Lebanese currency coupled with the must of affording the basic needs of the individuals will push them to a greater extent toward the underground or the shadow economy that includes legal and illegal activities.

1.6 Conclusion

The main objective of this chapter was to estimate and analyze the size and impacts of the shadow economy in Lebanon using the monetary approach. Nevertheless, some of the assumptions of this approach, may add an element of bias to the data interpretation and outcome. They include the consideration that all payments in the shadow economy are made in cash, and that the velocity of circulation in observed and hidden sectors are the same. Medina and Schneider (2018) provide data for Lebanon from 1991 to 2015. The average value for Lebanon during that period was 31.58 % of the GDP with a minimum percentage of 24.63% in 2010 and a maximum percentage of 36.68 % in 1991. The latest value from 2015 is 29.16 %. Our estimates using the monetary approach during the period 1998 to 2018 reached a percentage of 36.61% of the GDP. In fact, the shadow economy includes numerous types of legal and illegal actions, monetary and non-monetary transactions (Lippert and Walker 1997). Tax evasion is one of the well-known illegal monetary transactions. It constituted a main support to the growth of the shadow economy in Lebanon. The findings documented in this chapter indicate the existence of a large shadow economy in Lebanon and a large tax evasion's share of this shadow economy that reached 30.04% in 2018. The increase in cash transactions has been attributed to the illegal border crossings between Lebanon and Syria, the Syrian and the domestic workers' files, the informal public sector and the tax evasion topic; all of which constitute the main issues encountering the shadow economy in Lebanon. Moreover, the prediction of the shadow economy size for 2019 and 2020 showed an enlargement of this phenomenon. The Covid-19 epidemic, the October 19 revolt and the devaluation of the Lebanese currency are the main factors

leading to an enlarged shadow economy. Lebanon has been struggling with containing the virus and has progressively moved toward a national lockdown, which led individuals to miss their day-to-day revenue. Besides to its influence on the initial ill-structured social protection policy and a miserable healthcare system, the 'self-imposed lockdown' has added tension on weak groups and those who are at higher risks of falling under poverty lines. Along with the impact of illegal capital control, salary cuts, and dismissals, the lockdown deeply threatens the livelihoods of informal workers, daily wage earners, salaried employees, self-employed workers, and their households. Most informal workers such as seasonal laborers, construction and agricultural workers, migrant and domestic workers, as well as the self-employed, unemployed, and retirees remain unprotected. According to CAS's 2018-2019 Labor Survey ⁵, 44% of residents do not benefit from any form of social protection. Consequently, people took the streets chanting: "Rather die from Covid-19 than from hunger".

This chapter also documents recommendations that will help the national authorities in Lebanon reduce the size of the shadow economy. The adoption of the proposed arrangements contributes to the disposal of the traditional sectarian patron-client relations. Else, the situation will lead to an increased dependence on services provided by sectarian organizations. Subsequently, this would further weaken the bonds between citizens and the government. In fact, the various aspects of the underground economy and the numerous factors supporting this unobservable economic phenomenon require a favorable background. This encouraging background comprises all the features of a weak and corruptible system where the choice of belonging to the shadow economy is more promising than belonging to formal economy for an economic agent. Among multiple aspects that affect the shadow economy, the tax system is considered as one of the main causal variables influencing the growth of this phenomenon (Schneider 2002, 2012).

⁵Lebanon's Central Administration for Statistics (CAS) have published nationally representative statistical data on the conditions of work in the country for 2018-2019

In order to recognize the useful tools for government to control some of the shadow economy's aspects, the next chapter will shed the light on the bribe's impact on tax evasion decision and on economic growth in a capital accumulation model (Caballé and Panadés 2007).

Chapter 2

Bribe's Impact on Tax Evasion and Economic Growth in Lebanon

Abstract

Bribe, accepted by tax auditors to the benefit of tax evaders, is introduced in a capital accumulation model to analyze its impact on the economy in general and the number of undeclared incomes in particular. It is shown that if fines are imposed on evaded taxes, the evaded amount per individual decreases when the tax rate increases. In addition, if the fines are levied on concealed incomes, evasion increases when the tax rate increases. It is revealed that the government's adopted fiscal policy is the key factor defining the taxpayer behavior not the bribe. Growth implications and numerical simulations are provided to show the contribution of the bribe in the decrease of the individual's capital accumulation and the reduction of the government's budget which both lead to a smaller economic growth.

Key words: tax evasion, bribes, Lebanon, government spending.

JEL codes: H26, E62, O41.

2.1 Introduction

Corruption is defined as the use of public office power for personal benefit. Corruption in Lebanon is widespread and permeates all levels of Lebanese society. Pervasive clientelism is at the core of the country's political system which makes political corruption and nepotism Lebanon's most serious corruption challenge with regard to corruption (Wickberg 2012). Furthermore, sociological and cultural factors such as customs, family pressures and traditional values of tributes to leaders constitute potential sources of corruption that have found acceptance in the social psyche and behavior (Brownsberger 1983). Since its declaration of independence in 1943, Lebanon has been ruled according to confessional power-sharing agreements that run through all levels of government and society in Lebanon. These agreements created a rigid political system that is based on the search for a compromise between all political elites. In their turn, these elites use the patronage networks resulting from the consociational structure to advance their interests. Consequently, this behavior further undermines further the country's governance system (Lebanese Transparency Association 2011). Transparency International's 2019 Corruption Perception Index ranks Lebanon as the 137th most corrupt country in the world, out of the 183 assessed countries and territories assessed. Lebanese citizens also perceive corruption as an increasing problem. They are also pessimistic about the ability of the government to fight corruption. Regardless of their religion, social status, location, political affiliations or wealth are unwilling to change the present system. The reason does not lie in their ignorance of its consequences, but because they have developed a stake in maintaining it (Yacoub 2005).

Corruption exists in numerous forms and is practiced in various methods. Bribery used for tax evasion is one of the commonly practiced corruption methods. It alters the effectiveness of government expenditure and reduces the quantity of output provided by the state (Shleifer and Vishny 1993). Much of the previous works on corruption focused primarily on bribes that entrepreneurs must pay bureaucratically to avoid regulations or to arrange for deals that would increase their profits at the expense of the public

benefits. Evidence shows that large fractions of the budgets allocated to public school investments (Reinikka and Svensson 2004) in addition to physical capital infrastructure (Tanzi and Davoodi 1997, Pritchett 2001, Olken 2007) are diverted to the private use. Later on, the impact of the bribe on tax evasion decision and its implications on the economic growth in Lebanon will be more deeply developed in this chapter using the capital accumulation model. Since it is defined as a fraud committed against the government (Cowell 1990), tax evasion occurs when an individual or business entity willfully and intentionally falsifies information on a tax return to limit the amount of tax liability. In order to predict the amount of tax evasion and its effect on the national economy, many theories have been developed, most of which determine the mentioned evasion as a high-risk decision taken by offenders (Arrow 1970). However, the economic growth will be affected by these decisions and it, in turn, it affects the general resources allocated to finance the government. Allingham and Sandmo (1972) are among early economists who explained that an uncertain behavior is the base of tax evasion and they developed some theories regarding the subject in question. In this regard, various works of literature concerning tax evasion issue identified the effect(s) of tax evasion on economic development. For instance, Allingham and Sandmo (1972) presented a dynamic model that comprises evasion in order to analyze the impact of the independent auditing process. Eichhorn (2004) showed that tax evasion has no implications on economic growth rate in an endogenous growth model where stochastic theories are employed to derive the rate of economic growth. Bethencourt and Kunze (2015) did not only prove how a higher tax rate can increase tax evasion but also provided reasons that prevent taxpayers from evading even if the gamble is profitable. Feige (1986,1989, 2009) studied the implications of unreported tax from different angles. Numerous articles explained the correlation between corruption and economic growth. Although the World Bank and International Monetary Fund (IMF 2019) presume corruption has significantly adverse effects on economic growth, however many studies are revealing unsettled arguments and mixed results. For instance, some theoretical studies suggest that corruption may counteract government failure and promote economic growth in

the short run in view of the exogenously determined suboptimal bureaucratic rules and regulations. Since government failure is itself a function of corruption, however, corruption should have detrimental effects on economic growth in the long run (Akai et al. 2005). Bribe offered by tax evaders for guaranteeing tax evasion is one of the most commonly practiced corruption forms (Shleifer and Vishny 1993). Tax evasion is a part of the shadow economy, which corresponds to 33.8% of the Lebanese GDP (Schneider et al. 2010). The World Bank (2019) approximated the Lebanese fiscal evasion gap to represent 11.5% of the GDP in Lebanon. Although tax evasion alters the effectiveness of state expenditure and reduces the quantity of output provided by the state (Shleifer and Vishny 1993), however it might ensure a higher private capital accumulation to the individuals, which in turn promotes underground activities (Medina and Schneider 2017). Much of the previous works on corruption focused primarily on bribes paid bureaucratically to avoid regulations or to arrange for deals that would increase their profits at the expense of the public benefits (Joulfaian 2009). The impact that the bribe accepted by tax auditors has on tax evasion decision and its implications on the economic growth in Lebanon will be more deeply developed in this chapter using the capital accumulation model (Caballé and Panadés 2007).

The model of Caballé and Panadés (2007) was developed without the existence of the bribe and while considering that the government spending is unproductive. This model adopts Barro's (1990) assumption concerning a productive government spending and admits the existence of bribe, in order to shed the light on the significant elements that affect the private capitals and influence the optimal fiscal policy design in Lebanon. After presenting the introduction of this chapter, section two develops the model, while section three explains the connection between tax rate and fiscal fraud in cases where fines are levied on evaded taxes and on unregistered income. Moreover, section four presents the growth implications, and finally section five concludes the chapter.

2.2 Model Development

In this model, y represents the total income of an individual, x is the reported one, $p \in (0, 1)$ is the possibility of audit. Moreover, $\tau \in (0, 1)$ is the tax rate on income, $\tau(y - x)$ is the evaded amount of tax, while $\eta \in (0, 1)$ stands for the probability of bribe acceptance by government tax auditor, and θ is the bribe in the form of percentage of amount of penalty. $(1 - \eta) \in (0, 1)$ corresponds to the probability of revelation of the fraud by the tax auditor and payment of the proportional penalty π by the tax evader. Finally, t represents time in years. Figure 2.1 summarizes the model's structure.

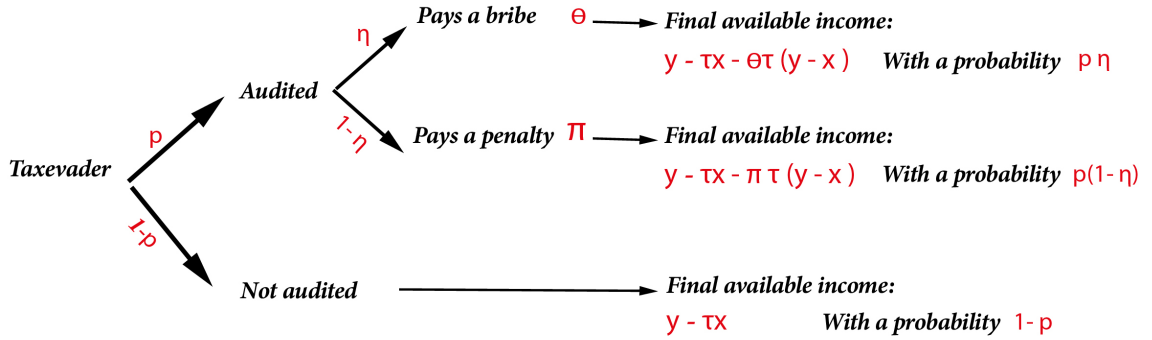


Figure 2.1: Model's development structure

Hence, the final available income for consumption is defined as a random variable that can be calculated as such:

$$\begin{cases} y - \tau x - \pi \tau (y - x), & \text{with a probability } p(1 - \eta); \\ y - \tau x - \theta \tau (y - x), & \text{with probability } p\eta; \\ y - \tau x, & \text{with a probability } 1 - p \end{cases}$$

The amount of income hidden from tax authority is defined by $e = y - x$. Therefore, the final available income is $(1 - \tau)y + e\tau\tilde{h}$, where \tilde{h} is a random variable with probability function, and it can be represented as follows:

$$f(h) = \begin{cases} p(1 - \eta), & \text{for } h=1 - \pi \\ p\eta, & \text{for } h=1 - \theta \\ 1 - p, & \text{for } h=1 \\ 0, & \text{elsewhere} \end{cases}$$

Direct calculation of $E(\tilde{h})$ leads to $E(\tilde{h}) = 1 - p\pi + p\eta(\pi - \theta)$ where:

$$p[\pi(1 - \eta) + \eta\theta] < 1$$

A condition $E(\tilde{h}) > 0$ confirms the occurrence of tax evasion. For individuals that are lying on the interval $[0, 1]$, the net production function of capital accumulation model is $y_t = AK_t^{1-\lambda}g_t^\lambda$ with $A > 0$ (Barro 1990). Here y_t is the net output, and K_t is the amount of capital that was obtained by a certain person during period t , while g_t is the government's budget constraint designated for financing the government spending, and λ represents the rate of productivity of government spending, and is considered to be a scalar $0 < \lambda < 1$. Incomes that persist after the intake, tax payment, and potential penalization or bribes constitute the net investment of an individual i . These incomes are added to the asset K_t , which belongs to the individual i , whereas K_{t+1} is the sum that is owned during the next term. Therefore, the budget constraints of the audited taxpayer can be described as dependent on the individual's decision, whether he pays a bribe to the tax agent or a penalty to the tax authority.

In case the individual pays the penalty, then the budget constraint will be as follows:

$$AK_t^{1-\lambda}g_t^\lambda - \tau x_t - \pi\tau[AK_t^{1-\lambda}g_t^\lambda - x_t] = c_t + [K_{t+1} - K_t] \quad (2.2.1)$$

In the other case, where the individual pays to bribe, the budget constraint is represented as such:

$$AK_t^{1-\lambda}g_t^\lambda - \tau x_t - \theta\tau[AK_t^{1-\lambda}g_t^\lambda - x_t] = c_t + [K_{t+1} - K_t] \quad (2.2.2)$$

While the budget constraint of a non-audited individual is the following:

$$AK_t^{1-\lambda}g_t^\lambda - \tau x_t = c_t + [K_{t+1} - K_t] \quad (2.2.3)$$

The budget constraint of the government is considered as the sum of the collected taxes and penalties that are allocated to finance government spending g_t . The budget constraint is defined as follows:

$$g_t = \tau\bar{x}_t + \pi\tau(\bar{y}_t - \bar{x}_t)$$

Where $\bar{y}_t = \int_0^1 y_t$ and $\bar{x}_t = \int_0^1 x_t$ represent the total sum of net output and declared incomes that are made respectively during term t .

The figure 2.2 shows the Budget expenditures' distribution (MOF 2019). One could notice that about 39% of the expenditures are devoted to the public sector workers, while a proportion of 32% is conserved to serve the debts. Moreover, a percentage of 13% is consecrated for miscellaneous expenditures. This illustration shows that a limited category of the Lebanese taxpayers is taking most of the paybacks from the government spending. Nevertheless, the budget government is financed by a percentage of 76.39% from tax revenues and 23.61% from non-tax revenues (MOF 2018). In fact, the Lebanese tax system relies in greater proportion on indirect taxes in greater proportion. The reason is that they are easy to collect and hard to evade. However, the direct taxes rely mostly on the income tax and property tax. Accordingly, a comparative table will be set up based on the World Bank open access data. It aims at providing a better view on the difference between Lebanon and other Arab countries. This table focuses on the share of taxes on income, profits and capital gain of the total

CHAPTER 2. BRIBE'S IMPACT ON TAX EVASION AND ECONOMIC GROWTH IN LEBANON

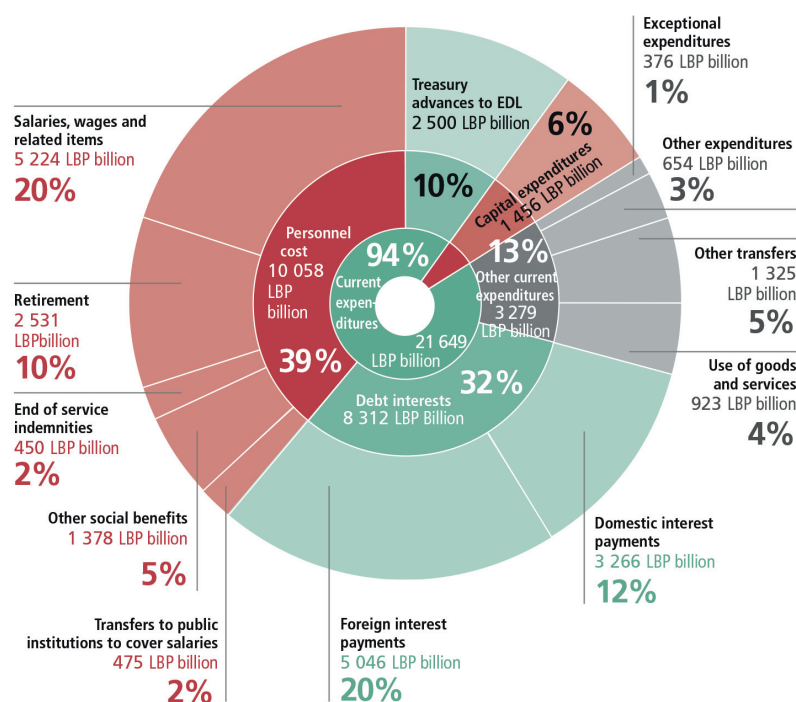


Figure 2.2: Lebanese government's budget expenditures

tax revenue. Its time period is set out between 2010 and 2018 for Lebanon, Egypt and the United Arab Emirates (UAE).

Taxes on income, profits, capital gains (% Tax revenue)	
Lebanon	14.82%
Egypt	13.12%
UAE	0.205%

Table 2.1: Comparative table for taxes on income, profits and capital gains

Compared to other Arab countries, the percentage of taxes on income, profits, capital gains to the total tax revenue is the highest in Lebanon. However, based on figure 2.2, we can notice that the main beneficiaries from the government distributions are the public sector employees and the debtors. In fact, the Lebanese government is failing to provide necessary public services to households. As a result, Lebanon's public

administration is viewed as a corrupted sector in the eye of its citizens (Transparency International 2011). Lebanon's government and economy are dominated by a small number of individuals, who controlled access to individual sectors and exerted strong influence on the distribution of resources through clientalist practices (World Bank 2015). Hence, families have become more reliant on their own capacities. Consequently, and in order to meet their needs individuals shall maximize their utility function of consumption defined by $u(c_t) = \ln c_t$, see Caballé and Panadés (2000, 2007). As well, a comparative table will be organized to show the percentage to GDP of the household consumption in Lebanon, Egypt and UAE for the same period.

Households' consumption (%GDP)	
Lebanon	87.581%
Egypt	81.517%
UAE	36.67%

Table 2.2: Comparative table for households' consumption

The consumption behavior is an indicator that shows the manner in which people deal with their income in order to fulfill their needs according to their preferences and the availability of resources (Witt 2011). Households' consumption in Lebanon remained concentrated on primary products at the expense of non-essentials. Table 2.2 indicates that the Lebanese households' consumption is the highest among the three mentioned Arab countries. This, in fact, confirms to which extent the Lebanese households are relying on their own capacities.

The individual's hidden profit during some period is:

$$e_t = AK_t^{1-\lambda}g_t^\lambda - x_t$$

Like Caballé and Panadés (2007), we can use the preceding calculations of budget constraints (2.2.1), (2.2.2), and (2.2.3) to identify the law of capital flow per capita:

$$k_{t+1} = \begin{cases} (K_t + (1 - \tau)AK_t^{1-\lambda}g_t^\lambda - c_t + \tau(1 - \pi)e_t, & \text{for } p(1 - \eta) \\ (K_t + (1 - \tau)AK_t^{1-\lambda}g_t^\lambda - c_t + \tau(1 - \theta)e_t, & \text{for } p\eta \\ (K_t + (1 - \tau)AK_t^{1-\lambda}g_t^\lambda - c_t + \tau e_t, & \text{for } 1 - p \end{cases}$$

Or equivalent to:

$$K_{t+1} = K_t + (1 - \tau)AK_t^{1-\lambda}g_t^\lambda - c_t + \tau\tilde{h}e_t \quad (2.2.4)$$

The stochastic dynamic problem, which is experienced by a person i , can be described with the Bellman equation:

$$V(K_t) = \text{Max}_{(c_t)} \{ \ln c_t + \beta E_t[V(K_{t+1})] \} \quad (2.2.5)$$

Here, $\beta \in (0, 1)$ is the discount factor and E_t is the conditional expectation that is estimated according to the known information at the onset of period t . The value function for this problem can be obtained as an affine transformation of the logarithmic function (Caballé and Panadés 2007):

$$V(K_t) = D \ln K_t + G \text{ with } G \text{ as a constant and } D > 0 \text{ (Hakansson (1970), Caballé and Panadés (2007)).}$$

Accordingly, application of the equation (2.2.4) together with computation of the conditional expectation corresponds to:

$$E_t[V(K_{t+1})]$$

The optimization problem experienced by the individual i , who owns K_t at the start of period t , becomes:

$$\begin{aligned} & \text{Max}_{c_t} \{ \ln c_t + \beta (D[p(1 - \eta)\ln(m_t - c_t + \tau(1 - \pi)e_t) \\ & + p\eta\ln(m_t - c_t + \tau(1 - \theta)e_t) + (1 - p)\ln(m_t - c_t + \tau e_t)] + G) \} \end{aligned} \quad (2.2.6)$$

Where the variable m_t is the after-tax wealth resources of an honest taxpayer:

$$m_t = K_t^{1-\lambda}[K_t^\lambda + (1 - \tau)Ag_t^\lambda] \quad (2.2.7)$$

By differentiating equation (2.2.6) with respect to c_t and e_t , the following first order conditions for the problem become the following:

$$\frac{1}{c_t} = \beta D \left[\frac{p(1 - \eta)}{m_t - c_t + \tau(1 - \pi)e_t} + \frac{p\eta}{m_t - c_t + \tau(1 - \theta)e_t} + \frac{1 - p}{m_t - c_t + \tau e_t} \right] \quad (2.2.8)$$

$$\frac{p(1 - \eta)(\pi - 1)}{m_t - c_t + \tau(1 - \pi)e_t} + \frac{p\eta(\theta - 1)}{m_t - c_t + \tau(1 - \theta)e_t} = \frac{(1 - p)}{m_t - c_t + \tau e_t} \quad (2.2.9)$$

Solving the system (2.2.8) and (2.2.9) for c_t and e_t in the former two equations results in:

$$c_t = \frac{1}{1 + \beta D} m_t \quad (2.2.10)$$

$$e_t = \frac{\beta D[w \pm \alpha]}{(\beta D + 1)\tau(1 - \theta)(1 - \pi)} m_t \quad (2.2.11)$$

Where m_t is given by equation (2.2.7) with w and α being:

$$\begin{aligned} w &= -2 + (\pi + \theta) + \pi p(1 - (\eta + \theta)) + \eta p \theta \\ \alpha &= (\pi^2 - 2\pi^2 p - 2\pi\theta + \theta^2 + \pi^2 p^2 - 2\eta p \theta^2 - 2\pi^2 \eta p^2 - 2\pi^2 p^2 \theta + 2\pi p \theta + \pi^2 \eta^2 p^2 + \\ &\pi^2 p^2 \theta^2 + \eta^2 p^2 \theta^2 + 2\pi^2 \eta p - 2\pi p \theta^2 + 2\pi^2 p \theta + 4\pi \eta p \theta^2 + 2\pi \eta p^2 \theta - 4\pi^2 \eta p \theta - 2\pi \eta p^2 \theta^2 - \\ &2\pi \eta^2 p^2 \theta + 2\pi^2 \eta p^2 \theta)^{\frac{1}{2}} \end{aligned}$$

Collection of the coefficients of $\ln K_t$ after application of c_t and e_t in the Bellman equation (2.2.5) and in $V(K_t) = D \ln K_t + G$ is followed by $D = \frac{1}{1 - \beta}$.

Substitution of D in (2.2.10) and (2.2.11) ends at:

$$c_t = (1 - \beta)m_t \quad (2.2.12)$$

$$e_t = \frac{\beta[\omega \pm \alpha]}{\tau(\theta - 1)(\pi - 1)}m_t \quad (2.2.13)$$

Equation (2.2.13) helps us understand evasion decision made by individuals and establish its impact on economic growth depending on individuals' capitals.

Actually, in order to understand the impact of the bribe on the Lebanese taxpayers' decision, our simulations on Matlab took into consideration parameters with values that correspond to the Lebanese case. For instance, the probability of bribe acceptance η will be considered as 40% since the Transparency International (2019) indicates that Lebanon has the highest overall bribery rate (41%). In addition, the government's rate of productivity λ will be set at an average of 25%. According to the World Bank (2019) data, the value of the Lebanese government's expense to GDP range from 22.8% to 30.8% during the period 1998 to 2018. Probability of auditing p is assumed to be 30% or 40% since the process of tax collection in Lebanon is more reliant on indirect taxation. Moreover, θ will be considered 40% of the penalty. Logical values for the variables were used in the simulations. For instance, $\pi > 1$ (Caballé and Panadés 2007) and the aggregate capitals are greater than the government spending $k > g$. An adjustment with the constants β and A was made to make the growth rate γ hit the real value of economic growth in Lebanon for the period between 2010-2018 (see appendix 2.7).

2.3 Evasion Decision

2.3.1 Proportionality of Fine to Evaded Taxes

According to the Lebanese fiscal code, if the tax enforcement agency inspects evaders, the total sum of unreported income will be discovered. Our model is consistent with the assumption of Caballé and Panadés (2007) regarding such cases. The taxpayer is

obliged to compensate a fine at the flat rate $\pi > 1$, which is applied to the evaded sum of taxes. However, if the agent accepts the bribe, the total sum of unreported incomes will not be perceived. In turn, the taxpayer should pay a bribe with the fee $\pi > \theta > 0$.

Since the derivative of e_t in equation (2.2.13) with respect to the tax rate τ is smaller than zero, application of the law that sets fines for tax fraud results in the decrease of tax evasion with the tax rate. This conclusion is in line with calculations of Caballé and Panadés (2007) and Yitzhaki (1974). In other words, individuals will face the likelihood of being caught, this in turn is associated with the payment of a penalty that is defined by the tax rate. To avoid this risk, evaders can pay a bribe that corresponds with the cost of the fine. Therefore, an increase in tax rate leads to the raise of both the penalty and bribe since the bribe's amount is a proportion of the penalty. Hence, the risk-averse individuals will choose to evade less in order to avoid costs.

2.3.2 The Imposition of Penalties on Unreported Income

In Lebanon, numerous unjustified reductions and exceptional exemptions are attributed to the evaders. This creates a situation where the penalty is not proportional to the evaded taxes. Due to this, an increase in the tax rate makes honesty more expensive, while the cost of evasion remains unchanged. Under this assumption, we will replace $\pi\tau$ with $\hat{\pi}$ in equation (2.2.13). It should be mentioned that the consumption policy in equation (2.2.12) is not affected by this alternative assumption concerning the structure of fines.

For such case, we will consider $1 > \hat{\pi} > \tau$, where $\hat{\pi} = \pi\tau$ due to independence of penalty rate from the tax rate τ , and we'll assume that $\pi > 1$, otherwise evaders won't be punished (see Caballé and Panadés 2007). If we substitute $\pi\tau$ by $\hat{\pi}$ in equation (2.2.13), we reach the following equation:

$$e_t = \frac{\beta[-2\tau + (\hat{\pi} + \theta\tau) + \hat{\pi}p(1 - (\eta + \theta)) + \eta p \theta \tau \pm \hat{\alpha}\tau]}{\tau(\hat{\pi} - 1)(\theta - 1)} K_t^{1-\lambda} [K_t^\lambda + (1 - \tau)A g_t^\lambda] \quad (2.3.1)$$

Where $\hat{\alpha}$ is deduced from α by replacing π by $\frac{\hat{\pi}}{\tau}$.

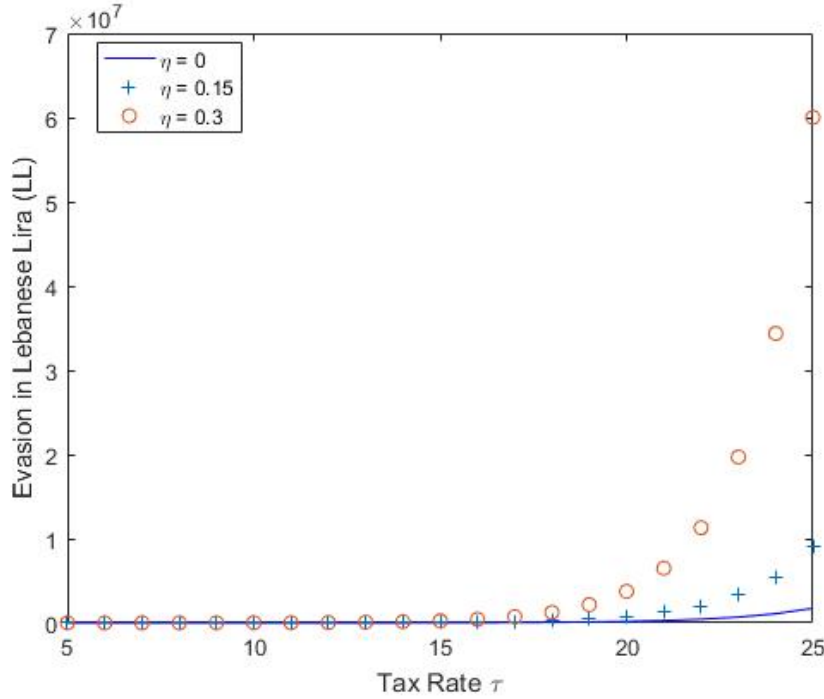


Figure 2.3: Individual's evasion decision with respect to the tax rate and the bribe acceptance

Figure 2.3 provides us with an outcome similar to that of Caballé and Panadés (2007) and Sandmo (2005) and proves that a raise of the tax rate stimulates the taxpayers to evade more. As for a Lebanon, government's spending rate of productivity $\lambda = 0.25$, probability of auditing $p = 0.3$, and the proposed amount of bribe is 40% of the penalty imposed on the tax evaders. According to these data illustrated in figure 2.3, one could notice that the evasion decision is increasing with the probability η of accepting bribe by a tax auditor. Evasion decision for $\eta = 0.3$ is higher than evasion decision for $\eta = 0.15$ and for $\eta = 0$. In other words, the individual is adopting the same behavior whether the probability of bribe acceptance is $\eta = 0$ or $\eta \neq 0$. As well, evasion is growing exponentially. The taxpayer will choose to evade once the fine

represents a forfeit that is not proportional to the evaded tax amount. Nevertheless, the exponential function indicates higher evasion levels due to the bribe existence.

The outcomes in sections (2.3.1) and (2.3.2) go in line with the results of Caballé and Panadés (2007). However, this chapter refers to the bribe as an additional variable. Therefore, we can deduce that -in a model where individuals are risk-averse- the bribe existence is not the factor inducing taxpayers to evade. In fact, the key element defining the taxpayers' behavior is the government's fiscal policy. In other words, if the tax authority applies the law and imposes the penalties proportionally to evaded taxes, individuals will choose to declare despite the presence of bribe. Nonetheless, taxpayers will continuously evade if the penalty is a forfeiture that is not proportional to the evaded amount of taxes.

The next section is devoted to the growth implications in cases where the tax rate varies.

2.4 Growth Implications for Variable Tax Rate

2.4.1 Fines Proportional to the Evaded Taxes

In order to analyze the impact of the varying tax rate τ on the economic growth for different rates of government productivity λ as in Caballé and Panadés (2007), we start by calculating the aggregate amount of capital in period $t + 1$.

As previously mentioned, \bar{K}_t is the total sum of capital that persists after the tax payment and the potential penalization or bribes.

$$\bar{K}_{t+1} = \bar{K}_t + (1 - \tau)A\bar{K}_t^{1-\lambda}g_t^\lambda - \bar{c}_t + \tau\tilde{h}\bar{e}_t$$

$$\bar{K}_{t+1} = \bar{K}_t^{1-\lambda}[\bar{K}_t^\lambda + (1 - \tau)Ag_t^\lambda] - \bar{c}_t + \tau\tilde{h}\bar{e}_t$$

The rate of growth γ of aggregate capitals satisfies:

$$\gamma = \frac{\bar{y}_{t+1}}{\bar{y}_t} - 1 = \frac{A\bar{K}_{t+1}^{1-\lambda}g_{t+1}^\lambda}{A\bar{K}_t^{1-\lambda}g_t^\lambda} - 1 = \frac{\bar{K}_{t+1}^{1-\lambda}g_{t+1}^\lambda}{\bar{K}_t^{1-\lambda}g_t^\lambda} - 1$$

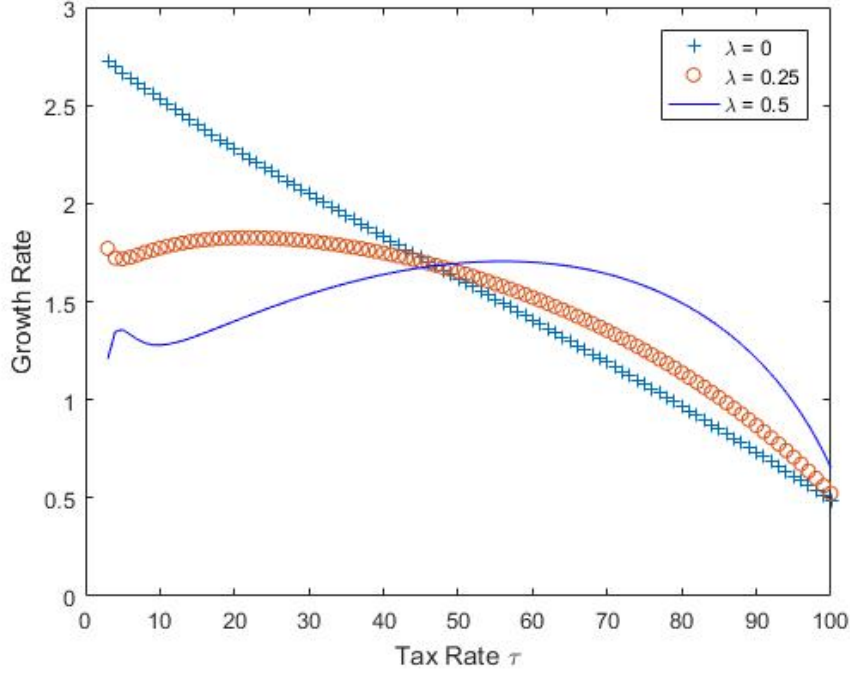


Figure 2.4: Growth rate with different productivity rate λ for varying tax rate τ

In order to analyze the impact of the varying tax rate τ on the economic growth, we will refer to the simulations on Matlab and define them as follows: we will consider the probability of auditing $p = 40\%$, the probability of bribe acceptance $\eta = 40\%$ and the given bribe's amount θ as 40% of the penalty. Figure 2.4 shows that the economic growth is higher for the low level of productivity λ when the tax rate is realistic (lower than 40%). Once the tax rate increases remarkably, economic growth is higher for the highest productivity rate of $\lambda = 0.5$. Therefore, when the tax rate is realistic, the capital K_t represents the driving factor of the economy. The government's budget g_t that is financed from tax and penalties' collections has a weak impact on the individuals' incomes. This shows a decreasing economic growth for a decreasing λ . However, as for high tax rates, the government's budget becomes more substantial thanks to the high tax and penalties' collections. In return, the budget's government affects the economic growth at a higher rate than individuals' capitals.

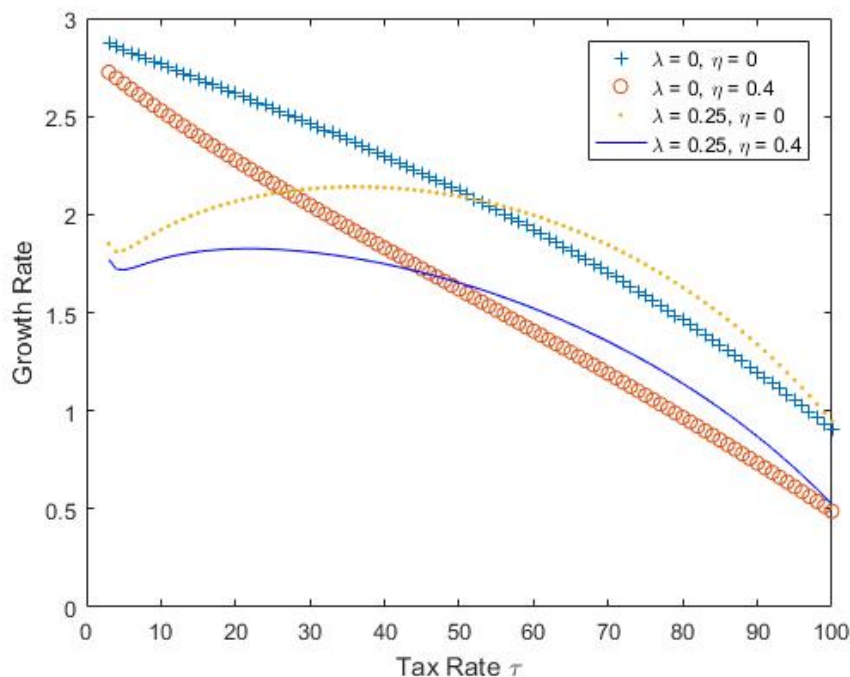


Figure 2.5: Growth rate for varying tax rate with different productivity rate λ and different probability of bribe acceptance η

To better understand the impact of the bribe in this model, figure 2.5 shows that the acceptance of bribe by the corruptible auditors reduces the individuals' capital accumulation for a non-productive government spending $\lambda=0$. The growth rate for $\lambda=0$ and $\eta=0$ is bigger than the growth rate for $\lambda=0$ and $\eta=0.4$. As well, it is shown that the bribe's existence is reducing the government's resources. If we consider a productive government spending to be $\lambda=0.25$, the economic growth will be better when η is equal to zero than when η is equal to 0.4. Figure 2.5 indicates that the economic growth is better for a high tax rate when the government spending becomes productive. This implies that when the government returns become larger, the productivity rate of the government's budget affects the economic growth at a higher rate than individuals' capitals. Nevertheless, the reduction of tax evasion and the generation of additional resources to the productive government's budget will better promote economic growth than the imposition of high tax rates. After all, an elevated tax rate might block the individuals' production function (Cowell 1990).

As previously cited, the budget government is financed by a percentage of 76.39% from tax revenues and 23.61% from non-tax revenues (MOF 2018). Tax revenues are defined as the revenues collected from taxes on income and profits, social security contributions, taxes levied on goods and services, payroll taxes, taxes on the ownership and transfer of property, in addition to other taxes. However, non-tax revenues are revenues arising from state-owned enterprises and from public institutions that make profits. Consequently, the control of tax evasion coupled with the non- imposition of added taxes, the generation of additional funds through foreign capitals, and the support of productive sectors such as the agriculture and the industry will increase the private capitals and boost the formal economy. On the other hand, taking loans or accepting donations for the government's budget or even entrusting the miscarried public projects to approved private establishments for a limited period might transform the government's budget into an influential factor that promotes economic growth.

2.4.2 Fines Independent of the Tax Rate

Section (2.3.2) implied that tax evasion is encouraged by higher tax rates when fines are independent of the tax rate. As for Lebanon, the private capitals are the driving factor of the economy. According to Transparency International (2019), Lebanon is the most corrupted country in the region. In addition, the World Economic Forum (2014) classified the Lebanese government spending as a low efficiency one. Actually, the Lebanese political instability has an adverse effect on real government expenditure (Sweindan 2016). Hence, Lebanese taxpayers are not pinning high hopes on their government spending. Evasion related to the possibility of paying bribes to the tax auditors will contribute to a smaller registered capital accumulation and to a littler official economic growth. However, shadow economy will grow broader and might satisfy the Lebanese citizens' needs.

2.5 Capital accumulation model in the current Lebanese context

In this model, government budget g is deemed smaller than the aggregate capital \bar{k} and a set of parameters' values are adopted to reflect a logical outcome that is consistent with the Lebanese scenario. For instance, the government productivity's rate λ was displayed as 0.25 in the simulations since it represented the average of the productive government spending values published by the World Bank open access data.

The probability of bribe acceptance η corresponded to 40% as indicated by Transparency International (2019). In addition, the value of economic growth rate ranges between 1% and 2% and is considered as an average of growth rate γ that is presented by the World Bank Data for the period between 2010-2018. According to IMF (2017) the growth rate indicated a positive change from 2010 to 2017 with an average of 1.5%. However, the IMF predicted that the growth rate would decrease by -1,9% in 2018.

As indicated in the previous sections, the growth rate of aggregate capitals γ satisfies:

$$\gamma = \frac{\bar{y}_{t+1}}{\bar{y}_t} - 1 = \frac{A\bar{K}_{t+1}^{1-\lambda}g_{t+1}^\lambda}{A\bar{K}_t^{1-\lambda}g_t^\lambda} - 1 = \frac{\bar{K}_{t+1}^{1-\lambda}g_{t+1}^\lambda}{\bar{K}_t^{1-\lambda}g_t^\lambda} - 1$$

One could notice that growth rate depends on both, private capitals and government budget. It is presumed that the latter one is financed through tax collection of declared incomes and by levied penalties on evaded taxes. Since October 2019 uprising and the following containment of Covid-19 virus in 2020, Lebanon has progressively moved toward a national lockdown. This in turn has led to the loss of many people's daily revenue. In addition to its impact on an already ill-structured social protection policy and a starved healthcare system, the self-imposed lockdown has placed an added strain on vulnerable groups and people who are at higher risks of falling under poverty lines. Along with the burden of illegal capital control, salary cuts, and layoffs, lockdown deeply threatens the livelihoods of informal workers, daily wage earners, salaried employees, in addition to self-employed workers, and their dependents (Bou Khater

2020). The triple crisis of Covid-19, the Lebanese currency devaluation in addition to the uprising and its repercussions on Lebanese investments justify the negative change in growth rate. In the figure 2.6, an economic forecast for 2019 growth rate will be displayed in accordance with a capital accumulation model within a bribe-included system.

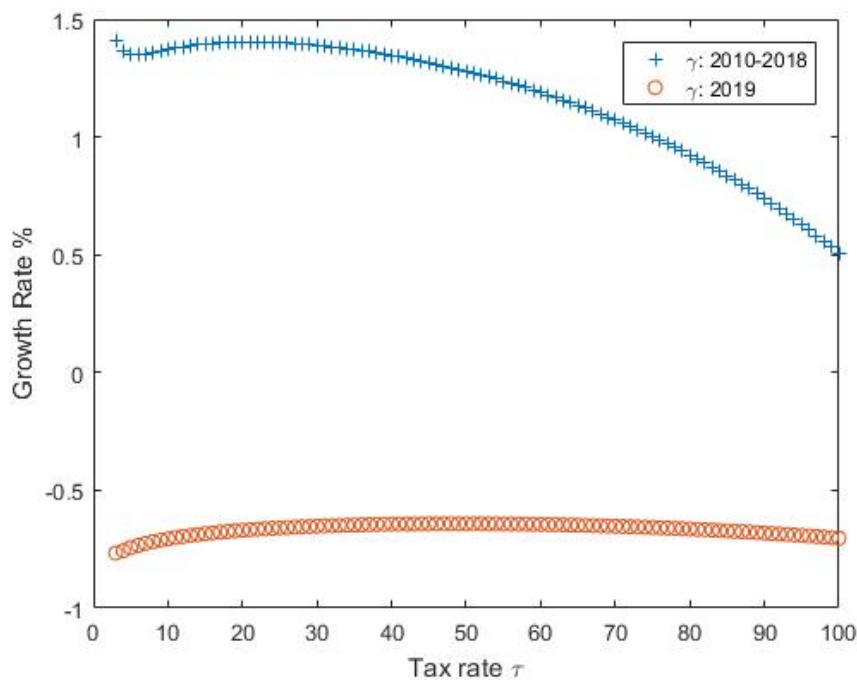


Figure 2.6: Growth rate for varying tax rate in 2018

It must be clarified that a similar behavior of the curves was noticed when the parameters values have been varied in a reasonable fashion in order to represent the growth rate and comply with the Lebanese scenario. Constants A and β were regulators that contributed to the achievement of a realistic outcome. Hence, it will be shown that smaller aggregate capitals combined with lower budget government will lead to an insignificant growth rate. Negative predictions of the 2019 economic growth has prompted us to choose a set of parameters that showcases this reality. In order to ensure that the government budget g is still smaller than the aggregate private capitals with lower values, constants A and β had to be respectively reduced to 1.5 and 0.25. For this scenario, government productivity λ was defined as 0.15 instead of 0.25. This

choice is based on the fact that the government rate of productivity will definitely decrease after the economy's disruption. For the period extending from 2010 to 2018, a positive average of growth rate $\gamma = 1.5\%$ requires higher values for A and β that are respectively determined as 2 and 1.25. Accordingly, for the economic growth to take place in 2020, two criteria must be satisfied: lower A and β that induce a smaller aggregate capitals \bar{K} and lower budget government. This aims at establishing a lower value of the negative economic growth rate. Subsequently, the imposition of additional tax rates on the declared amount of incomes will be insignificant (see figure 2.6).

2.6 Conclusion

Lebanon is presently fronting its worst scal crisis since its independence. The current debt to GDP ratio exceeds 150%, and the Lebanese government has suspended the payment of its Eurobond and announced plans to initiate talks with creditors in order to restructure its entire debt pile. In fact, it's the first step in a broader plan designed to stabilize an economy in a state of crisis (IMF 2019). Lebanon subsidizes flour, wheat, bread. It also subsidizes electricity indirectly. There are VAT exemptions for non-processed food and diesel, health, real estate, educational, financial, insurance and banking services, and the residential property lease. Furthermore, the removal of a portion of consumer subventions and some value-added tax (VAT) exemptions are among the advised solutions suggested by experts. Makdissi and Seif Edine (2020) demonstrated that poorer households would carry large proportion of the burden if a consumption tax were to be imposed on food rather than imposing a consumption tax on fuels and lubricants for personal vehicles. The government opposed an increase in general VAT that would induce a sharp increase in the price of basic food items. Such a hypothesis can be found in Bellemare (2015) who shows that rapid increase in food prices explains the emergence of social conflict. Policy-makers usually avoid such policies and look for strategies that would moderate the impact of increasing food prices specially that a significant part of the Lebanese population suffers from food

insecurity (ESCWA 2016). The Lebanese government declared a considerable scaling up of the National Poverty Targeting Program. According to Bou Khater (2020), this program currently provides benefits to 43,000 of the 150,000 households that applied for it. The policy change would not compensate for a severe increase in food prices for the Lebanese who don't always afford to eat enough nutritious food and who account for 31% of the total population. Makdissi and Seif Edine (2020) developed a study based on previous research on marginal consumption tax reforms. It was shown that the elimination of food subsidies seems to be the worst possible option for policymakers. However, it is possible to keep and extend food subsidies by increasing the general VAT. Furthermore, if the increase in general VAT is not desirable, additional taxes could be applied on fuels and lubricants for personal vehicles in order to finance food subsidies and even decrease VAT.

While diverse guidelines that suggest raising the taxes were presented to confront the fiscal crisis in Lebanon, this chapter proposes additional tools to be considered by the government in order to face the economic decay. Based on the capital accumulation model, this chapter reveals a decrease in the hidden income with the raise of the tax rate in case penalties are levied on evaded taxes. However, in case penalties are imposed on unreported incomes independently of the tax rate, hidden incomes increase with the tax rate (Caballé and Panadés 2007). As well, the tax evasion increases with the bribe acceptance when the penalty is not proportionally imposed to the evaded amount of taxes. However, once the law is applied and the penalty is proportional to the evaded amount of taxes, risk-averse individuals will prefer to declare. This indicates that the government's adopted fiscal policy is the key factor that defines the taxpayer behavior not the bribe. In other words, the government has the choice to be permissive and promote tax evasion or to act firmly and apply the law by imposing the proportional penalty on evaded amount of taxes. Moreover, the facts indicate that the bribe reduces the individuals' capital and the government's budget, which in turn leads to lower economic growth. Here, the fight against corruption through the super-

vision of corruptible tax auditors and their prevention from accepting bribes from tax evaders will be a first step toward supporting the formal economy. It is worth noting that a productive government's budget is an influential factor in economic growth for a high tax rate. However, the individuals' capitals are the driving factor of economic growth for a low tax rate. As for Lebanon, imposing high tax rates on the individuals' capitals will promote tax evasion if the penalties are not proportional to evaded amounts of taxes. As well, levying great fines proportionally to evaded amounts of taxes might block the production function of the individuals for high tax rates (Cowell 1990).

Additional conclusion of this research indicates that tax rate, government's productivity rate, and private capitals represent significant tools for enhancing economic growth. In fact, optimal combinations of these instruments have a remarkable impact on the official and shadow economy. Our results carry an important implication for policymakers. It contributes to the design of an appropriate fiscal policy by providing evidence concerning the tax rate, the bribe acceptance, the government's budget, and the private capitals. Therefore, greater weight should be given to the fiscal policies that respect these financial criteria.

The next chapter will present the favorable institutional atmosphere that might support a fiscal policy aiming to limit the tax evasion and to enhance the formal economic growth.

2.7 Appendix

$\pi(1) = 3$; *penalty bigger than 1*

$\eta(1) = 0.4$; *probability when tax agent accepts bribe*

$c = 4$; *consumption*

$k(1) = 15$; *capital in a system with bribe*

$L(1) = 15$; *capital in a system without bribe*

$A = 2$; *positive value*

$\beta = 1.25$; *positive value*

$D = 1$; *positive value*

$y(1) = 2$; *net output*

$m(1) = 1$; *after-tax wealth resource*

$E(1) = 1$; *evasion*

$g(1) = 1$; *government's budget*

for $t = 1 : 1 : 100$

$\lambda(t) = 0.250$; *government productivity rate*

$\eta(t) = t/100$; *Bribe acceptance probability*

$\tau(t) = 0.2$; *tax rate*

$\tau(t) = t/100$; *tax rate function*

$\pi(t) = 3 + 2\tau(t)$; *penalty function*

$p(t) = 0.4$; *probability of getting audited*

$\theta(t) = 0.4\pi(t)$; *Bribe function*

$w(t) = -2 + ((\pi(t)) + \theta(t)) + (\pi(t))p(t)(1 - (\eta(t) + \theta(t))) + \eta(t)p(t)\theta(t)$;

CHAPTER 2. BRIBE'S IMPACT ON TAX EVASION AND ECONOMIC
GROWTH IN LEBANON

$$\alpha = (\pi^2 - 2\pi^2 p - 2\pi\theta + \theta^2 + \pi^2 p^2 - 2\eta p\theta^2 - 2\pi^2 \eta p^2 - 2\pi^2 p^2 \theta + 2\pi p\theta + \pi^2 \eta^2 p^2 + \pi^2 p^2 \theta^2 + \eta^2 p^2 \theta^2 + 2\pi^2 \eta p - 2\pi p\theta^2 + 2\pi^2 p\theta + 4\pi \eta p\theta^2 + 2\pi \eta p^2 \theta - 4\pi^2 \eta p\theta - 2\pi \eta p^2 \theta^2 - 2\pi \eta^2 p^2 \theta + 2\pi^2 \eta p^2 \theta)^{\frac{1}{2}}$$

$$g(t) = \tau(t)0.4y(t) + \pi(t)\tau(t)0.6y(t); \text{ government's budget}$$

$$y(t+1) = Ak(t)^{(1-\lambda(t))}g(t)^{\lambda(t)};$$

$$m(t) = k(t)^{(1-\lambda(t))} * (k(t)^{\lambda(t)} + (1 - \tau(t))A(g(t))^{\lambda(t)}); \text{ after-tax wealth of an honest individual}$$

$$E(t) = \beta(w(t) - \alpha(t))/(tau(t)(\theta(t) - 1)(\pi(t) - 1))m(t); \text{ evasion}$$

$$k(t+1) = (k(t))^{(1-\lambda(t))} * ((k(t))^{\lambda(t)} + (1 - tau(t)) * A * (g(t))^{\lambda(t)}) - (1 - \beta) * (1 + (1 - \tau(t)) * A) * k(t) + tau(t) * (1 - p(t) * \pi(t) + p(t) * \eta(t) * (\pi(t) - \theta(t))) * E(t); \text{ capital in period } t+1 \text{ with bribe}$$

$$\gamma(t) = y(t+1)/y(t) - 1; \text{ growth rate in a system with bribe}$$

Chapter 3

Institutions and Tax Compliance in Lebanon

Abstract

The chapter proposes an optimal aspect of the inclusive institutional design that seeks to reduce fiscal fraud and to enhance taxpayers' compliance in Lebanon. In fact, public sector development, tax system reform, and tax fraud criminalization represent the prevalent factors that affect Lebanese taxpayers' behavior. Moreover, this part of the thesis sheds light on the probability of auditing that contributes to the detection of more capitals and influences taxpayers' decision. According to the findings, a well-developed legal framework, responsible for the control of the general authorities' performance, creates an ideal environment for economic and social progress. Therefore, a new electoral law coupled with structural reforms, and independent judicial and supervisory bodies, will enhance general authorities' performance. Hence, taxpayers will put more trust in the government and build a new culture that induces them to fulfill their obligations toward tax authorities and raise their level of compliance.

Keywords: Optimal institutions, Reforms, Tax compliance, Tax evasion, Lebanon

JEL codes: E02, H11, H30, H70, K16, K34.

3.1 Introduction

Tax is a financial obligation that is set by the government for legal and natural persons (Tuay and Guvenc 2007). The main function of taxes is to provide assets for the development of commonly used amenities like roads, power supply, permanent water supply, and others commonly used services. Therefore, tax evasion, described as a fiscal fraud, requires an intended action achieved by the taxpayer in order to dodge the law so that he can evade the reimbursement of taxes. Moreover, it can take the definition of the practice of an illegitimate action aiming to reduce the tax responsibilities. The fraudulent activity also includes welfare frauds, which are related to the illegal welfare recipients (Chunn and Gavigan 2004), as it refers to the illegitimate gaining of either money or benefits (McKinney and Johnston 1986). Such activity has a significant impact on society and government, thus it should be persecuted. In fact, the dishonest behavior of taxpayers negatively influences the resources allocated to finance public provisions and it also generates distortion and inequality that hurts honest taxpayers. Such behavior needs government intervention so that fiscal justice would be applied (Ameur and Tkiouat 2012).

Basically, the tax system complexity, the political pressure influencing tax decisions, the economic conditions, the moral considerations of taxpayers in perceiving the policy against fraud, in addition to social norms constitute various reasons for tax evasion decision (Devos 2013). Thus, tax evasion can be regarded as a financial loss of resources for the state. Moreover, it is considered as social action directed against justice and equity, it's also a political act that challenges the legitimacy of power. Subsequently, tax dodge entails several disadvantages. First of all, it misleads accurate statistics, distracts the control of macroeconomic groups and inspires the underground economy. It also raises the level of imbalanced opportunities and blocks the government actions. Moreover, it causes social tensions, weakens the state and the institutions, and discourages investments by rising individuals' risk-aversion (Ameur and Tkiouat 2012). Accordingly, in order to avoid these outcomes, it is necessary to implement an optimal

design of institutions consecrated for the improvement of fundamental interactions between taxpayers and the government. The reason behind it is to enhance fiscal control efficiency, reduce fraud, and enhance economic growth (Acemoglu et al. 2006). Therefore, the prevention of fraudulent activity and tax avoidance requires investigation of institutions and their modification.

In fact, since institutions in most literature are related to culture and beliefs (Alesina and Giuliano 2015), therefore, cultural education may be necessary in order to teach individuals to prefer justice over their interest and to accept fairness (Myerson 2004). Additionally, the system of beliefs and attitudes may constitute grounds for fraudulent activity that have far-reaching consequences. Actually, well-functioning institutions depend on ample state's capacity, which, in turn, depends on bringing the economic activity into the ambit of the formal sector. Thus, an extensive shadow economy limits state's capacity, which may impede institutional development in many ways: it discourages the expansion of the formal sector, limits economic and financial inclusion, and restricts the benefits of a formal economy to relatively few participants. Institutions are the humanly invented restrictions that organize humans' relations. Indeed, they are composed of formal restrictions that include rules, laws, and constitutions, in addition to informal restrictions. Subsequently, behavioral norms, conventions, and self-imposed codes of conduct, as well as their implementation characteristics, are a social fundament for the functioning of institutions (North 1990, Williamson 1975). According to Andrews (2013), informal rules represent the most significant factors of an organization's global performance. And while French and Bell (1999) argue that the formal rules constitute a small part of interactions between tax authorities and citizens, experts concentrate on this topic because they consider it to be more visible and measurable. However, practical institutional design is not enough to ensure harmony and growth since individuals are the decision-makers, not the institutions. Actually, one of the functions of institutions is defined by the creation of paths for well-intentioned policy-makers to attain constructive results and to hinder corrupted

plans. In effect, the weak domestic institutions lead to unequal access to economic opportunities, thereby, they inhibit the freedom of individuals to thrive by using their capabilities and ability for the production of self-valued output. As a result, inadequate work of institutions affects taxpayers' compliance.

Researchers studied tax compliance from an economic, psychological, and sociological point of view thanks to the publication of the Allingham and Sandmo's (1972) research. Their model, which is widely known as the frequent economic approach, is based on the hypothesis of taxpayers' aim to maximize their benefits through the tax evasion. However, the higher tax compliance compared to the expected one cannot be explained by economic studies, which resulted in the analyze of the mediating variable of social impact (Torgler 2003). In reality, low tax compliance is a matter of significant concern in many developing countries because of its limitations regarding the government's capacity to raise revenues for developmental purposes (Robin and Stern 1992). It is commonly acknowledged that a variety of factors lead to this weakness. These factors may include corruption, a large informal sector, weak legal systems, ambiguity in tax laws, high marginal tax rates, in addition to the scarcity of adequate information and accounting systems, a culture of noncompliance, and ineffective tax administration. In fact, there is no universal definition of compliant behavior. Typically, tax compliance is defined as the absence of tax evasion. Sandmo (2005) defines tax evasion as the violation of law that occurs when the taxpayer refrains from reporting taxable income. Therefore, a citizen becomes engaged in an illegal activity that makes him liable to legal action filed by the authorities. Actually, the issue of tax compliance is complicated due to the variety of taxes, and kinds of taxpayers that are involved. The neoclassical approach relies on the assumptions of expected utility theory in order to justify individuals' tax evasion and taxpayers' compliance decisions. In this regard, the mentioned behavior is presented as a risk-involving choice where the perpetrator realizes the probability of being detected and fined. Nonetheless, the classical framework includes more realistic and economic behavior of taxpayers that seeks to explain

the tax evasion. Indeed, Hashimzade et al. (2013) present a systematic account of the various behavioral economic concepts and their application in the field of tax compliance. In this context, two types of approaches were introduced: models based on the non-expected utility theory and models that incorporate social interaction into the traditional framework.

Actually, tax compliance poses a major problem for many tax authorities, who struggle to persuade taxpayers to abide by the law (James and Alley 2002). Reasons for non-compliance can be divided into internal and external factors. Internal factors include the self-perception and taxpayers' beliefs about the right, acceptable, or moral compliant behavior. External factors include the taxpayer's apprehension of the governmental reaction towards tax evasion, the quality of public services, and fairness of state decisions (Torgler 2004). Among others, internal factors comprise trust in the government, a sense of civic virtue, degree of acceptance of ruling party and religious beliefs. They also involve social and demographic factors (Sahbaz and Saruc 2011), the perception of what most people think about the individual, beliefs of taxpayers about actions of others (Cataloluk 2008), the effects of efficient usage of public spending on taxpayers' attitudes and decisions (Alm et al. 1992). Amid significant external factors are the tax injustice, the lack of institutional quality, the complex tax laws (Frey and Torgler 2007), in addition to the permanent tax amnesties (Andreoni 1991), the tax audit inefficiency (Cummings et al. 2009), and the tax penalties and tax exemptions' counter productivity (Ipek and Kaynar 2009). In fact, the overall impact and interplay of these aspects can moderate taxpayers' attitudes. Therefore, taxpayers' behavior can be explained by identifying the interrelation between internal and external factors (Mitu 2016).

Lebanon is considered as one of the 'most democratic systems' in the Arab world. This system is supposed to enhance the political, social and economic equality between the religious and ethnic groups living in the country. The Lebanese political system

is thereby a form of confessionalism in which the highest offices are proportionately reserved for representatives from the different religions. Unfortunately, the political system itself is blocked reforms and created tension in society and between ethical and religious groups especially during the last decade. Thus, it operates in an exclusive pattern rather than inclusive one and fails to perform its basic ideology. The system that is supposed to create equal opportunities is responsible for growing social and economic tensions concerning the dissimilar economic situation between the Shiite, Sunnite and Christian population. In addition, the state institutions became highly unable to act and fulfill its basic responsibilities. Actually, recent surveys and public polls show that Lebanese citizens are disappointed with their tax system and consider the necessity to pay taxes as a burden. Nonetheless, many aspects of the Lebanese tax system are condemned while a considerable lack of understanding of this system prevails among citizens. According to a national survey that was conducted in 2012 by the Finances Institute in cooperation with the World Bank, 70 % of Lebanese people believed that taxes are used directly by politicians for funding their political agendas (World Bank 2018). Therefore, this deficiency in the tax consciousness and knowledge indicates the need for an increase in financial literacy through a suitable educational and public approach. Besides, citizens avoid or deliberately fail to report income because of their poor understanding of the tax law. Moreover, incomprehension of tax rules may result in questioning the fairness of the tax system and may prompt citizens to feel that others gain more benefits. This, in turn, may result in higher rates of tax evasion.

This chapter aims to propose an optimal institutional design that might affect the compliance of Lebanese taxpayers. It emphasizes the importance of trust between citizens and the government in order to develop tax compliance. Moreover, this chapter will indicate that a political, electoral, juridical, and administrative redesign in addition to the educational and cultural adjustments might persuade taxpayers to fulfill their tax obligations. Furthermore, evidence will be displayed concerning the importance

of structural reforms' development that supports the taxpayers' economic conditions and production functions. After the introduction, section 2 determines a general trust scheme that could be applied between the taxpayers and the tax authorities through institutions. Section 3 presents the Lebanese global configuration and the fiscal reality, while section 4 focuses on the development of the Lebanese optimal institutional design in order to reduce the fiscal fraud. Finally, section 5 concludes the chapter.

3.2 Trust Building Scheme through Institutions

Institutions are rules, behavioral norms, and their applications that regulate frequent interaction between people (North 1989). Hence, adequate institutions should be inclusive and characterized by secure property rights, fair law systems, and suitably provided centralized and pluralistic public services (Acemoglu and Robinson 2012). In fact, the optimal institution design that is devised for reducing fiscal fraud encompasses clear laws. These laws protect taxpayer's rights and ensure sufficient resources for the government in order to satisfy the taxpayers. Therefore, this satisfaction could be guaranteed by supplying the needed services and goods and maintaining a standard level of equity and justice so that individuals would be encouraged to declare their real incomes. In order to identify the structure of the optimal institutional design intended for reducing the fraud, analysis of the taxpayers and the government behavior is required. However, the investigation of the economic behavior of only two agents can lead to a misleading definition of the criteria of optimal institution that is destined to control fiscal fraud. Besides, the widely conflicting perceptions and ideals in Lebanon—seen as a community— influence the adequacy of policy instruments and determine the optimal institutional design for fraud decrease. In fact, Cowell (1990) showed that the structure of taxpaying population, the social norms, and the relationships between taxpayers and the state contribute to the description of an optimal strategy aiming to reduce fraud. Therefore, the reciprocal relationship between taxpayers and the state they live in is a critical criterion that must be the core element of optimal institutions.

Taxpayers measure their benefits according to their perception of the services provided in return. Together, well-developed political institutions, stronger social interactions, practical and explicit laws, and well-structured tax system contribute to shape the optimal institutional design that intends to control the fiscal fraud.

Actually, two forms of compliance are distinguished in economic psychology: voluntary and forced one. While forced compliance depends on the perceived power of authorities to prosecute tax evaders, voluntary compliance is based on trust placed in authorities (Kirchler 2007). According to Bornman (2015), trust is a belief about another person's desire to cooperate in order to gain benefits and the refusal to take advantage of the partners' weakness in case a convenient opportunity arises. Therefore, the apprehension of justice, management carried out by authorities, social norms, attitudes towards the government, and knowledge about the tax system are the main aspects that determine trust in tax authority. In addition, numerous studies revealed that voluntary fiscal compliance is related to loyalty towards the government (Torgler and Schneider 2005). With regard to tax compliance, trust between taxpayers and tax authority must be founded on the basis of commitment between citizens and the ruling body. In fact, this section demonstrates that the required confidence-increase scheme begins with the proposal of a well-developed legal framework that redefines the political authorities' performance. Actually, this topic constitutes an essential component of tax compliance since political barriers often represent the critical obstacles that impede reforms (Prichard 2019). Therefore, the legal framework activates the judicial and supervisory bodies, supports public institutions and tax administrations, and guides the structural reforms. Indeed, if an appropriate framework was provided, economic and social environments will be reinforced, and new cultural fundamentals will become a part of the Lebanese society. Therefore, trust and tax morale will prevail and affect tax compliance (see figure 3.1).

In effect, this section is divided into five subsections. Firstly, subsection 3.2.1 launches the legal framework as it introduces the electoral law and tax offense criminalization. Secondly, subsection 3.2.2 presents the political power that influences taxpayer’s compliance. Moreover, subsection 3.2.3 outlines the tax system’s structure that influences the taxpayer’s behavior. While, subsection 3.2.4 sheds the light on the structural and administrative foundations that define the taxpayer’s decisions. Finally, subsection 3.2.5 describes the social interactions, tax morale and educational implications that play a role in building the trust between the taxpayer and the authority.

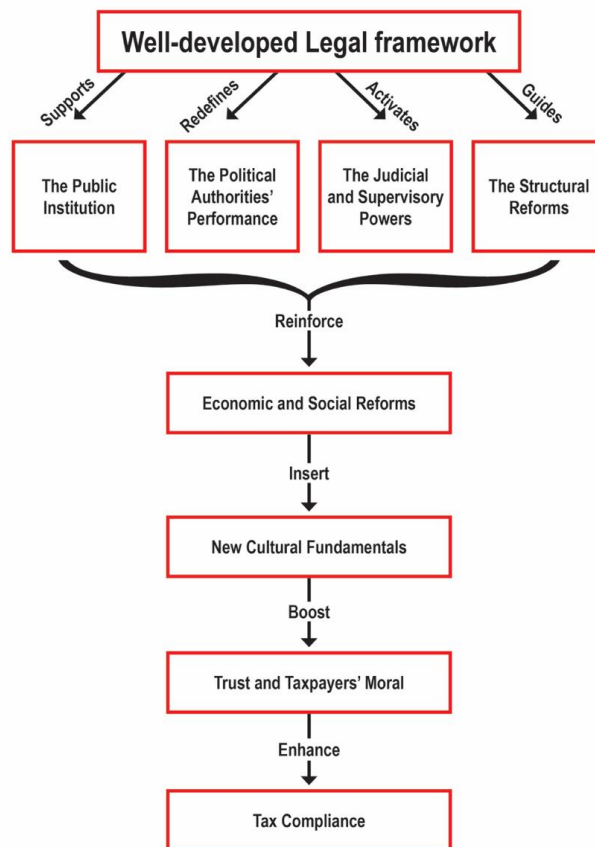


Figure 3.1: Well-structured framework for taxpayers’ compliance

3.2.1 Well-developed Legal Framework

Compliance with the law in the field of prosecution and punishment is an essential component of financial regulations since tax evasion is a crime committed against the government (Cowell 1990). Thus, a robust legal system that is fairly enforced induces citizens to trust the government and its institutions (Tyler 1990). Accordingly, the positive experience related to compliance promotes confidence in the good intentions of others (Levi 1998). Therefore, legislators should clearly express their intentions in the letter of the law because, for the taxpayer, clarity in the application of law defines the level of acceptable enforcement policies. However, since not all individuals share the same preferences, a conflict of interest arises among various groups whereby the political power plays a determining factor (Acemoglu and Robinson 2010). Subsequently, availability of favorable political institutions creates an attractive economic and moralistic environment that supports the legal system. Within this context, designing a legal framework that regulates the relationship of the government with citizens and that of the tax authority with taxpayers is essential for shaping a new fundamental for any state in general and for the Lebanese state in particular. Since the parliament is the authority responsible for lawmaking, therefore trust in its jurisdiction is needed in order to ensure citizens' respect for new regulations and policies. In fact, once society's members choose their trusted deputies, who are supposed to modernize the laws, tax compliance might be improved. The equation of commitment and justice may support this suggestion. Actually, Murphy (2004) states that the feeling of organizational justice is related to trust and acceptance of decisions that were made by the organization. Such approach gained the approval of Levi et al. (2012), whose studies confirmed the existence of a link between procedural justice, trust in authority, and citizens' attitudes. Additionally, that elections influence the credibility of parliament.

Concerning the importance of trust in parliament, elections, defined as citizens' tools for holding representatives accountable (Downs 1957, Riker 1982), are essential for tax compliance. Hence, it is worth mentioning that Lebanese electoral laws were designed to guarantee the access of predetermined political representatives to power. Due to this

fact, it is crucial to make changes in the electoral legislature in order to develop trust in the government and tax authorities. Therefore, a well-structured legal framework that supports tax compliance starts with the election of trustworthy representatives and the criminalization of tax offense. It is essential to establish an electoral law that allows taxpayers who are themselves the citizens to choose their trusted candidates so that they can be well represented in the parliament.

In fact, the next two subsections shed the light on the electoral and tax laws as they are key elements in defining the taxpayers' behavior.

3.2.1.A. Electoral Laws

Regarding Lebanon, all the adopted electoral laws were tailored to provide a specific category of power holders with access to the government in a way that ensures its operation according to the sectarian quota system and the spoils system (Arnous 2018). Consequently, all electoral laws that were adopted in Lebanon - from majoritarian to the proportional system and preferential vote - have paved the way for the traditional political group that supports clientelism in order to have access to power. Due to this property of the electoral system, corruption became an inherited culture. Nevertheless, the legislative transformation should result in the strengthening of the citizens' confidence in the state. Thus, deputies, who represent Lebanese people's ambitions and who seek to guarantee the fulfillment of citizens' rights, should be able to win elections and become a majority in the parliament. Thereby, these changes will promote the compliance of citizens with their liabilities that include the payment of fees and taxes. In general, the constitution of a parliament should represent the people and guarantee the composition of a government based on the idea of the right person in the right place. Indeed, the designation of competent and experienced specialists is required in order to improve the tax system and guarantee the government control over compliant behavior. Since it is described as a tool for reshaping the society in order to fulfill the rights of its members and prompt them to commit to their obligations, the electoral law represents the first step towards founding a state trusted by its citizens.

In fact, the trust in the government is barely distinguishable from public support, confidence, and allegiance. In this regard, Tyler (1990) states that these terms are often viewed in the context of "trust in government". Additionally, this type of trust stems from a perception of the legitimacy of power. In turn, Murphy (2005) describes legitimacy as the acknowledgment of authorities' power by citizens provided that these authorities are capable of performing their duties and are entitled to be obeyed. Moreover, Tyler (2006) supports this idea by adding that legitimacy is a trait attributed to an authority by a population. As well, indicators of legitimacy are general feelings of responsibility and the duty to comply with the law by citizens (Tyler 2006). Bowers and Robinson (2012) describe legal authorities as legitimate when they act impartially, honestly, transparently, respectfully, ethically, and equitably (see figure 3.2).

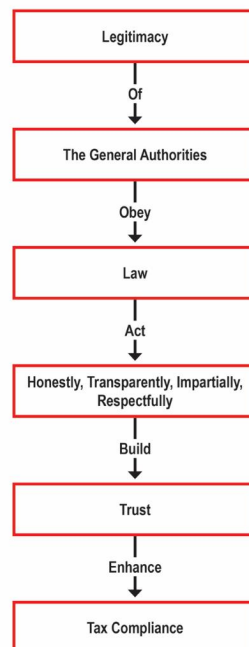


Figure 3.2: Authority's legitimacy impact on tax compliance

3.2.1.B. Tax Offense Criminalization

It must be noted that tax evasion issues result from imperfections, uncertainties, and inconsistencies of tax laws and methods of determination of the taxable income. As well, the current systems are based on poor regulation and insufficient penalties for tax evasion (Miculescu 2015). However, the published guide for fighting against tax crime by the OECD (2017) includes a list of domains that require changes in law. According to the guide, tax crime is a common problem for many countries despite their level of economic development. In this regard, jurisdictions have comprehensive laws that criminalize tax offenses and impose substantial penalties including lengthy prison sentences. Actually, tax crime is intentional conduct that violates tax law (Sandmo 2005). This term is supposed to be broad enough to accommodate the different legal definitions that may apply under domestic law. As well, tax evasion is not yet classified as a crime in the Lebanese law. Hence, Laws that criminalize tax offense are required to promote compliant behavior. Nevertheless, taxpayers remain non-compliant and use a variety of means to evade their tax obligations. Thus, criminal legislation affects those taxpayers whose compliance does not depend on support and monitoring. Moreover, legislations enhance the general preventive effect and reduce fiscal recklessness. In this context, criminalization of tax offenses is one of the most effective measures that contribute to the improvement of tax behavior. Therefore, the availability of a well-designed legal system that is applied with fairness and justice over all the individuals will support the reciprocity's concept and reinforce the state's image in the citizens' consciousness (Allan 1993). The illustration (figure 3.3) summarizes the relationship between the state and taxpayers. Actually, the respect of laws that guide and control the institutions results in the optimal goods and services provided by the government. As a result, the promotion of trust and confidence in government spending, enhancement of economic growth, and generation of revenues stimulate a well-structured tax system. Actually, the latter could maximize taxpayers' utility thanks to an optimal and equitable distribution of the yield. Therefore, promoting responsibility and morality and encouraging taxpayers to behave honestly contributes to the development of a

privileged sense of membership in a society and promotes a candid tax-paying behavior.

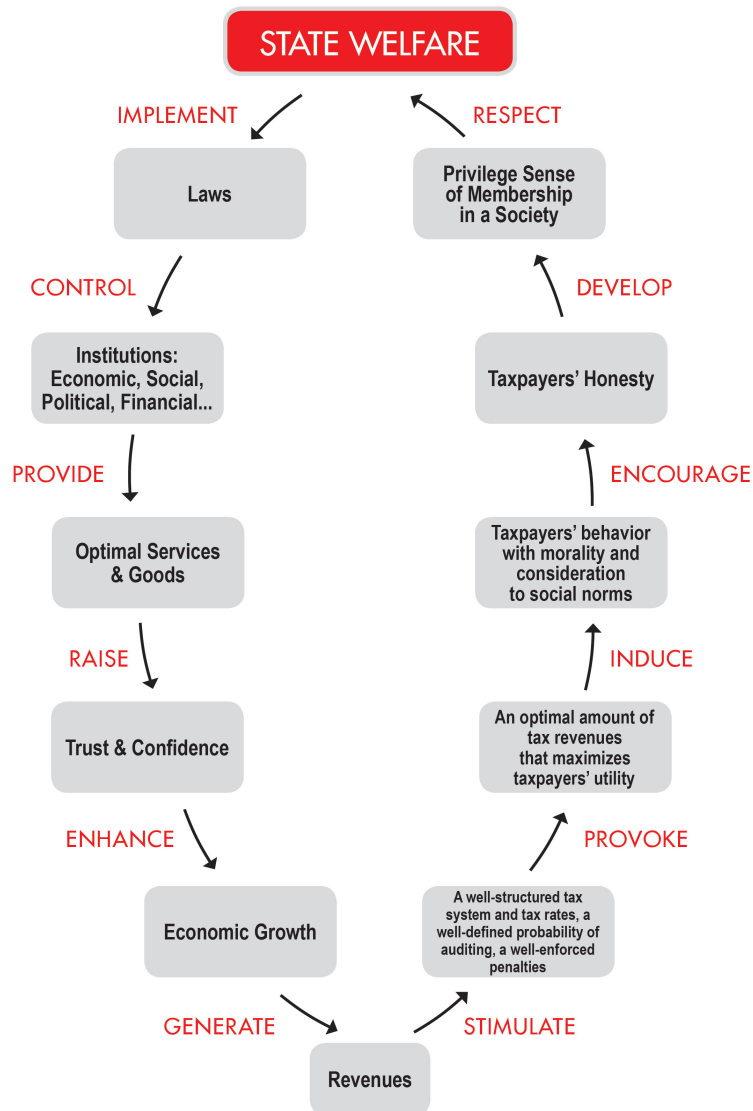


Figure 3.3: Institutions and taxpayers' behavior

3.2.2 Political Power

The lack of public goods delivery and the presence of international violence influence the state's collapse. This collapse is also connected to corruption and loss of control over some parts of the territory. Subsequently, the government becomes illegitimate due to these factors (Rotberg 2003). In developing countries, these processes coincide with the race for power between ethnic and religious groups that use welfare to impair the mandate of the government (Ayoob 2002). Since this fact results in weakness of the state, citizens prefer leaders that can provide public services (Migdal 1988). From this perspective, tax evasion is a beneficial choice for the country's population. In addition, economic institutions reflect a continuous conflict of interests among political groups. For instance, the current institutional design of economic organizations depends mostly on the allocation of political power among elite groups. Despite the presence of a ruling group, the state should perform a function of regulation to ensure social justice. In fact, the principles of equal distribution of wealth and social justice are fundamental for the welfare state concept, according to which the state's primary role is the promotion of the social and economic wellbeing of citizens. In this context, the government can undertake to provide subsidies and cash in forms of income insurance and other transfers or might provide services like education and health care. However, the welfare state can also provide a variety of regulatory policies for environment, job security, and housing in order to prevent drastic inequality between social groups (Lindbeck 2006). Actually, tax noncompliance leads to a gap in the national budget, which is the difference between expected and actual taxable income. In line with Fuest and Riedel (2009), tax avoidance and tax evasion are the main reasons that lead to tax gap and tax revenue losses. Yet, revenue authorities deal with the tax noncompliance. Cullen et al. (2018) revealed that the higher the number of citizens that hold a positive attitude towards the government, the lower the number of individuals that evades taxes. In the same vein, Gerber and Huber (2009) argued that taxpayers usually decide about taxpaying behavior based on state expenditures perception; as this perception affects citizens and their affiliation toward the government. In this regard,

political affiliation is the identification of a person with a political party that belongs to the political system of the country (Edwards 2007). Moreover, political affiliation is an essential factor in economic behavior that affects the degree of law-obedience. Within this framework, political views and attitudes towards ruling parties influence the probability of tax law abidance. Indeed, Lozza et al. (2013) hypothesized the direct influence of political affiliation on compliance behavior. According to the study of Cullen et al. (2018), when citizens support the political party of the incumbent president, they perceive government tax and spending policies less negatively and are likely to express more tax compliant behavior. Due to these facts, it is crucial to identify the political regime in the analysis of tax behavior. In this regard, Roubini and Sachs (1989) and Weingast et al. (1981) claim that when power is dissolved across branches of the government or political parties through the alteration of political control over time, the likelihood of inefficient budgetary policy is heightened. In multiparty legislatures, coalitions become unstable as the effective number of parties increases. In fact, the size of the budget grows due to the norm of universalism (Scartascini and Crain 2001). Consequently, electoral systems with proportional representation combined with large districts are more likely to produce weaker governments than plurality rule systems (Stein et al. 1998). Alesina and Rosenthal (1995) also claim that coalition governments face considerable difficulties in implementing fiscal adjustments and responding to budget imbalance more than unitary governments do. In addition, under the rule of single-party government, voters can better identify who should be blamed or rewarded for the observable economic performance. Under a coalition government, however, voters may face difficulties identifying coalition partners that are responsible for the bad performance. According to the findings of several studies, trust in tax authorities is positively related to tax compliance. Balliet et al. (2011) show that trust is necessary in case a massive conflict of interest arose. While Taylor (2002) argues that tax revenue authorities are designated by governments to collect revenue on their behalf. Therefore, if the government is perceived as a representative, then the role of tax authorities should be regarded as legitimate.

3.2.3 Tax System Structure

Some tax systems may create conditions that lead citizens to delude, which, in turn, can be treated as a cause of tax avoidance. Accordingly, the structure of tax system might offer some techniques for reducing a tax responsibility without deception by letting taxpayers switch from evasion to avoidance. Therefore, modifying the tax system might be efficient for enhancing honesty (Slemrod 2018). Nonetheless, some steps might improve compliance by making evasion more problematic. For example, simplifying the tax systems, and related reporting requirements might do the trick. As well, ensuring easy access to information would be adequate for this purpose. Providing access to support and advice might also be suitable. Another example is establishing simple methods for making tax payments, including online payments, banking payments and payments via SMS. In addition, reducing face-to-face interaction with tax collectors might also be efficient, since it has historically caused delays and increased the risk of abuses (Fjeldstad and Moore 2008). Furthermore, a progressive tax system and well-structured penalties are a matter of governmental choices. Many tools, such as the probability of auditing, the determination of tax rate, and the form of imposed penalties, play a significant role in reducing fiscal fraud. For instance, raising the tax rate will increase the proportional penalties on evaded taxes and will consequently reduce tax evasion if individuals are risk-averse (Yitzhaki 1974). Another step to consider is control over tax evasion. This control is exerted through amplification of surcharges and the adoption of a low or constant probability of auditing. If evasion is maintained under control and evaders are caught and punished adequately, other taxpayers become aware of the possible outcomes of incompliance emanating from the external effect of citizens' behavior and will be discouraged to evade (Cowell 1990). Nevertheless, if control is lost, it becomes harder to deter any individual from evading (Allingham and Sandmo 1972). Though taxation policy has a detrimental effect on the tendency to launder, the responsibility of the state also has a critical effect regarding fraudulence. Moreover, agents of tax authority are subject to some sort of temptation. In this regard, high government accountability leads to higher tax revenues. The confidence that

individuals have towards the tax authority plays a decisive role in their tax behavior (Kichler et al. 2011). Within this framework, Torgler and Schneider (2007) indicate that individuals perceive the increase of corruption as misuse of their tax burden. Therefore, exploitation of the state's budget will probably discourage tax contribution in a situation of high corruption and encourage the expansion of the shadow economy (Buehn and Schneider 2009, Alm et al. 2014, Pollitt 2013). Moreover, it is essential to consider the rise in costs, which is the result of anti-evasion instruments. All revenues of the optimization of the government or the tax authority should be equivalent to or excel expenses in order to introduce changes. In addition, the only possible purpose of collected costs must revolve around social wellbeing (Cowell 1990). According to HMRC (2019), the vast majority of taxpayers, whether individuals, small businesses or large companies, are required to pay their fair share toward tax authorities. This government recognizes its duty towards the compliant majority by establishing a fair tax system that ensures punishment and refurbishment of penalties committed by tax avoiders. In addition to the fairness of the tax system, it is essential to adjust the system according to technological development, which is followed by changes in business models, lifestyles, and working practices. Hence, tax system should be in cohesion with modern ways of working. In this regard, the current Lebanese government continues to act through reforms such as Making Tax Digital and making the tax payment process as easy and straightforward as possible. Moreover, the tax administration framework is constantly supervised in order to guarantee its efficiency in supporting a modern and trusted tax system that provides revenue for public services and security for the taxpayer. Actually, a taxpayer considers legal provisions as long as the exchange between paid amounts and the services supplied by authorities is fair. Yet, the quality of public institutions has a strong effect on the taxpayers' behavior (Mitu 2016). Similarly, administrative tools are required in order to support the institutions. The effective operation and management of the tax system rely on taxpayers who provide the tax authorities with accurate information about tax returns and meet their obligations such as timely tax payments. Furthermore, the government shall consider options for

reviewing and updating the tax administration framework that is based on the legislation, in addition to introducing the rules and features of the tax system. The aim is to ensure its relevance in the development of the modern tax administration and its conformity with the changing economy. Likewise, taxation process would be more effective and accountable if reforms begin in tax administration (IMF, OECD, UN and World Bank 2011). In a survey conducted amongst tax avoiders, Murphy (2004) illustrates that taxpayers who experienced poor treatment from a tax authority as an outcome of their infractions, displayed a decrease in trust in the administration. Subsequently, this could result in non-compliant behavior.

3.2.4 Structural and Administrative foundations

It must be noted that creating a trustworthy legal, political and institutional atmosphere is not sufficient for generating taxable revenues. Thus, a thriving economic structure is required to ensure incomes and profits. According to the Central European Bank (2017), structural reforms must be designed to change the economic structure and the regulatory framework concerning the performance of businesses and citizens. These improvements are intended to ensure the capability of the economy and its ability to achieve the growth potential in a balanced way. Structural reforms are designed to change the supply part of the economy. They result in the raise of productivity, employment, and investment, which can be achieved by several approaches. Moreover, they overcome obstacles in order to increase efficiency and efficacy of the goods and services' productions. Indeed, structural reforms have become popular as an alternative option for conventional fiscal and monetary policies (Draghi 2015). In effect, World Bank (2018) proposed a conceptual scheme for the development of practical measures concerning tax reform and improvement of compliance. According to this scheme, the complementary investments in a combination of trust, enforcement, and facilitation can result in the reinforcement of imposed compliance and the stimulation of quasi-voluntary submission. Such approach can generate strong political support for

transformations that are beneficial for tax compliance. A key challenge for governments is finding the right combination of these measures of enforcement, facilitation, and trust in an effort to generate revenue and achieve broader development goals. In fact, reform of tax administration was classically introduced in this region under the slogan "tax administration is tax policy" (de Jantscher 1990). It has been long argued that bargaining between taxpayers and governments over the collection of tax revenue is beneficial for both parties. In fact, it can provide a foundation for the development of responsive and accountable governance and entail definite shape of state-society relations (D'Arcy 2009). In addition, tax administration reforms affect tax performance and compliance both directly and indirectly. These reforms aim to promote the tax authority's capacity to detect and punish the noncompliant citizens, enforce fair and equitable taxation, and provide benefits in return for tax payment. Therefore, the reform of tax administration creates a positive environment for state building through the enhancement of state capacity and the improvement of state-society relations (Chazan 1988). In addition to all above-mentioned elements, political commitments represent an additional key element with regard to administration foundations (Tanzi and Pellechio 1995). If corruption is supported by political power, it will be hard to stamp out administrative bribery and address economic, social, and living conditions. Furthermore, it will be hard to stop public funds wasting. Consequently this will distort the principle of tax collection.

3.2.5 Social Interactions, Tax Morale and Education

Economic deterrence, monetary exchange, and interactions between individuals in society are the main institutional theories that can describe taxpayer behavior (Ali et al. 2013). The principle of economic deterrence explains tax behavior primarily by acts of force or penalties introduced by authorities in order to compel individuals to follow fiscal law (Allingham and Sandmo 1972). In turn, monetary exchange theory shows taxpayer's behavior regarding the delivery of public goods and services provided by the government. In Cowell and Gordon's view (1988), the delivery of public goods in

large quantities against private goods promotes the payment of tax. Individuals pay tax when they perceive that it serves to finance public goods. Moreover, they are more willing to pay taxes when they realize that their contributions are not exploited for purposes other than their intended use, provided that this fact is backed with sufficient evidence or motives. In addition, Das et al. (2014) showed that the quality of services provided by the state is essential in determining tax behavior. While these two theories are devoted to the interaction between a citizen and the government, the last theory outlines the social aspect of fraudulent activity. Though control over tax behavior belongs to the state, relationships between nationals play an important role in fiscal evasion. As for the social interactions, the taxpayer might be discouraged to avoid tax payment by a fear of social sanctions (Besley and Persson 2014). For this part, D'Arcy (2011) pointed out that tax behavior goes beyond the simple relationship between two agents that are the taxpayer and tax administration. Therefore, the decision to evade taxes depends on the relationship not only between a citizen and the tax authorities but also between the citizen and all the other civilians in the state. The reason is that their taxes will be used to finance public goods for their consumption and the consumption of other individuals in society. In addition, tax morale, which is defined as the intrinsic readiness to comply, was found to be associated with tax behavior (Kornhauser 2007). According to Kornhauser (2007), tax morale is influenced by social norms that include beliefs about trust, legitimacy of the current government, procedural justice, in addition to cooperation, benevolence, and identification with the social group. In fact, these data are consistent with the studies of Feld and Frey (2007), Torgler and Schaffner (2007), and Torgler (2003). In addition, Torgler (2004) found a relationship between tax morale and perception of corruption, he also revealed a positive and strong link between tax morale and the perceived volume of corruption. Subsequently, since tax evasion is among the most significant issues that are encountered by fiscal authorities (Bethencourt and Kunze 2015), it is important to consider these psychological factors in order to overcome incompliance more effectively. According to numerous researches, tax evasion and citizens' demeanor are related to the behavior of other

taxpayers (Gaechter 2006). In the words of Alm (1999), these factors can be used to explain reasons for compliance of taxpayers who do not evade taxes despite the profitability of non-compliance. Moreover, tax morale is recognized as the internalized social norm about the importance of tax compliance. In the eyes of tax-evaders, it combines fines and substantial losses with non-pecuniary considerations and is regarded as a punishment (Dell'Anno 2009). Due to this belief about non-compliance of outcomes, individuals prefer to obey the law and decrease the level of tax evasion. In this context, Torgler (2003) and Weck (1983) documented a positive connection between tax evasion and tax morale within different countries. These results shed the light on the influence of other people's attitudes towards tax avoidance on taxpayer's actions. Due to the relationship between tax behavior and social norms, it is vital to improve tax morality in order to decrease tax avoidance. In this regard, Bethencourt (2013) revealed evidence about countries that enjoy high income while supporting the importance of tax morale. In fact, he assessed the quality of institutions, degree of tax morale development, and evasion that was low in such countries. Similarly, Gordon (1989), Myles and Naylor (1996), Kim (2003) and Traxler (2010) analyzed the effects of morality, customs, and stigma on tax evasion behavior. Within this framework, fiscal capacity is considered as an important determinant of the ability to borrow (North and Weingast 1989, Bordo and White 1991, Dincecco 2009, O'Brien 2011). Thus, maintenance of high government spending levels requires high fiscal capacity. The latter depends not only on institutions that detect and punish tax non-compliance but also on intrinsic motives that define an individual's desire to commit a fraud. Since individual taxpayers also care about others' perception of their tax compliance, we can resort to social interactions in order to shape norms of compliance (Besley and Persson 2014). Therefore, if tax policy and the enforcement of taxes are widely perceived as subject of political pressure, the independence and general credibility of the tax authority will be tarnished. While tax avoidance directly reduces revenue-generation, the subsequent deterioration of the state's credibility among other taxpayers might lead to their non-compliance and a further decrease in tax revenue. Within this framework, Torgler (2007) confirmed

that one of the most important reasons of tax evasion lies in a belief about the tax noncompliance of other citizens. The tax authority and public institutions' adjustment actions can prove the importance of the optimal use of collected taxes for public provisions. In addition, they highlight the significance of the proportional punishments for all evaders. While these measures can change the local tax culture, there is evidence available about this culture's impact on economic development. In fact, a local tax culture might support a social and economic environment while a modern tax system relies on a series of norms, in addition to the increase or decrease of the amount of taxes, duties, and contributions as well as the entailment of a long-term commitment. In this context, the process of tax system modernization defines the behavioral culture of taxpayers, facilitates proper compliance with the norms and consolidates of good practices in this field (Mitu 2016). Therefore, highlighting the benefits of taxation, eliciting notions of fairness, emphasizing social norms, and framing information differently through the educational system might support taxpayer behavior and uncover issues that were unaddressed by traditional concepts of deterrence (Hernandez et al. 2017). For this reason, tax compliance should be inserted in the educational programs so that citizens recognize the advantages of tax compliance in the development and progress of their country. Actually, the taxpayer is a citizen who should know and understand the importance of tax payment in the process of state building. In addition, recognizing the public revenues' role in the supply of needed goods and services is primordial for the enhancement of tax compliance. Moreover, negative attitudes towards tax evaders and the promotion of appropriate social norms are beneficial steps for the improvement of tax system. According to Guano (2010), tax evader can be considered a thief for three reasons. Firstly, such citizen withdraws resources from the community and public facilities like schools and hospitals. Secondly, tax evasion results in the raise of taxes for honest residents. Thirdly, such tax avoider continues to use the infrastructure despite his incompliance. Accordingly, these arguments can be employed for the development of tax-paying culture.

In order to propose the optimal institutional design dedicated for enhancing taxpayers' compliance and reducing tax evasion in Lebanon, a general overview on the Lebanese society will be displayed in the following section. This latter includes a summary of the facts of Life that affect the Lebanese taxpayers' behavior.

3.3 Lebanese Global Configuration and Fiscal Reality

The independent state of Lebanon was founded in 1943 in accordance with the National Pact between Christian and Muslim political elites and representatives of the seventeen ethno-religious communities. The agreement between these religious groups was institutionalized based on a structure of power sharing through the apportioning of governmental positions along religious lines, the officiation of political sectarianism or sectarian representation, and the distribution of institutional power within the system. Decades of civil war, foreign occupations, and nature of the Lebanese personality have led to repeated instabilities, which in turn weakened successive governments since the state's independence in 1943 (Cobban 2019). Such governmental incompetence and the non-provision of social welfare services across the country promoted tax evasion decision. Khan et al. (2017) indicate that a culture in which elites receive special tax treatment could weaken tax morale and compliance due to perceptions of unfairness. In fact, procedural justice would deteriorate since political leaders and citizens connected to these elites can avoid taxes. At the same time, taxpayers that are not politically affiliated are expected to contribute in a disproportionate share of tax revenues. Tax incompliance is perceived as an act of cleverness and is considered as a right by other Lebanese taxpayers who believe that tax payment is a foolish behavior. Accordingly, the adjustment of this custom and social attitude towards tax avoidance may contribute to better tax compliance. In fact, many Lebanese debate various changes in the tax system in Lebanon. However, most of the proposed policies are mainly oriented toward technical issues that cannot be implemented, and might not prompt society to

adapt to new rules. In addition, Fakih et al. (2020) present evidence indicating that erosion of trust in Lebanese public institutions occurred prior to October 2019. They find strong evidence that prove the decrease of confidence in most public institutions between 2013 and 2016. Moreover, the war in Syria has caused both external and internal pressures on the Lebanese political system and state institutions. Yet, the Lebanese power-sharing system rests on a set and non-state institutional mechanisms, which allows politicians to stay in charge (Geha 2019). Economically speaking, since the public deficit of the Lebanese government corresponds to 8.3% of gross domestic product (GDP), there are a few opportunities for any high expenditure for the purpose of fiscal stimulation. It must be noted that the gross public debt reached 151% of GDP in 2018. In fact, social transfers, payments on debt and remunerations to the national electricity company represented three main elements that accounted for 76% of total expenditures during the last decade. In this way, these expenditure headings account for the deficit in a higher percentage than other services (World Bank 2018). Subsequently, the primary sources of income for the government are narrowed down to the tax revenue base. This base consists of indirect and regressive taxes, among which is the value-added tax (VAT). The report of the Ministry of Finance (2018) statistics shows that the highest profit of tax revenue was related to taxes on goods and services. This type of taxes was represented by VAT and constituted 28% of total tax revenue, in addition to other levies. In contrast, the added contribution of progressive and direct taxes on income and profits from public and private sources is significantly lower, with a percentage of 17% of total revenues during the past decade (Mahmalat 2018). From the macroeconomic standpoint, revenues from VAT in 2015 have reached up to 4.1% of GDP in contrast with 1.4% of tax on profits (IMF 2017). However, the country occupies one of the highest global positions regarding the level of income inequality. Therefore, it would be necessary for Lebanon to improve the tax system design in order to generate revenues from progressive income-based taxes. The low number of parliamentarians' initiatives regarding the upgrade of the taxation system is associated with the low quality of its service. Moreover, since ongoing discussions are taking place regarding a new

electoral law, the implementation of modifications on the tax system will be problematic. The reason is that this topic is related to conditional interests, auspices, and the partnership between legislators and entrepreneurs. Additionally, despite the extent to which a new tax system would be progressive or justified, the attitude toward taxation will not change until the government deals with inadequate provision of public services and the mistrust issue. Therefore, the reformation of government into a transparent well-functioning institution can contribute to the decrease of dissaving and the increase of investment outlay. Accordingly, World Bank policy paper identifies the priority reforms that are crucial for Lebanon (Harake 2017). Among them, fiscal reforms are described as one of the top 10 priority measures that the government can undertake to ensure growth and development. Many concerns arose regarding Lebanon’s recent fiscal performance and its debt outlook. The International Monetary Fund has repeatedly alerted officials that the debt burden could impede the government from attaining its economic objectives and could be the prime source of financial instability. Therefore, a sustained and balanced fiscal adjustment is urgently needed. In this regard, financial and economic studies revealed that Lebanon annually loses millions of dollars because of the so-called tax evasion. This latter corresponds to 10% of the GDP and accumulates the country’s debt pile, which in turn leads to its fiscal deficit (IMF 2017).

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018
Amounts in LL Billions									
Total Debt	79 298	80 887	86 959	95 710	100 356	106 015	112 890	119892	128347
GDP	57 300	60 419	64 752	67 852	74 400	75 808	77 491	80465	84998
%	138%	134%	134%	141%	135%	140%	146%	149%	151%

Source: Ministry of finance

Table 3.1: State debt of Lebanon

As is the case in most underdeveloped countries, the share of direct taxes has remained low, although it rose from one-quarter to one-third of tax revenue. Therefore, discussions revolving around the reforms are of the utmost priority and should repre-

sent the primary message of the government (Harake 2017). According to IMF (2017), the Ministry of Finance formulates and achieves the core financial functions of the government by introducing economic and fiscal policies. In this regard, current design and reform recommendations related to fiscal policy and financial management maintain the legislative framework and business processes based on top performance of the fiscal policy (Andrews 2013) hence they increase tax efficiency and reduce fraud .

In this respect, the Ministry of Finance is one of the most prominent ministries in Lebanon thanks to its vital role in the collection of revenues for financing public needs. In addition, this ministry plays a central role in the budget planning and the control of all public expenditures. It must be noted that the Lebanese Ministry of Finance won the 2007 United Nations Public Service Award in the category of "Improving the Delivery of Services" (Ministry of Finance 2008). By virtue of this award, the ministry was recognized by the international community for achieving modernization goals. Indicators of success are numerous, including the increased revenue of the treasury. But more importantly, its success is due to a higher overall customer satisfaction, higher levels of voluntary compliance, reduced number of disputes, and lower processing and response times to transactions to name a few. However, the government's strategy that is translated into the "budget process" is not well structured most of the time. According to the Lebanese Ministry of Finance (2018), many public expenditures were not included in the regular budget. Therefore, when budgets exclude major expenditure items, doubt arise concerning resource allocation to priority programs, the enforcement of legal control and public accountability. Thereby, expenditure control is a crucial element of the budgetary process and accountability.

Moreover, the banking secrecy law, which is in force since 1956, had an essential role in raising confidence in the local banking sector and boosting the flow of foreign capitals. According to the law ¹ of information's exchange for tax purposes, the Special

¹Law n ° 55 dated (27/10/2016) for the exchange of information for tax purposes

Investigation Commission -which is a part of the Ministry of Finance- should review every request regarding tax information and issued from foreign tax administration before it can be made available via Automatic Exchange of Information. Hence, the improvement of banking secrecy in accordance with international standards, and by means of legislative system's development, represents one of the current issues. New laws can also represent a measure for tax compliance's advancement. Tax authorities in Lebanon have rolled out measures and provided facilities that contributed to several achievements. For instance, payments are exclusively made through banks with specified due dates for all transactions and they are filed exclusively by mail due to the expansion of mail services (Ministry of Finance 2007). These accomplishments also include the launching of a 24/7 call center that respond to all taxpayers' inquiries and delivers conferences, seminars, and workshops for increasing taxpayer awareness. Furthermore, educative projects have been developed and they include the distribution of guides, bulletins, newsletters, and brochures. Moreover, the instant communication by e-mails, continuous update and publication of e-information to citizens, and the introduction of e-services for accomplishing tax transactions through the web were introduced as a part of modernization goals (Ministry of Finance 2007). As well, the implementation of an automated document tracking system for taxpayers' inquiries increases the quality of the provided services. Despite these improvements, the Ministry of Finance still suffers from many flaws and has to undertake critical reforms in order to reduce the fiscal deficit and reestablish Lebanon's financial stability.

Years	2010	2011	2012	2013	2014	2015	2016	2017
Amounts in LL Billions								
Revenues	12 684	14 070	14 164	14 201	16 400	14 435	14 959	17524
Expenditures	17 047	17 601	20 081	20 563	21 032	20 393	22 412	23186
Deficit	-4 363	-3 531	-5 917	-6 362	-4 632	-5 958	-7.453	-5662

Source: Ministry of finance

Table 3.2: Budget deficit of Lebanon

According to the Ministry of Finance (2018), the budget deficit has widened significantly in 2018 due to the increase in public spending. This happened because of the salary scale adjustment in 2017 in addition to the decrease of revenue collection caused by the subdued economic environment. In details, the hike in government expenditures was also the result of increases in capital spending, payments to municipalities, and transfers to Electricity of Lebanon establishment (EDL). In addition, the worsening fiscal situation does not only stem from the higher spending but also from the significant drop in revenues, mainly income tax on profits which fell by 1,519 billion LBP (77.4 %) compared to last year's huge amount. According to the World Bank (2019), levels of economic growth in Lebanon are low and they reached a percentage of 0% in 2019. Hence, structural reforms are crucial for the promotion of economic development. Based on Allen et al. (2016), the allocation of public expenditure depends on the behavior of politicians, government bureaucrats, voters and taxpayers. It is also affected by the behavior of civil society organizations, financial institutions, and other participants in the decision-making processes. Therefore, understanding of these parties is needed in order to explain the decisions that are done by government organizations, including Ministries of Finance. The size of the public sector is determined by both demand and supply that are defined by all participants in tax payments. This is accomplished through the government's internal decision-making processes, broader public debate and voting procedures. In this regard, illegal actions that include tax evasion are considered as custom, while this custom was converted into a cultural trait in Lebanon. Duhigg (2013) verified the process in which a habit can be changed through its components, as these include "a signal, a routine, and a reward". It should be mentioned that Lebanese citizens are surrounded by a repressive living and working environment. Moreover, their habits are a result of a volatile economy, a lack of security in addition to uncertainty in terms of a political context that persisted for a long time. These issues could be assessed in an effort to identify the essential habits that must be changed.

Due to all these facts, next section will be devoted to the proposition of the optimal

institutional design for the purpose of reducing tax evasion and enhancing tax compliance specifically in Lebanon. It is worth noting that the design proposed in the next section is based on the plan developed in section 3.2. This design is an attempt to lend a helping hand to the educational institutions and to the entire Lebanese community in order to introduce new social norms and to enjoy a reformed vision toward the tax evasion culture.

3.4 Development of the Optimal Institutional Design for Fiscal Fraud Reduction in Lebanon

October 2019 uprising reflects the widespread belief that the government mishandled its responsibilities while it also reveals the prevalence of poverty. However, poverty cannot be defined by the inability to reach a certain level of income, as this definition implies that it can be eliminated by applying partial arrangements. These arrangements might overhaul the aspects of poverty and inequality while keeping untouched the social and economic structures that reproduce them (Bou Khater 2020). For this reason, Lebanon must undertake global reforms. Actually, more than one million people took to the streets in protest against the government's mishandling of the economy. Protesters are claiming for their basics rights. In fact, these protesters are the targeted taxpayers themselves. Subsequently, if the government is asking them to pay their duties it must grant them their rights in return.

In effort to insert new cultural fundamentals that induce the taxpayers to fulfill their obligations toward authorities, Fakhoury (2019) highlights three core dilemmas that recurred in Lebanon's political dynamics: the power-sharing formula's proneness to deadlock, its reliance on the external environment as an avenue for partisanship and sectarian leverage, and its weak responsiveness to demands of common people. Since the reality that the bond of trust between the government and taxpayers is ruined, The improvement of tax compliance will not be an easy task. In order to reduce tax evasion

in Lebanon, various institutions have an essential role to play. These institutions are required to be inclusive. In fact, inclusive institutions grant equal rights and entitlements, and enable equal opportunities, voice and access to all resources and services. They are typically based on principles of universality, nondiscrimination, or targeted action. These institutions are needed where some people and groups are particularly disadvantaged, and therefore require differential treatment in order to reach the equivalent outcomes, such as the budget rules that prioritize investment in disadvantaged areas². In fact, three crucial components that contribute to the decline of fraudulent activity. First, in order to support the concept of the Lebanese welfare state, the optimal political and legislative institutions must be determined. Second, optimal goods and services must be fairly provided through public sector institutions. Moreover, a well-structured tax system must be established and supervised by the proper tax authority.

3.4.1 Political and Legislative Institutions

Lebanese history has been more or less defined by the involvement of the country with the problem of sectarianism (Weiss 2009). In fact, the political regime in Lebanon is sectarian since the political class is made up of the various Lebanese sects. Overall, each fraction has a political leader who is represented with a particular parliamentary bloc and who has a share in the Lebanese governmental ministries. It must be mentioned that the culture of electing sects' members is an approach adopted by the Lebanese citizens in order to protect their interests within a pure clientelistic system (Hajjar 2009). The possession of specific political figures for the most considerable part of Lebanese power is related to the geographical properties of Lebanon that isolate it in a particular regional context and define its past and present historical milestones. Actually, the Lebanese citizen charged with tax payment adopts tax evasion for differ-

²Global Sustainable Development Report (2016), Chapter 4: Inclusive Institutions for Sustainable Development

ent reasons including the lack of access to the most basic rights like medical treatment and education, the reliance of family on earned money, and the insufficiency of justice between members of the same homeland (Sidani et al. 2014). Indeed, followers of the ruling political class have enough privileges that allow them to be exempted from paying fees and taxes. Therefore, lack of fear from any form of punishment reinforces the culture of tax evasion for the Lebanese citizen. Sometimes taxes are avoided in exchange for the electoral vote, which results in a legal and official exemption from the Lebanese government's authority (Hajjar 2009). Such association between political preferences and law enforcement affects the attitude towards the government. In fact, the Lebanese political structure, whose interests are linked to regional issues and different internal considerations, is associated with the citizens' sense of insecurity and instability (Sidani et al. 2014). However, political instability, which is defined as the propensity for a change in the executive branch of government, either by 'constitutional' or 'unconstitutional' means', may decrease the taxpayer's trust in the government and weaken the relationship with the authorities (Alesina et al. 1996).

In this sense, failures of the state affect fiscal fraud rates in Lebanon more than other factors in the field of tax evasion. While Baldry (1986, 1987) indicates that the choices of some individuals to refrain from evading are based on moral grounds, this statement is not applicable in the Lebanese case since the government, with all its organizations, is convicted of corruption with all its organizations. This conviction incites citizens to take the risk of tax avoidance by concealing a part of resources, falsifying the reports to tax authority, or even making no report in order to maximize the utility without feeling guilty. As a matter of fact, tax evasion is an old phenomenon that comes from a principle of rational self-interest that enshrines private interest at the expense of the public interest. For instance, the Lebanese refused to pay taxes to the colonial Ottomans authority during previous historical eras. Moreover, the Lebanese continued to evade paying taxes under the French mandate for the same reasons. The independence of Lebanon in 1943 did not change this attitude towards taxes. On the contrary,

corruption and accounting fraud increased until the era of President Fouad Shehab, who established regulatory institutions and enacted laws that fight corruption (Ajaka 2018). Institutions like the Central Bank, the Central Authority for Administrative Reform, the Civil Service Council, and the Central Inspection Bureau monitored and prosecuted taxpayers until the start of the civil war in 1975, during which taxation was almost completely suspended with the exception of some areas. During the civil war, corruption and theft intensified, and the culture of self-reliance prevailed instead of relying on the paralyzed state. The end of the Civil War in 1990 established the principle of civil peace above all considerations and, therefore, no strict accountability was exercised against tax evaders in an effort to maintain this principle. However, the following events resulted in the deterioration of the situation (Verdeil 2008). Grapes of Wrath in 1996, the assassination of Prime Minister Hariri in July 2006, the war between Israel and Lebanon, the Syrian crisis, and the presidential vacuum resulted in further development of tax evasion. Thus, the lack of financial inclusion, criticism, and rampant corruption have led to the loss of state control over the economic activity. Consequently, the shadow economy accounted for more than 38 % of the general economy (Schneider et al. 2010). In addition, national survey results revealed that 70% of citizens assume that politicians use taxes to fund their programs and maintain access to power (Hoffman 2014). Consequently, this belief constitutes a strong argument for the evasion of payments that is accomplished in several ways and exercised in many places. Evasion of income tax, which is one of the significant forms of fiscal fraud, includes non-authorization, manipulation of revenue and expenditure, or the evasion of payment of customs duties by companies and individuals through the port, the airport, and across the eastern border. Other forms of fiscal fraud include avoidance of paying bills for public institutions such as Electricity of Lebanon establishment (EDL).

In Lebanon, institutions are selected because they meet the interests of politicians or social groups that hold political power. This is the reason why powerful groups do not operate efficiently (Acemoglu and Robinson 2002). From this perspective, the dis-

tribution of political power will represent a direct consequence of political institutions. These political institutions rely on electoral guidelines such as the rule of plurality and proportional representation of citizens, closed and open lists during elections, forms of government, and political regime. Hence, a state's democracy can be estimated by the duration of the democratic regime in the country, size of coalition or ruling party, and properties of the federal structure. Definitely, a reliable state has the authority to regulate tax imposition and disbursements (Krause 2013). Resorting to 'inclusive institutions' might be a key element in preventing political misinformations. At this point, 'inclusive institutions' are developed when many people have a say in political decision-making, as opposed to cases where a small group of people control political institutions and is unwilling to change. Acemoglu and Robinson (2012) argue that 'inclusive' institutions, as opposed to 'extractive' ones, represent the critical factor in shaping both economic and political progress. Levy (2014) argues that 'inclusive institutions' are required when countries start to move out of limited access orders into open access orders, or from clientelistic to capitalist forms of political settlement. Therefore, interventions in most developing countries should consider issues of growth and state capacity as a priority with an effort to promote inclusion down the line.

The role of political institutions and factors has been verified in its capacity to influence the fundamentals of fiscal cyclicity (Venes 2010). In this context, Zaky and El-Khishin (2016a, 2016b) investigated the central political institutions' problems that affect fiscal performance. Indeed, the common pool problem and the principal-agent relationship between voters, who are the principals, and politicians, who are the agents, represent some of the identified issues. The effect of the two problems enlarges fiscal deficits and leads to higher debt levels as the consequence resulting from the principal-agent problem lies in political catering of special interests. Hence, elected politicians usually use fiscal 'redistributive policies' to influence the provision and distribution of targeted public goods. While this tactic generally represents their strategic tool to guarantee their reelection, Alesina et al. (2008) argue that fiscal policy is procyclical in

developing countries as a result of 'political agency' problems that inhere the increase of voters' demand for public goods and lower taxes during booms. Generally, politicians respond to these calls in light of the principal-agent relationships and rent-seeking behaviors. Besides, the electoral system also affects the probability of corruption increase that results in the disruption of financial policies. As a matter of fact, the results of the studies were found to be inconclusive and have contrary explanations of the effect of political electoral institutions on economic performance. According to Persson and Tabellini (2006) and Persson et al. (2000), the level of political corruption will be higher under electoral systems that rely on list voting than in those where voters directly select individual candidates. Furthermore, Hallerberg and Von Hagen (1997) argue that coalition governments are associated with higher costs than single-party governments. They also indicate that power dispersion increases the chances of fiscal wastefulness.

Indeed, shaping another relationship between political leaders and followers might firmly establish the idea of 'state' in the mind of Lebanese citizens rather than the clientelism concept. Obviously, several theoretical contributions in the economy predict the systematical influence of electoral rules and political regimes on fiscal policy outcomes (Persson et al. 2000). In fact, the political constitution seems to be strongly associated with the policy. Therefore, the existence of an electoral law that guarantees a real representation of individuals and allows elected candidates to be held accountable in subsequent sessions might constitute a turning point in the political performance. It might also have a huge effect on the level of public provisions that affect the taxpayer's behavior. Due to this evidence, it is crucial to ensure that all members of Lebanese society trust the government. With a hope to move one day towards the 'civil state', application of 'the one person, one vote' electoral law with a proportional number of deputies and comparable adjustments fitting the Lebanese structure - such as the implementation of a rotation practice for certain position- might be the first step towards the development of trust and strengthening of democracy. Subsequently, the

'one person one vote' principle that is followed by a better representation of individuals might guarantee the development of a well-structured legal framework. This latter protects people's rights and determines political boundaries. However, the existence of a judicial authority that supports laws and applies justice is required in order to ensure fairness and conformity with legislation. Additionally, the Lebanese government was customarily designed to provide political representation of all Lebanese religious groups. The government posts and public-sector positions are also divided among the majority sects. Until 2019, the government was composed of 30 ministers. After the government was forced to resign on the 29th of October 2019 due to the mass protest, it was replaced by a technocratic government. The latter was composed of 20 members, all of which are described as specialist 'expert' ministers who are backed by political parties. In fact, the formation of a government that meets the expectations of all Lebanese people is a critical step toward achieving better tax compliance. Exertion of control through the limitation of ministers' number and the reduction of any possible spending might increase trust in government and improve tax collection.

One Person, One Vote

The 'one vote for each voter' approach belongs to the category of majoritarian electoral systems, according to which the candidate who obtains the most significant number of votes is the winner. It is based not on lists but rather on individual candidatures. Researchers believe that this system was legitimized in 1964, according to a decision issued by the higher court in the United States (Reynolds 1983). The mentioned decision referred to the need to establish equality between the voting powers of each voter. In the beginning, this system was named 'one man, one vote'. Currently, they refer to it as 'one person, one vote'.

The electoral law defines election departments geographically (districts or governorates, for example). One election department can include more than one parliamentary seat. During the voting process, each voter in each department has the right to vote for one

candidate to occupy one seat according to the majoritarian system. In contrast, the current system (known as the rule of sixty) is based on individual nomination. The elector can vote for a complete list or choose candidates from competitive lists so that he can compose his own list. In other words, candidates are not restricted to lists in this system, and the candidacy is individual, as opposed to the proportional system.

In this regard, pairing is possible between this system and the sectarian system in order to preserve the identity of Lebanon and its sectarian diversity. This system provides equality between voters in the different departments so that each elector might not select the same number of deputies as others. Furthermore, it ensures a direct and effective representation and expresses a clear personal choice, as opposed to lists, especially in the majoritarian system. An additional advantage of the 'one vote' system is the inability of a majority-voting group to control a minority-voting group by voting for multiple seats. The adoption of the 'one vote' approach frees minorities' seats from the majority's domination and provides legitimacy to the authorities. Besides, it offers equal representation opportunity to all sects in Lebanon. Moreover, the 'one person, one vote' system includes relativity effects to some extent. In addition, it is consistent with the Constitution since all voters in Lebanon become equal thanks to the right to vote for one candidate.

3.4.2 Judicial Reforms

Slemrod (1998) states that the behavior of government influences levels of citizens' trust. According to Kornhauser (2007), the best way to promote trust is to encourage procedural justice, legitimacy, and identification. These elements represent the foundation that the discussion of the drivers of trust is based on.

Lebanese judiciary is one of the three authorities that rule Lebanon. Moreover, it is an independent entity that is exclusively subjected to law (Sader 2007). In this context, article 20 of the Lebanese Constitution confirms the necessity to establish judicial courts

and stipulates the following: ' Judicial authority is assumed by courts with different degrees and jurisdictions within a system specified by law, while this system preserves necessary guarantees for judges and litigants.' Theoretically, judges are independent in performing their functions and making decisions, while verdicts are issued by all courts and are executed on behalf of the Lebanese people. As well, Judicial Council lies at the top of the chain of judicial authority and was adopted during the French mandate in 1934 and established in 1939 (Weiss 2008). This experience is based on the need to create a public authority that is independent of the executive power and that undertakes the appointment of judges, and manages to guarantee the judiciary's independence. Today, the judicial council in Lebanon constitutes an extension of the political and social system due to his members' specifications (Sader 2007).

Although legal provision is free from any reference to the sectarian affiliation of the council's members, however the famous dogmatic equation is adopted. Equality in positions between Christian and Muslims is achieved along with the guarantee of quotas for all primary sects is achieved in order to grant access for all religious parties to the ruling posts. The problem of designation is not limited to the control of the executive authority over the higher judicial council and its consequences regarding the independency of the council's members. The examination of its execution details shows that these designations often occur in a similar way to other nominations. In other words, this designation is carried out based on the distribution between the strongest leaderships within their sects (Hajjar 2009). Therefore, the designation of the council's members is related to the government and the most powerful leader within the sect. This situation, in turn, makes the member a representative of the leader and party's interests inside the council. The entailment of the council's members makes the committee similar to an executive branch of the political system. It must be noted that such organization is in contradiction with the international standards regarding the judiciary's independency that implies the absence of the other authorities' influence over this entity. Therefore, this judiciary must hold an extensive judicial representation

concerning the selection and appointment of judges. Likewise, execution of disciplinary proceedings against them and the management of public justice is needed in order to prevent authority abuse and unjust decisions. This fact interferes with the council's function and promotes the principle of separation of powers (see figure 3.4).

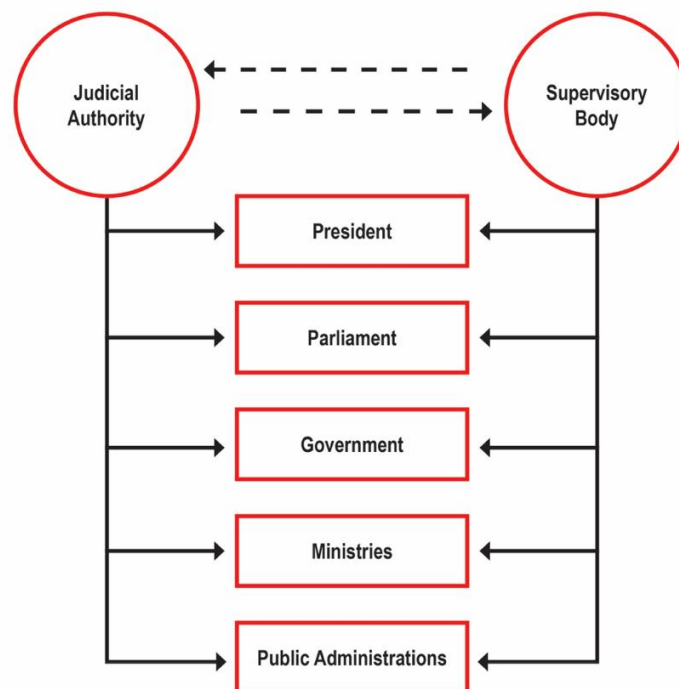


Figure 3.4: Judicial and supervisory authorities' independency

3.4.3 Supervisory Authorities in Lebanon

In democratic countries, supervisory authorities are directly related to the parliament or the President of a republic because the government is the authority that must be managed by these boards, whether on the level of ministries or employees. Hence, such executives cannot play the role of adversary and referee at once. In Lebanon, the Prime Minister is in charge of the supervisory authorities. These authorities of supervision comprise of the disciplinary council, central inspectorate, court of audit, and civil service board (Zagaris 2000). In other words, the party that is subject to supervision, carries surveillance and calls to account simultaneously. These institutions were established to regulate the work of the government and juridical system.

In this regard, the central inspectorate undertakes the mission of supervising the work of public administrations and its conformity with laws and regulations. In turn, the court of audit constitutes an administrative tribunal that deals with the financial judiciary. It must be noted that it was partially disrupted, and its role was restricted to subsequent control without preliminary control. In addition to the boards that administer the government, the civil service board, which is the third supervisory authority in Lebanon, undertakes the appointment and training of employees in the public sector. These bodies were directly related to the Prime Minister since the President of the republic holds the executive power with the support of the ministers. Currently, it is deemed as the most effective supervisory authority. When President Shehab decided to carry out administrative reform, he sought justice and equity by establishing supervisory authorities that have the power to recruit the staff and punish rulers for their offenses. These bodies continued to operate regularly until the civil war broke out and turned the state with all its institutions and authorities into a quasi-state. As a result, corruptionists had an opportunity to access ministries, institutions, and services.

Furthermore, the Syrian occupation of Lebanon resulted in the lack of interest in fighting corruption and persecuting lawbreakers. These events have led to an increase in non-compliant behavior and further development of corruption. As well, no special

attention was granted to recommendations mentioned in the reports of supervisory boards and their references to violations and embezzlement. While the war resulted in the development of corruption, legislative changes in power distribution between public officials were associated with structural changes in relationships between supervisory authorities. The linking of supervisory authorities with the Prime Minister was not permissible due to the considerable modification in the constitutional order of Lebanon and the restriction of the executive power to the Prime Minister. After the National Reconciliation Accord (Taif Agreement) was made, the President of republic became the State's President. This position was deprived of the executive power, which was then entrusted to the cabinet of ministers, though the President of republic constitutes an essential pillar in it. The activation of the supervisory authorities' role requires a first step towards the amendment of laws that define supervisory authorities as independent institutions (see figure 3.4). Once trust is restored based on legal, political, and judicial reforms, it is essential to develop public provision and structural changes that generate returns devoid of taxation.

3.4.4 Optimal Provision by Public Institutions

Hokamp (2014) offers various dimensions related to tax evasion and public provision. Public goods and services as the electricity, infrastructure, education and health are intimately connected with the idea of the state. Demand for public provision originates from the individuals' utility maximization calculus, which depends on the institutional structures within the state they live in. Public goods that are supposed to be provided by tax revenue affect individuals' own choices in tax evasion. Cowell and Gordon (1988), showed that, tax hikes when the economy is over endowed with public goods, therefore this reality might reduce tax evasion.

The welfare system subsidized by the state makes up for the tax pressure. It grants citizens equal access to a variety of free of charge services, including health care, education, and childcare. Thus, the financing and institutional mechanisms that have been

put in place for the extraction of resources and their redistribution provide a direct insight into the different kinds of social contracts that support the welfare state. In fact, they reflect different conceptions of solidarity and different redistributive ambitions (Sjoberg 2000). According to Cowell (1990), efficiency and equity would come at the top of the list with regard to the criteria of economic policymakers. Therefore, it is essential to incorporate these properties into the fiscal system in order to ensure the country's development. Nevertheless, the public institutions in Lebanon face many problems, including corruption among government officials, which is one of the most serious issues. In fact, the Lebanese public institutions are extractive institutions that favor the elites who are in charge, allowing them to pull materials and opportunities from the unprivileged rest (Acemoglu and Robinson 2012). These institutions reflect the division between government officials in terms of their loyalty towards their political leadership rather than the public interest. Elaborately, the political subordination of the vast majority of government employees outweighs their relationship with the state. They consider their contribution in the public sector as a means to serve their interests, the interests of politicians, the holders of specific positions and their supporters. On the other hand, more than 36.4% of the employees in Lebanese public institutions such as military, civilian, and educational organizations are informal workers. According to the World Bank (2011), 66.9% of such employees do not have access to social or retirement benefits, which in turn explains the low efficiency of public services. According to Nikiema and Zahonogo (2017), the perception of corruption, cheat, quality of health, education, electricity, and confidence in the tax authority have a significant effect on tax payment. Therefore, the amelioration of services' quality in Lebanon helps the tax authority in regaining the taxpayers' confidence. Thus, the adaptation of taxes according to citizens' paying capacity results in their satisfaction towards their fair contribution. Thanks to this principle, the progressive tax contributes to the citizens' readiness to fulfill their obligations. Besides, compliance with tax regulations in particular and with all regulations, requires equal commitment of all citizens. Therefore, tax amnesties should not be granted, and tax optimization should be fought as these

two factors increase the feeling of unfairness.

Taxpayers' resistance towards the payment of taxes goes back to the fact that they do not receive specific compensation for their contribution. Discursively, they must notice that taxes' payment improves their living conditions as tax compliance is linked to the quality of public services available to citizens. Yet, according to the Office of the Minister of State for Administrative Reform (2011), the control procedures on public administrations and institutions have weakened because Lebanon has not witnessed any reform movement for more than forty years. Subsequently, this fact has impeded the provision of the required services within the framework of public employees' work. The interpersonal relations of government officials with each other and their association with political parties are so strong that they result in significant violations of applicable laws. Thus, such system of connections has a detrimental influence on fiscal policy. According to Lledo and Poplawski-Ribeiro (2013), weaker institutional framing decreases the likelihood of introducing fiscal adjustment. Subsequently, administrative reform is required in Lebanon in order to make institutions inclusive. Actually, administrative reform can be achieved through political reform and the removal of political cover from all pillars of Lebanese administration. In detail, the interventions of politicians in administrative affairs decreased the employees' loyalty towards the state and transformed ministries into private properties. Moreover, deficiency in management is caused by many factors, while sectarianism and confessionism are the most prominent ones. Due to these properties of the state politics, leaders and high-ranking governors, unlike junior officers, cannot be punished or dismissed. Since it is challenging to separate administration from politics, it is impossible to appoint the right employee in the appropriate position. When the employee's political and sectarian cover is removed, supervisory authorities will be able to carry out their function.

Furthermore, structural reforms in Lebanon are required. The increase of potential and productivity of the Lebanese economy might be attained by adopting a private sec-

tor growth policy and enhancing social equity. Hence, the implementation of security and stability measures, law enforcement, growth promotion, and creation of new job opportunities are efficient steps that contribute to the economic change. In addition, Fakh and Marrouch (2015) demonstrated that electricity strategies' implementation affect the growth on the short-run. As well, evidence are available of a long-term relationship between employment and growth. Besides, sectorial reforms shall support structural changes by creating new production units, modernizing current production units, upgrading existing infrastructure, and restructuring the Electricity of Lebanon establishment (EDL) to function as a private sector entity. Additionally, solid wastes should be managed by creating modern factories and modernizing existent ones in order to recycle such trash for the production of new energy sources. Moreover, problems related to water must be solved. This process must contribute to a better handling of underground water resources, water networks, sewage, and it must support telecommunications. Such changes can be achieved by the liberalization of the infrastructure in order to attract private investments. Hence, these reforms might reduce the prevailing imbalances in the Lebanese economy on the financial and social levels. Furthermore, institutions are able to be inclusive through economic institutions. Inclusive economic institutions are those that allow and encourage participation of a great number of people in economic activities that make the best use of their talents and skills. Inclusive economic institutions create the incentives and opportunities that are necessary to exploit the energy, creativity and entrepreneurship in society (Acemoglu and Robinson 2012). In fact, all the structural and sectorial needed reforms require the investment of the Lebanese workforce skills. Hence, this pattern might lead to the real integration of the Lebanese taxpayers in society. It might also give them the chance to interact with the authority, to generate revenues and to raise their confidence in the government. Accordingly, this scheme might contribute to the enhancement of tax compliance and the reduction of tax evasion. Among the required changes in the structure of current policies, one can name the anti-corruption actions in line with the international agreements of the UN (United Nations), reform, and governance in the fiscal and customs

sectors. These changes may include government digital transformation (e-government), modernization and restructuring of the public sector, in addition to the creation of a suitable environment for the promotion of the private sector activity and initiatives. As for Lebanon, administrative decentralization that is expected to be achieved by the national agreement (Taef 1989), is regularly mentioned by analysts and politicians as a major solution to issues such as the economic development of territories, and the efficiency of public action for the fight against terrorism and corruption. It must be noted that these dominant structural reforms remain unfulfilled.

3.4.5 Tax System Reform

The Lebanese tax system is still based on the scheduled taxation system that considers each income according to its source and subjects the exercised activity to a particular tax that has its regime, mechanism, and rate and responds to a logic of its own. Hence, this system differs from most foreign plans that adopt the general income tax system. This state of affairs had and still has the apparent consequence of the multiplication of administrations and services in charge of the management, collection, and control of each of these scheduled taxes along with their corollary of costs and charges. The other consequence corresponds to the possibility of keeping out of the tax scope a wide range of activities and revenues that are not foreseen or classified by the laws and regulations in force. Thereby, fraud, corruption, tax evasion, and inconsistency are promoted due to the lack of transparency and the absence of tax equity (Daher 2017). Besides, the tax reforms should focus on the introduction of the general income tax in order to encompass the most significant number of taxpayers and fight against the underground economy. This step is achieved through the prevention of any incomes' exemption, including speculative ones. In addition, a broad administrative and financial decentralization must be taken into consideration as it contributes to the equitable and sustainable development of the regions. Another reform must be applied regarding the restructuring of the tax system and it mainly relies mainly on indirect taxes. In Lebanon, 70% of taxes are indirect, while in European countries, only one-third of tax

revenues come from indirect taxes. Whereas, the other two-thirds are generated by income taxation (Abdo 2018). For instance, about 65% of the income of mobile operators corresponds to quasi-tax revenue (Abdo 2018). The taxation of consumption without redistribution of wealth and the continued exemptions granted to the richest class will lead to deep social inequalities in Lebanon. However, direct taxes on income and wages remain unjust because of their inconsistency. For instance, the payroll tax is progressive and varies between 4% and 20%. In turn, the tax on the companies of capital (SAL) is fixed at a percentage of 17%, which means that an SME (Small and Medium Enterprise) and a large company are subjected to the same rate (Abdo 2018).

Undoubtedly, there is a widespread unacceptance of the current tax system among Lebanese due to its significant defects. However, the majority of citizens are unfamiliar with it. In fact, changes in the perception and understanding of tax emphasize the importance of the amelioration of financial literacy through the adaptation of educational and public activities. Additionally, the lack of knowledge in tax law and its principles are among the reasons that prompt citizens to refrain from paying tax or reporting their revenue. Therefore, it is not surprising that citizens are attempting to evade taxes as they consider them to be unjustified and inequitable. Moreover, a popular attitude might emerge and question the fairness of the tax system due to the prevailing feeling that a specific group of people obtains more benefits than other ones. This fact is related to their lack of knowledge with the rules of taxation. Thus, transforming tax rules into clear and straightforward ones will contribute to the understanding of the tax law. But, at the same time, this move would not support the enforcement of the law nor it would shape the attitude toward taxes and fiscal citizenship. Furthermore, public authorities must carry out some activities in an effort to achieve more fairness and equity. These activities aim to disseminate information and simplify the tax regulations and procedures. In addition, they aim to promote transparency and accountability in the National Budget and Accounts, and change the stereotypical view towards taxation in an effort to achieve more fairness and equity.

When studying the tax system's reform, tax evasion must be classified as a criminal offense and the optimal probability of auditing must be well defined.

3.4.5.A. Tax Evasion: A Criminal Offense

Tax evasion is a generic term that refers to the efforts made by individuals with the aim to avoid tax payment. Besides, tax evasion usually involves deliberate concealment of the taxpayer's real status from the tax authorities in order to limit the value of taxes to be paid. This distortion occurs through the filing of inaccurate tax reports whether by under-reporting the assets, or by means of two sets of books, false records, false or overestimated retention, declaration of personal expenses as business fees, and concealment of earnings. Additionally, tax evasion in Lebanon is attained in varying degrees regarding the tax applied on wages, profits, capital, consumption, import, and export. Clearly, it is the duty of the state to try to eliminate this phenomenon or reduce it. This could be done by proposing practical solutions for fighting fiscal fraud and by issuing new laws intended to deter violators. According to Cowell (1990), the structuration of the penalty is a way for punishing people by an amount related to the evaded tax rather than merely imposing a fixed penalty. If evasion is mainly kept under control, then few people will know of others who are committing evasion. As a result, citizens will be disinclined to evade the external effect of residents' behavior. However, the non-fulfillment of these rules requires more efforts to dissuade any individual from evading. The implementation of a law that classifies tax evasion as a criminal offense might represent a turning point in fighting against fiscal fraud.

3.4.5.B. Probability of Auditing

In Lebanon, acceptance of bribes by a corruptible tax auditor in exchange of concealing the detected evasion contributes to higher capital accumulation, which in turn leads to a more significant shadow economy. In addition, tax evasion influences both the public provisions and private capital accumulation in two opposite ways. In detail, higher tax

evasion implies more capital accumulation, thus it leads to more growth for the private capitals in the shadow or informal economy. However, it leads to lower tax revenues and less provision of public goods, therefore, this fact results in a lower rate of economic growth that depends on public revenues (Cerqueti and Coppier 2011). In this case, the perceived probability of audit proves to influence on the increase of tax compliance for risk-averse taxpayers (Asnawi 2013). According to Cowell (1990), there is no optimum probability of auditing to be recommended since not all the individuals are risk-averse. Nevertheless, increasing the probability of auditing without applying laws to deter the corruptible agents and without ensuring the needed public provision and the healthy political environment will lead to the reduction of the individuals' production and the fostering of the shadow economy (Cowell 1990). Therefore, the collapse of the state is one of the most detrimental outcomes for such scenario. In order to understand the impact of the probability of auditing p on the level of declared incomes and on economic growth, the capital accumulation model developed in chapter 2 will be used to draw conclusions. Figure 3.5 shows that for varying probability of tax auditing p , the economic growth is not the same.

As previously mentioned in the capital accumulation model, the economic growth γ is the ratio of the aggregate income for the period $t + 1$, \bar{y}_{t+1} over the aggregate income $\bar{y}_t - 1$ for the period t , where income is $y_t = AK_t^{1-\lambda}g_t^\lambda$. Besides, in order to fit the Lebanese scenario, we will resort to the simulation on Matlab where we will consider the probability of bribe acceptance $\eta = 40\%$ and the given bribe's amount θ as 40% of the penalty for the simulations on Matlab plus a government productivity $\lambda = 0.25$. Further, the figure 3.5 shows that the economic growth is higher for the low level of probability of auditing $p = 0.2$ when the tax rate is low. Once the tax rate increases remarkably, economic growth becomes higher for the highest probability of auditing $p = 0.6$.

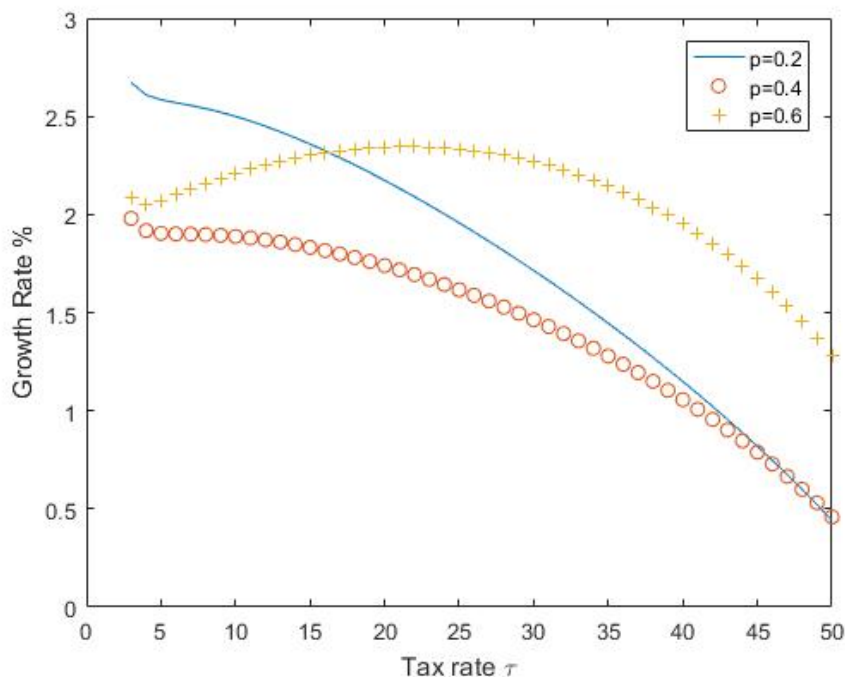


Figure 3.5: Growth rate for varying probability of auditing

Therefore, when the tax rate is low, the private capital K_t represents the driving factor of the economy. Besides, the government's budget g_t that is financed from tax and penalties collections has a weak impact on the individuals' incomes.

As well, a low probability of auditing means a low detection of capitals and a low collection of taxes or penalties. Hence, a higher private capital accumulation occurs as a result of the taxpayers' behavior. However, if the tax rates are high, the government's budget will become more substantial due to the high amounts of collected taxes and penalties. In return, the government budget affects economic growth at a higher rate than individuals' capitals. Hence, a higher probability of auditing means a higher detection of resources susceptible to finance the government budget spending. Figure 3.5 indicates that the optimal rate of auditing probability depends on the overall adopted fiscal politic. In other words, if the government relies on the private capitals to promote the economic growth, a low level of probability of auditing is recommended. However, high probability of tax auditing is required if the government spending is the key factor of the economy.

In short, the optimal institutions that enhance tax compliance and reduce tax evasion in Lebanon must be dedicated to support the interest of the public and not that of a specific category of people. These institutions are committed to sustaining the community needs and reinforcing the diverse segments of the Lebanese society. Thus, they are not restricted to service a particular group in this society. Furthermore, all the legal, political, structural and sectorial reforms that were proposed throughout this chapter impacted on the social performance and cultural fundamentals of the Lebanese taxpayers. Therefore, these reforms will contribute to a better distribution of the government's resources and services. In addition, the integration of the Lebanese human skills in the achievement of the required reforms will provide an opportunity for them to generate revenues as long as the work will be achieved within better framework conditions; as these conditions affect the workforce performance and prompt them to fulfill their duties with a greater sense of engagement. Consequently, when citizens benefit from the public services and their efforts constitute an integral part of the state's achievements, their confidence and trust in the government will increase. This fact, coupled with an improved tax system, will enhance the individuals' commitment and will prompt them to pay their obligations to the government. Subsequently, the traditional extractive Lebanese institutions that were exclusively devoted to serve a limited group of recipients shall be converted into inclusive institutions where all society's members are involved. The figure (3.6) will illustrate the transition from extractive into inclusive institutions and will display the implications of this transition.

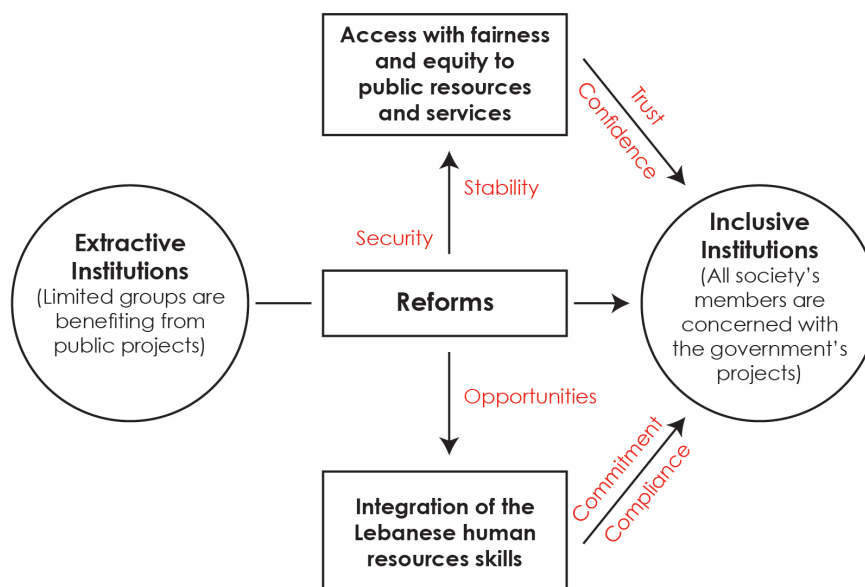


Figure 3.6: Towards inclusive institutions

3.5 Conclusion

Culture of corruption is hugely widespread in Lebanon. Its effects were inflated by the end of the fifteen-year civil war. In fact, the main causes behind its expansion lie in the lack of awareness about corruption, the absence of key anti-corruption institutions, the weak legal framework, in addition to the lack of proper legal implementation mechanisms. Another cause for this expansion is the post-war structure in Lebanon that led to the creation of a power-sharing formula among political and confessional groups and resulted in competition for state resources. Besides, the few and weak institutional control mechanisms were often politically controlled. Thus, the unprecedented spread of corruption throughout the agencies of the state represented a natural consequence. Moreover, the expansion of the state role in the economy in the form of capital expenditure on reconstruction was highly vulnerable to corruption. The reason is due to the magnitude of the projects involved, the multitude of intermediaries, and the different phases of implementation (Pasko 2002, Deeb 2003, Heard 2005, Rasmussen 2005). As well, the borrowed money created more opportunities for rent-seeking activities and

corruptive behavior (Stamp 2005). These, in turn, changed Lebanese politics, as manipulation of the government spending process became a gateway to fortune. Besides, Adwan (2004) names few examples in which public institutions were transformed into tools of nepotism and rent seeking. These examples include the central fund for the displaced, the Council of the South and the Council for Development and Restructuration to name a few. Furthermore, corruption wasn't limited to top ministers and directors of various government agencies, it rather grew within the entire ruling hierarchy. In this sense, most of the public projects were not granted to the most qualified applicants, but rather to those willing to pay the highest bribes. Additionally, bribes that are paid for the purpose of tax evasion cause a loss of treasury imports in Lebanon. In this context, an optimal institutional design results in a higher tax collection, thus it increases the state's income. Consequently, more significant treasury of the government automatically contributes to higher public provisions, a decrease in budget deficits, and a reduction of the state's debt. Due to the low GDP, the introduction of changes to the institutional design is needed in order to improve the state's financial condition.

In this regard, optimal criteria were proposed to make institutions more inclusive and capable of fighting fiscal fraud. In Lebanon, long years of war accompanied with the malfunctioning of control processes resulted in corruption and affected the overall state of the administration. Therefore, Lebanese are asking for institutions that are subject to strict control and characterized by competence and transparency. These institutions must be inclusive and grant equal rights and opportunities, in addition to equal access to all resources and services. It must be noted that efficient public provisions, developed political institutions, and restructured tax system and laws are important factors that affect the Lebanese taxpayer's behavior. Regardless the opinion of the people towards the government, the latter is unquestionably confronted with a set of key challenges that might prompt the administration to undergo a global change and to modify its operative modes. Therefore, in order to create a promising environment for institutions' progression, the government is not only asked to implement

requirements but also to reveal the manner in which these requirements are attained. In addition, properly developed and effective taxation systems are crucial for a well-functioning society. In most economies, taxes are the main source of revenue intended for the public funding of education, health care, public transport, infrastructure and social programs, among others. Therefore, tax policy is one of the most contentious domains of public policy. In fact, determining the optimal tax system can be challenging because context matters when economies want to maximize their welfare. An appropriate tax system must issue proportionate taxes and make sure that the method of tax payment is convenient for taxpayers (World Bank 2020). Furthermore, Lebanon as many of low- income countries, faces an urgent need for revenues in order to enable the resource- poor state to provide and maintain the most basic public services. In fact, the number of financially secure citizens is low whereas they are not willing to pay tax. Moreover, the financially weak ones have almost nothing to pay, yet they resist paying taxes. It follows that the challenge of taxation lies in collecting national revenues from compliant citizens. From this perspective, tax reform consists of changing the structure of the tax system as well as the improvement of key elements responsible for a successful implementation.

Finally, this chapter identified the social, educational, and cultural norms that shape taxpayer's behavior. Moreover, it revealed factors that might have an impact on the Lebanese taxpayers' decisions. A set of reforms that have a primordial effect in the tax compliance behavior were proposed. Besides, it was shown that restructuring of the Lebanese authorities' power might raise the taxpayer's trust in the government and enhance tax compliance. In this context, authorities' power restructuring includes political reform, adjustable design for the electoral law, a redefinition of the judicial power's role, and recognition of the supervisory authority's independence. In addition, the fair exchange between paid amounts and the public services and public institutions' quality strongly affect the citizens' tax behavior. Finally yet importantly, structural reforms are required in order to introduce technological innovations. This type of

reforms can be achieved by decentralizing resources and enhancing public institutions' availability as they represent most prominent result of the tax redistributions.

General Conclusion

This thesis considers all economic, social, political and legal aspects that directly or indirectly affect the taxpayer's conduct. As well, it addresses all the factors that influence his decision to adopt tax evasion or to engage in tax payment. The goal is to establish an appropriate fiscal policy that controls tax evasion and subsequently increases the state's financial revenues. It turns out that tax evasion subject cannot be treated separately from the struggle that the Lebanese citizens are experiencing on the one hand and the government on the other hand. Therefore, people are faced with two choices. They might accept the harsh reality marked by low income in case they belonged to the legal sector. Or else they will decide to venture in order to improve their conditions and increase their revenues in case they belonged to the illegal sector. As for the government, it faces a conflict between its capacity or incapacity to establish an economic, social and political balance that guarantees the public interest. The Lebanese are one of the most productive peoples in the private setting and one of the most abusive peoples in the public setting. This derogatory character is actually due to the violation of their right to access beneficial public services and projects.

Solving the tax evasion issue in Lebanon is not an easy task since this type of economic act is not categorized as a crime; yet it became an acquired and accepted culture that is inherited from one generation to another. Difficulties increase within the framework of continued violations of public revenues; these become more and more complicated under the complicity and connivance of auditors and public agents with agents of private societies. Whatever the political, social, and legal circumstances are,

individuals are economic agents who have only one obsession economically speaking: increase their consumption and augment their savings. In other words, they aim to increase their wealth, which in turn involves the refusal of any form of waste or tax payment; especially if they won't reciprocally receive services that are suitable to be offered by the government. In this context, and with the purpose of reducing tax evasion, the state must increase productive opportunities that create an attractive and appropriate environment for growing investments and increasing society's well-being (education, infrastructure, ...). Yet a fundamental question arises: Is it easy to achieve economic growth on the short term or will it take a long time given the many economic, political and cultural constraints? For this reason, this research sheds the light on all tools that affect the taxpayers' choices and the form of the optimal fiscal policy. This PhD thesis contributes to the theoretical and empirical literature on tax evasion and the required practices to confront this issue. The proposed changes regroup a set of interdependent actions established to enhance tax compliance and implement general procedures. These procedures aim to reduce tax evasion decision and its adverse effects on economic growth. As well, the dissertation focuses particularly on convincing the taxpayers to declare their real incomes voluntarily.

A set of reforms that have a primordial impact on the tax compliance and in restructuring the Lebanese taxpayers' trust are described in the last chapter of this project. Many factors strongly influence the taxpayers' behavior. They include political reforms, the redefinition of the judicial power's role, and the determination of the supervisory authority's independence in addition to the fairness of exchange between paid amounts and the public services. As well, this research underlined the impact of structural, social, and cultural reforms on taxpayer behavior. Political, economic and social practices represent a critical tool that allows the government to gain the taxpayers' trust, improve its general performance, and increase the tax collection. Due to the importance of citizens' willingness to pay taxes, it is in the Lebanese government's best interest to strengthen the confidence of the citizens in the governmental practices

and performance. These implementations are mainly through its inclusive institutions. From a global standpoint, numerous measures must be taken into consideration to reduce the adverse effects of the tax evasion on economic growth. In this context, the subject of this search evolves around three research axes that describe the consequences of the tax evasion on economic growth. First, the Lebanese shadow economy and tax evasion were thoroughly assessed and estimated. Second, the impact of bribe was clearly depicted on the tax evasion decision and the economic growth. Third, an optimal and inclusive institutional design was proposed to reduce the tax evasion and enhance tax compliance. The three main chapters of this PhD dissertation are devoted to the abovementioned topics.

The results of this PhD dissertation stem from the development of the capital accumulation model that estimates the tax evasion impact on individuals' capitals and economic growth. Within this context, two parameters were taken into consideration: the amount of bribe and the probability of bribe acceptance. Similarly, econometric tools were used in the monetary approach to estimate the shadow economy and to specify the variables that impact the official and hidden economy in Lebanon. Although chapters vary in the applied empirical methods, however all approaches are adequate for verifying tax evasion. Thanks to original databases, the usage of econometric models resulted in precise conclusions about the Lebanese economy. Moreover, the development of the capital accumulation model provided the appropriate model for Lebanon by using for the simulations real values for the parameters so that the result conveys the reality of the Lebanese scenario. The below discussion below summarizes the main findings and adequate procedures that encourage tax compliance and reduce tax evasion. In addition, it presents the major contributions of this PhD dissertation to the literature. Finally, this deliberation considers the limitations of this research project, and suggests directions for future investigation based on our current results.

Main findings and policy implications

The main objective of **Chapter 1** was to estimate and analyze the size and impacts of the shadow economy in Lebanon using the monetary approach. The estimated size of the shadow economy during the periods 1998 to 2018 reached a percentage of 36.61% of the GDP. In addition, the tax evasion's share of the shadow economy reached 30.04% in 2018. In fact, the fiscal gap is nearly equivalent to Lebanon's budget deficit. The shadow economy is a vital source of employment and revenue. Despite its advantageous features, its negative impacts may distort the national balance of payments and the demand for money. Subsequently, policymakers are misguided to make inappropriate decisions. The findings documented in this chapter indicate the existence of a large underground economy in Lebanon. The activities of this economy have been expanded due to the high levels of tax evasion and the growth of the informal public sector in the country. As well, the increase in cash transactions of this economy has been attributed to the rise in the establishment of national and international facilities that have been granted to the Syrian refugees by local and international NGOs in addition to the various banks' facilitations. Moreover, the smuggling at the illegal border crossings between Lebanon and Syria along with the domestic worker's file contribute to the development of this phenomenon. This chapter predicts the shadow economy for 2020 and documents recommendations that will help the national authorities in Lebanon to reduce its size and ensure the creation of resources that will finance government expenditure and reduce the ratio of debt to GDP. The prediction of the shadow economy size for 2019 and 2020 showed an enlargement of this phenomenon. The Covid-19 epidemic, the October 19 revolution and the devaluation of the Lebanese currency are the main factors entraining an enlarged shadow economy.

Chapter 2 revealed that the government's adopted fiscal policy is the key factor defining the taxpayer behavior not the bribe. It was shown that the main beneficiaries from the Lebanese government distributions are the public sector employees and the debtors. Lebanon's public administration is viewed as a corrupted sector. Moreover, economy is dominated by a small number of individuals, who controlled access to individual sectors. As well, they extended their privileges and exerted strong influence on the distribution of resources through clientalist practices, on the distribution of resources. Hence, families have become more reliant on their own capacities.

The model's structure within this chapter reported a result that goes in line with the model's structure of Caballé and Panadés (2007). Consequently, a decrease in the hidden income is associated with the raise of the tax rate in case penalties are levied on evaded taxes. However, if penalties are imposed on unreported incomes independently of the tax rate, hidden incomes rise with the tax rate. It was demonstrated that the bribe acceptance accelerates the tax evasion decision when the penalty is not imposed proportionally to the evaded amount of taxes. However, once the law is applied, and the penalty is proportional to the evaded amount of taxes, risk-averse individuals will prefer to declare their assets. It was indicated that the bribe reduces the individuals' sum of capital and the government's budget and leads to lower economic growth. Besides, it was proven that a productive government's budget is an influential factor in the economic growth for a high tax rate. Though the state assets are associated with economic progress, the individuals' capitals are the driving factor of economic growth for a low tax rate. The capital accumulation model of this chapter explains that tax rate, government's productivity rate, and private capitals could be considered as significant tools to enhance economic growth. In fact, optimal combinations of these instruments have a remarkable impact on the official and shadow economy. Our results carry an important implication for policymakers. It contributes to the design of an appropriate fiscal policy by providing evidence concerning the tax rate, the bribe acceptance, the government's budget, and the private capitals. For instance, this model signaled that any proposal intended to impose additional taxes on the Lebanese taxpayers will

be insignificant amid the negative predictions regarding 2019-2020 economic growth. Therefore, greater weight should be given to the adoption of nancial policies that respect the fiscal criteria presented in the chapter.

In **Chapter 3**, an optimal institutional design was proposed in an effort to achieve higher tax collection and an increase in the state's income was proposed. Higher budget assets lead to higher public provisions, lowering of budget deficits, and reduction of the state's debt. According to the World Bank (2016), tax revenue to GDP in Lebanon is 13.9%, which is low-level compared to the developed countries. Due to this, the introduction of changes to institutional design is needed to improve the financial condition of the state. Optimal criteria were suggested for the institutions that fight against fiscal fraud were suggested. In Lebanon, long years of war were accompanied by the malfunctioning of control processes, which resulted in the development of corruption. In fact, high-level corruption is reflected in the overall state of the administration. The Lebanese are asking for institutions that are subjected to strict control and characterized by competence and transparency. Efficient public provisions, developed political institutions, and restructured tax system and laws are significant factors that affect the Lebanese taxpayer behavior. This chapter is devoted to the internal and external factors that might impact Lebanese taxpayers' decisions. A set of reforms that have a primordial impact in tax compliance was proposed. It was demonstrated that a restructuring of the Lebanese authorities' power might raise the taxpayers' trust in the government and enhance tax compliance. Authorities' power restructuring includes political reform, adjustable design for the electoral law, a redefinition of the judicial power's role, and determination of the supervisory authority's independence. The quality and fairness of exchange between paid amounts and the public services and institutions affect the citizens' tax behavior. Structural reforms are required to introduce technological innovations. They can be reached by decentralizing resources and public institutions' availability as they represent the most prominent result of the tax redistributions. Finally, this chapter identified the social, educational, and cultural

norms that shape taxpayer behavior.

Lebanon is characterized by a heterogeneous society that is composed of numerous ethnic groups. It is a country of minorities with no single dominant group. Optimal Lebanese institutional design should consider this fact so that all members feel integrated and not isolated. Interaction among all the state's actors is a key factor towards the attainment of the inclusion concept that makes the citizen-taxpayer feel engaged and committed to the rule of law. In this chapter, it was demonstrated that the inclusion concept starts from the political institutions, passes through the public sector bodies, and finally reaches to the educational and cultural grounds. In general, inclusive initiatives aim to attract underrepresented minorities with regard to ethnicity, sexual orientation, socio-economic background and physical disability. Hence, institutions must reflect a well-structured and respected legal framework. Moreover, individuals pertaining to under-represented groups must believe they belong to the state. Otherwise, this will push them toward more tax evasion and less tax compliance. Subsequently, the development of programs that promote equality and cohesive culture is required. Bracing the inclusive institutions relies on ongoing support and a clear demonstration that tax revenues are distributed with equity and fairness among the diverse society members. Nevertheless, the Lebanese political institutions are extractive. Usually, a small group of people controls political institutions and is unwilling to change. This category of institutions allocates political power to a limited number of people and features a central state that is not strong enough to deliver primary public goods. This chapter sheds the light on an electoral law that might reflect the people say in the political decision-making and urge the Lebanese political institutions to be inclusive, pluralistic and sufficiently centralized. In addition, institutions can enjoy an inclusive character through the economic organizations. Inclusive economic institutions are those that allow and encourage participation of the great proportion of people in economic activities that make the best use of their talents and skills. Furthermore, inclusive economic institutions create the incentives and opportunities that

are necessary to harness the energy, creativity and entrepreneurship in society (Acemoglu and Robinson 2012). In fact, all the structural and sectorial needed reforms require the investment of the Lebanese workforce skills. Hence, this pattern might lead to the real integration of the Lebanese taxpayers in society, give them the chance to generate revenues and increase their confidence in the government. Accordingly, this scheme might contribute to the enhancement of tax compliance and the reduction of tax evasion.

Limitations and Future Research Directions

Based on our study's results, multiple areas can be proposed for further investigations. The suggestion is based on the current conclusion of this work and aims to present new ideas and perspectives that are not studied yet. The first limitation of this research analysis is related to the first two chapters. Since these empirical chapters used databases that are specifically related to Lebanon, it is evident that the outcome may vary depending on databases and chosen values for the simulations. Regarding chapter 3, the recommended optimal reforms and institutions are based on the Lebanese reality of life and the Lebanese general circumstances.

As for the topic of **Chapter 1**, possible future investigations can be dedicated to the estimation of the shadow economy size in Lebanon. If the monetary approach that depends on econometric tools was used in assessing shadow economy, then this assessment can vary according to the databases used for the regression. Similarly, scenarios for the reduction of the hidden economy can vary depending on future changes and circumstances.

With regards to **Chapter 2**, it indicates that the existence of bribes in a system reduces the individuals' capital accumulation and decreases the economic growth, thus strict procedure must be followed to overcome the endemic corruption. The lack of

law enforcement is clearly manifested in the disproportioned imposition of fines to the evaded amount of taxes. The application of laws is a kind of deterrence that has a significant impact on the tax collection and the public resources that finance the government's budget. However, results may vary depending on the parameters' values that are chosen for the simulations.

Concerning the subject of **Chapter 3**, two lines of future research might be adopted. First, it will be interesting to figure out the impact of our suggested optimal institutional design on the tax collection and the economic growth within a new research framework. Second, future research should include other aspects of tax avoidance such as psychological factors (risk-averse, risk-neutral) in order to determine the tax compliance of an economic agent. Indeed, risk level analysis would be a much more precise alternative regarding the environment where taxpayers are operating.

Bibliography

- Abdel-Kader, N. (2010). "*Multiculturalism and democracy: Lebanon as a case study*".
Lebanese National Defense, 72(4), 1-17.
- Abdo, N. (2018). "*The Quest for Social Justice in Lebanon: The need for fair taxation*".
Arab NGO Network for Development.
- Acemoglu, D. and J. Robinson (2002). "*Economic Backwardness in Political Perspective*". NBER Working Paper No. 8831.
- Acemoglu, D., S. Johnson and J. Robinson (2006). "*Institutions as a Fundamental Cause of Long-Run Growth*". Handbook of Economic Growth, Elsevier, 1(A), 385-472.
- Acemoglu, D. and J. Robinson (2010). "*Why is Africa poor?*" Economic History of Developing Regions, 25(1), 21-50.
- Acemoglu, D. and J. Robinson (2012). "*Why nations fail: the origins of power, prosperity, and poverty*". Crown Publishers, United States.
- Ahumada, H., F. Alvaredo and A. Canavese (2007). "*The Monetary Method and the Size of the Shadow Economy: A critical assessment*". Review of Income and Wealth, 53(2), 363-371.
- Ahumada, H., F. Alvaredo and A. Canavese (2009). "*The Monetary Method to Measure the Size of the Shadow Economy: A Critical Examination of its Use*". Revue économique, 60, 1069-1078.

BIBLIOGRAPHY

- Ajaka, J. (2018). "*Al Masirah - Tax Evasion: Where is the State's financial sovereignty*". Retrieved from <https://www.lebanese-forces.com/>
- Akai, N., Y. Horiuchi and M. Sakata (2005). "*Short-run and Long-run Effects of Corruption on Economic Growth: Evidence from State-level Cross-section Data for the United States*". CIRJE, Faculty of Economics, University of Tokyo.
- Alesina, A. and H. Rosenthal (1995). "*Partisan Politics, Divided Government, and the Economy*". Cambridge University Press.
- Alesina, A., S. Ozler, N. Roubini and P. Swagel (1996). "*Political Instability and Economic Growth*". Journal of Economic Growth, 1(2), 189-211.
- Alesina, A. (2005). "*Institutional Reforms in Colombia*". Cambridge, MA: MIT Press.
- Alesina, A. and G. Tabellini and F. R. Campant (2008). "*Why Is Fiscal Policy Often Procyclical?*". Journal of the European Economic Association, 6(5), 1006-1036.
- Alesina, A. and P. Giuliano (2015). "*Culture and Institutions*". Journal of Economic Literature, 53(4), 898-944.
- Ali, M., O. H. Fjeldstad and I. H. Sjursten (2013). "*To Pay or Not to Pay? Citizens' Attitudes Towards Taxation in Kenya, Tanzania, Uganda and South Africa*". Afrobarometer Working Paper No. 143.
- Allan, T. R. S (1993). "*Justice and Fairness in Law's Empire*". The Cambridge Law Journal, 52(1), 64-88.
- Allen, R., Hurcan, Y., and Queyranne, M. (2016). "*The evolving functions and organization of finance ministries*". Public Budgeting and Finance, 36(4), 3-25.
- Allingham, M. G. and Sandmo, A. (1972). "*Income Tax Evasion: A Theoretical Analysis*". Journal of Public Economics, 1(3-4), 323-338.

BIBLIOGRAPHY

- Alloush, M., R. Gatti, C. Chartouni, and J. Silva (2013). "*Informality and exclusion: evidence from matched employer-employee data from Lebanon and Syria*". IZA Journal of Labor Policy, 2, 1-18.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). "*Why Do People Pay Taxes?*". Journal of Public Economics, 48(1), 21-38.
- Alm, J. (1999). "*Tax Compliance and Administration*". Public Administration and Public Policy, 72, 741-768.
- Alm, J., J. Martinez-Vazquez and C. McClellan (2014). "*Corruption and Firm Tax Evasion*". International Center for Public Policy, Working Paper No. 14-22.
- Ameur, F. and N. Tkiouat (2012). "*Taxpayers fraudulent behavior modeling the use of datamining in fiscal fraud detecting moroccan case*". Applied Mathematics, 3(10), 1207-1213.
- Andreoni, J. (1991). "*The Desirability of a Permanent Tax Amnesty*". Journal of Public Economics, 45(2), 143-159.
- Andeweg, R. (2000). "*Consociational democracy*". Annual Review of Political Science, 3(1), 509-536.
- Andrews, M. (2013). "*The Limits of Institutional Reform in Development: Changing Rules for Realistic Solutions*". Cambridge: Cambridge University Press.
- Arnous, M. (2018). "*The Robustness of Sectarian Politics in Lebanon: Reflections on the 2018 Elections*". Civil Society Knowledge Centre, Lebanon Support.
- Arrow, K. (1970). "*Essays in the Theory of Risk Bearing*". North-Holland, Amsterdam.
- Asnawi, M. (2013). "*The impact of audit rate, perceived probability of audit on tax compliance decision*". Journal of Indonesian Economy and Business, 28(2), 286-301.
- Assaf, N. (2004). "*Consociational Theory and Democratic Stability. A Re-examination Case Study: Lebanon*". PhD thesis, University of Warwick, UK.

BIBLIOGRAPHY

- Ayoob, M. (2002). *"Inequality and Theorizing in International Relations: The Case for Subaltern Realism"*. International Studies Association, Published by Blackwall Publishing pg16.
- Baldry, J. C. (1986). *"Tax evasion is not a gamble: A report on two experiments"*. Economics Letters, 22, 333-335.
- Baldry, J. C. (1987). *"Income tax evasion and the tax schedule: Some experimental results"*. Public Finance, 42(3), 357-383.
- Balliet, D., L. B. Mulder and P. A. Van Lange (2011). *"Reward, Punishment, and Cooperation: a Meta-Analysis"*. Psychological Bulletin, 137(4), 594.
- Barclay, S. (2007). *"Consociationalism in Lebanon"*. Master's thesis, University of Pennsylvania, USA.
- Barro, R. (1990). *"Government Spending in a Simple Model of Endogenous Growth"*. Journal of Political Economy, 98(5), 103-125.
- Bellemare, M. F. (2015). *"Rising food prices, food price volatility, and social unrest"*. American Journal of Agricultural Economics, 97, 1-21.
- Besley, T. and T. Persson (2014). *"Why do developing countries tax so little?"*. Journal of Economic Perspectives, 28(4), 99-120.
- Besley, T., A. Jensen and T. Persson (2014). *"Norms, Enforcement, and Tax Evasion"*. IIES, Stockholm University and CIFAR.
- Bethencourt, C. (2013). *"Crime and Growth"*. Mimeo, Universidad de La Laguna.
- Bethencourt, C. and L. Kunze (2015). *"The Political Economics of Redistribution, Inequality and Tax Avoidance"*. Public Choice, 163(3-4), 267-287.
- Bornman, M. (2015). *"The Determinants and Measurement of Trust in Tax Authorities as a Factor Influencing Tax Compliance Behaviour"*. Journal of Economic and Financial Sciences, 8(3), 773-790.

BIBLIOGRAPHY

- Bordo, M. D. and E. N. White (1991). "*A Tale of Two Currencies: British and French Finance During the Napoleonic Wars*". *Journal of Economic History*, 51(2), 303-316.
- Bou Khater, L. (2020). "*Poverty Targeting is not the Solution for Much Needed Social Policy*". Lebanese Center for Policy Studies.
- Bowe, M. and G. Jobome (2001). "*Fraudulent Activity in Financial Institutions and Optimal Incentive Structures for Managing Operational Risk*". *Bank of Valletta Review*, No. 24.
- Bowers, J., and Robinson, P. H. (2012). "*Perceptions of Fairness and Justice: the Shared Aims and Occasional Conflicts of Legitimacy and Moral Credibility*". *Wake Forest Law Review*, 47, 11-13.
- Brownsberger, W. N. (1983). "*Development and Governmental Corruption*", *The Journal of Modern African Studies*, 21(2), 215-233.
- Buehn, A. and F. Schneider (2009). "*Corruption and the Shadow Economy: A Structural Equation Model Approach*". Institute for the Study of Labor: IZA, Discussion Paper No. 4182.
- Buehn, A. and F. Schneider (2012). "*Shadow Economies around the World: Novel Insights, Accepted Knowledge, and New Estimates*". *International Tax and Public Finance*, 19, 139-171.
- Caballé, J. and J. Panadés (2000). "*Tax evasion and Economic growth*". *Public Finance / Finances Publiques*, 52(2), 318-340.
- Caballé, J. and J. Panadés (2007). "*Tax Rates, Tax Evasion, and Growth in a Multi-Period Economy*". *Hacienda Publica Espanola*, 183(4), 67-80.
- Cagan, P. (1958). "*The demand for currency relative to the total money supply*". *Journal of Political Economy*, 66, 302-328.

BIBLIOGRAPHY

- Carson, S.J., A. Madhok and T. Wu (2006). "*Uncertainty, opportunism and governance: The effects of volatility and ambiguity on formal and relational contracting*". Forthcoming in *Academy of Management Journal*.
- Cataloluk, C. (2008) "*Vergi Karssnda Mukelleflerin Tutum ve Davranslar*". *Selcuk Universitesi Sosyal Bilimler Enstitusu Dergisi*, 20, 228-242.
- Cerqueti, R. and R. Coppier (2011). "*Economic growth, corruption and tax evasion*". *Economic Modelling*, 28, 489-500.
- Chazan, N. (1988). "*Patterns of State-Society Incorporation and Disengagement in Africa*". Hebrew University of Jerusalem.
- Chunn, D. E and S. A. M Gavigan (2004). "*Welfare law, welfare fraud, and the moral regulation of the 'never deserving' poor*". *Social and Legal Studies*, 13, 219-243.
- Cobban, H. (2019). "*The making of modern Lebanon*". Routledge.
- Collelo, T. (2003). "*Lebanon: A country study*". In John Rolland (ed), *Lebanon: Current Issues and Background*. New York: Nova Publishers, pp. 29-198.
- Cowell, F. A. (1990). "*Cheating the Government: The Economics of Evasion*". Cambridge, MA: MIT Press.
- Cowell, F. A. and J. P. F. Gordon (1988). "*Unwillingness to Pay: Tax Evasion and Public Good Provision*". *Journal of Public Economics*, 36(3), 305-321.
- Cullen, J., N. Turner and E. L. Washington (2018). "*Political Alignment, Attitudes Toward Government and Tax Evasion*". National Bureau of Economic Research Working Paper Series.
- Cummings, R., M. Mckee and B. Torgler (2009). "*Tax Morale Affects Tax Compliance: Evidence from Surveys and an Artefactual Field Experiment*". *Journal of Economic Behavior and Organisation*, 77, 447-457.
- Daher, K. (2017). "*Les impôts au Liban*". Lebanon: Hachette Antoine Reference.

BIBLIOGRAPHY

- D'Arcy, M. (2009). "*Why Do Citizens Assent To Pay Tax? Legitimacy, Taxation and the African State?*". Legitimacy, Taxation and the African State.
- D'Arcy, M. (2011). "*Why Do Citizens Assent to Pay Tax? Legitimacy, Taxation and the African State*". Afrobarometer Working Paper No. 126.
- Das, J., A. Holla and A. Mohpal (2014). "*The Fiscal Cost of Weak Governance: Evidence From Teacher Absence in India*". National Bureau of Economic Research Working Paper 20299.
- Deeb, M. (2003). "*Syria's Terrorist War on Lebanon and the Peace Process*". Palgrave Macmillan, Washington.
- de Jantscher, M. C. (1990). "*Administering the VAT*". Value Added Taxation in Developing Countries, 171-179.
- Dell'Anno, R. (2003). "*Estimating the shadow economy in Italy: A structural equation approach*". Economics Working Papers 2003-7, Department of Economics, University of Aarhus, Aarhus, Denmark.
- Dell'Anno, R. (2007). "*The Shadow Economy in Portugal: An Analysis with the MIMIC Approach*". Journal of Applied Economics, 10, 253-277.
- Devos, K. (2013). "*Factors influencing individual taxpayer compliance behavior*". Springer Science and Business Media.
- Dincecco, M. (2009). "*Political Regimes and Sovereign Credit Risk in Europe, 1750-1913*". European Review of Economic History, 13, 31-63.
- Directorate of General Security (2017). "*Domestic workers*". <http://www.generalsecurity.gov.lb/en/posts/23>.
- Downs, A. (1957). "*An Economic Theory of Political Action in a Democracy*". Journal of political economy, 65(2), 135-150.

BIBLIOGRAPHY

- Draghi, M. (2015). *"Monetary Policy and Structural Reforms in the Euro Area"*. Prometeia 40, Bologna, Italy.
- Duhigg, C. (2013). *"The Power of Habit: Why We Do What We Do and How to Change"*. Random House.
- Edwards, J. L. (2007). *"An Examination of Undergraduate Civic Engagement Participation, Political Beliefs and Party Affiliation"*. Doctoral dissertation, University of Maryland, College Park.
- Ehrlich, C. (2000). *"Democratic alternatives to ethnic conflict: Consociationalism and neo-separatism"*. Brooklyn Journal of International Law, 26(2), 447-484.
- Eichhorn, C. (2004). *"Tax Evasion and Economic Growth A Neutrality Result"*. Unpublished working paper, University of Munich.
- ESCWA(2016). *"Strategic Review of Food and Nutrition Security in Lebanon"*. ESCWA/WFP Report.
- Fakhoury, T. (2019). *"Power-sharing after the Arab Spring? Insights from Lebanon's Political Transition"*. Nationalism and Ethnic Politics, 25, 9-26.
- Fakhri, R. (2016). *"Informality in Lebanon Diagnosis and Analysis"*. In Arab Watch on Economic and Social Rights 2016 - Informal Labor. Arab NGO Network for Development.
- Fakih, A. and W. Marrouch (2014). *"Who hires foreign domestic workers? Evidence from Lebanon"*. Journal of Developing Areas, 48(3), 339-352.
- Fakih, A. and W. Marrouch (2015). *"The electricity consumption, employment and growth nexus: evidence from Lebanon"*. OPEC Energy Review, 39, 298-321.
- Fakih, A., P. Makdissi, W. Marrouch, R. Tabri, M. Yazbeck (2020). *"Confidence in Public Institutions and the Run up to the October 2019 Uprising in Lebanon"*. IZA Discussion Papers 13104, Institute of Labor Economics (IZA).

BIBLIOGRAPHY

- Feige, E. L. (1979). "*How Big is the Irregular Economy?*". *Challenge Journal*, 22(1), 5-13.
- Feige, E. L. (1989). "*Currency Velocity and Cash Payments in the U.S. Economy: The Currency Enigma*". MPRA (Munich Personal RePEc Archive) Paper no 13807.
- Feige, E. L. (2009). "*New estimates of overseas U.S currency holdings, the Underground Economy and the Tax Gap*". MPRA (Munich Personal RePEc Archive) Paper no 19564.
- Feld, L. P. and B. S. Frey (2007). "*Tax Compliance as the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation*". *Law and Policy*, 29(1), 102-120.
- Feld, L. P. and F. Schneider (2010). "*Survey on the shadow economy and undeclared earnings in OECD countries*". *German Economic Review*, 11(2), 109-49.
- Fjeldstad, O. H. and M. Moore (2008). "*Tax reform and state building in a globalized world*". Cambridge: Cambridge University Press, 235-60.
- French, W. L. and C. H. Bell (1999). "*Organization Development*". Englewood Cliffs, New Jersey: Prentice All.
- Frey, B. S. and L. P. Feld (2002). "*Deterrence and Morale in Taxation: An Empirical Analysis*". CESifo Working Paper No. 760, pp.1-41.
- Frey, B. S. and B. Torgler (2007). "*Tax Morale and Conditional Cooperation*". *Journal of comparative economics*, 35(1), 136-159.
- Fuest, C. and N. Riedel (2009). "*Tax Evasion, Tax Avoidance and Tax Expenditures in Developing Countries: a Review of the Literature*". Report prepared for the UK Department for International Development (DFID), 1-69.
- Gaechter, S. (2006). "*Conditional Cooperation: Behavioral Regularities From the Lab and the Field and Their Policy Implications*". Discussion Papers 2006-03, The Cen-

BIBLIOGRAPHY

- tre for Decision Research and Experimental Economics, School of Economics, University of Nottingham.
- Gamal, A.A.M. and J. Dahalan (2015). "*Estimating the Size of the Underground Economy in the UAE: Evidence from Gregory Hansen Cointegration Based Currency Demand Approach*". Review of Integrative Business and Economics Research, 4(3), 183-206.
- Geha, C. (2019). "*Sharing Power and Faking Governance? Lebanese State and Non-State Institutions during the War in Syria*". The International Spectator, 54, 125-140.
- Gerber, A. S. and G.A. Huber (2009). "*Partisanship and Economic Behavior: Do Partisan Differences in Economic Forecasts Predict Real Economic Behavior?*". American Political Science Review, 103(3), 407-426.
- Giles, D. E. A. and L. M. Tedds (2002). "*Taxes and the Canadian underground economy*". Canadian Tax Paper No.106. Canadian Tax Foundation, Toronto.
- Gordon, J. P. (1989). "*Individual Morality and Reputation Costs as Deterrents to Tax Evasion*". European economic review, 33(4), 797-805.
- Greif, A. (2006). "*Family structure, institutions, and growth: the origins and implications of western corporations*". American economic review, 96 (2), 308-312.
- Guano, E. (2010). "*Taxpayers, Thieves, and the State: Fiscal Citizenship in Contemporary Italy*". Ethnos, 75(4), 471-495.
- Gutmann, P.(1977). "*Subterranean economy*". Financial Analysis Journal, 34, 24-27.
- Hajjar, S. G. (2009). "*The Convolutated and Diminished Lebanese Democracy*". Democracy and Security, 5(3), 261-276.
- Hakansson, N.H. (1970). "*Optimal Investment and Consumption Strategies under Risk for a Class of Utility Functions*". Econometrica, 38(5), 587-607.

BIBLIOGRAPHY

- Hallerberg, M. and J. Von Hagen (1997). *"Electoral institutions, cabinet negotiations, and budget deficits within the European Union"*. CEPR Discussion Paper.
- Hamzeh, A. (2004). *"In the path of Hizbullah"*. New York: Syracuse University Press.
- Harake, W. (2017). *"Priority reforms for the government of Lebanon (English)"*. Washington, D.C: World Bank Group.
- Hashimzade, N., G. D. Myles, and B. TranNam (2013). *"Applications of Behavioural Economics to Tax Evasion"*. Journal of Economic Surveys, 27(5), 941-977.
- Hassan M. and F. Schneider (2016). *"Modelling the Egyptian Shadow Economy: A MIMIC model and A Currency Demand approach"*. Journal of Economics and Political Economy, 3(2), 309-339.
- Hauner, D. and A. Kyobe (2010). *"Determinants of Government Efficiency World Development"*. Elsevier 38(11), 1527-1542.
- Heard, L. (2005). *"When in doubt, blame Syria"*. American Educational Trust 24, 26-34.
- Hernandez, M. A. (2009). *"Estimating the Size of the Hidden Economy in Peru: A Currency Demand Approach"*. Revista de Ciencias Empresariales y Economía, 8(1), 85-104.
- Hernandez, M., J. Jamison, E. Korczyk, N. Mazar, and R. Sormani (2017). *"Applying Behavioral Insights to Improve Tax Collection: Experimental Evidence From Poland"*. World Bank.
- HMRC (2019). *"Tackling Tax Avoidance, Evasion, and Other Forms of Non-Compliance"*. HM Treasury and HM Revenue & Customs policy paper.
- Hoffman, M. (2014). *"Political and Social Attitudes of Lebanese Citizens"*. Information International SAL.

BIBLIOGRAPHY

- Hokamp, S. (2014). "*Dynamics of tax evasion with back auditing, social norm updating, and public goods provision-An agent-based simulation*". Journal of Economic Psychology, 40(C), 187-199.
- Horowitz, D. (1985). "*Ethnic Groups in Conflict*". Berkeley: University of California Press.
- International Monetary Fund (2014). "*Article IV consultation- staff report*". IMF Country Report No 14/237, IMF, Washington, D.C.
- International Monetary Fund (2016). "*World Economic Outlook Database*". Lebanon.
- International Monetary Fund (2017). "*Lebanon: Selected Issues*". International Monetary Fund, Middle East and Central Asia Dept, Country Report No. 17/20.
- International Monetary Fund (2018). "*Historical Public Debt Database- Debt*". Lebanon.
- International Monetary Fund (2019). "*World Economic Outlook: Global Manufacturing Downturn, Rising Trade Barriers*". Washington, D.C: International Monetary Fund.
- International Monetary Fund (2019). "*Staff Report of The 2019 Article IV Consultation- Press Release; Informational Annex; and Statement by the Executive Director for Lebanon*". International Monetary Fund , Middle East and Central Asia Dept.
- IMF, OECD, UN and World Bank (2011). "*Supporting the Development of More Effective Tax Systems: A Report To The G-20 Development Working Group*". Washington D.C, Paris, New York, International Monetary Fund, organization for Economic Cooperation and Development, United Nations, World Bank.
- Ipek, S. and I. Kaynar (2009). "*Vergiye Gonullu Uyum Konusunda Canakkale Iline Yonelik Ampirik Bir Calisma*". Celal Bayar Universitesi IIBF, Yonetim ve Ekonomi, Cilt: 16, S.1, 173-190.

BIBLIOGRAPHY

- James, S. and C. Alley (2002). "*Tax Compliance, Self-Assessment and Tax Administration*". *Journal of Finance and Management in Public Services*, 2(2), 2742.
- Joreskog, K. and A. Goldberger (1975). "*Estimation of a Model with Multiple Indicators and Multiple Causes of a Single Latent Variable*". *Journal of the American Statistical Association*, 70 (351), 631-639.
- Johnson, S., D. Kaufmann and P. Zoido-Lobato (1998). "*Regulatory discretion and the unofficial economy*". *The American Economic Review*, 88(2), 387-92.
- Joulfaian, D. (2009). "*Bribes and Business Tax Evasion*". *European Journal of Comparative Economics*, 6(2), 227-244.
- Jureidini, R. and N. Moukarbel (2004). "*Female Sri Lankan domestic workers in Lebanon: a case of 'contract slavery'?*". *Journal of Ethnic and Migration Studies*, 30(4), 581-607.
- Kaufman, D. and A. Kaliberda (1996). "*Integrating the unofficial economy into the dynamics of post socialist economies: a framework of analysis and evidence*". In: Kaminski, B. (ed.). *Economic Transition in Russia and the New States of Eurasia*. Armonk, NY: M.E. Sharpe, Inc.
- Kaufman, A. (2004). "*Understanding the Sheeba Farms dispute*". *Palestine-Israel Journal*, 11 (1), Retrieved 22 July 2006.
- Khan, A. Q., A. Abbas, A.I. Khwaja and M. Singhal (2017). "*The Pilot Study on Effect of Political Influence on Tax Payment Compliance*". International Growth Centre.
- Kim, Y. (2003). "*Income Distribution and Equilibrium Multiplicity in a Stigma-Based Model of Tax Evasion*". *Journal of Public Economics*, 87(7-8), 1591-1616.
- Kirchler, E. (2007). "*The Economic Psychology of Tax Behaviour*". Cambridge (UK) University Press, Cambridge, 278.

BIBLIOGRAPHY

- Kirchler, E., S. Muehlbacher and H. Schwarzenberger (2011). "*Voluntary Versus Enforced Tax Compliance: Empirical Evidence for the Slippery Slope Framework*". European Journal of Law and Economics, 32, 89-97.
- Kornhauser, M. E. (2007). "*Normative and Cognitive Aspects of Tax Compliance: Literature Review and Recommendations for the IRS Regarding Individual Taxpayers*". Florida Tax Review, 8(6), 601-634.
- Krause, P. (2013). "*The Development of Executive Spending Control: An Evolutionary Account Based on the History of Britain and Germany*". ODI Working Paper.
- Kucera, D. and L. Roncolato (2008). "*Informal Employment: Two Contested Policy Issues*". International Labor Review, 147(3), 321-348.
- Lacko, M. (1996). "*Hidden economy in East-European countries in international comparison*". Working paper, International Institute for Applied Systems Analysis (IIASA), Laxenburg.
- Lacko, M. (1998). "*The Hidden Economies of Visegrad Countries in International Comparison: A Household Electricity Approach*". In: Halpern, L. and Ch. Wyplosz (eds.), Hungary: Towards a Market Economy, Cambridge (Mass.), Cambridge University Press.
- Lacko, M. (2000a). "*Do Power Consumption Data Tell the Story? Electricity Intensity and Hidden Economy in Post-Socialist Countries*". In: Maskin, E. and A. Simonovits (eds.) Planning, Shortage and Transformation: Essays in Honor of Janos Kornai, Cambridge (Mass), The MIT Press.
- Lacko, M. (2000b). "*Hidden Economy an Unknown Quantity? Comparative Analysis of Hidden Economies in Transition Economies, 1989-95*". Economics of Transition, 8(1), 117-149.
- Lebanese Center for Policy Studies (2018). "*LCPS Policy Brief: Why Does Lebanon*

BIBLIOGRAPHY

- Need CEDRE? How Fiscal Mismanagement and Low Taxation on Wealth Necessitate International Assistance*". Lebanon.
- Lebanese Transparency Association (2011). *"National Integrity System Study"*. Lebanon.
- Lebanon Economic Vision (2018). *"Lebanon Economic Vision Full Report"*. Lebanon.
- Lebanon- Syria Borders Report (2011). *"A survey jointly commissioned in 2009 by the New Opinion Workshop and the Lebanon Renaissance Foundation"*.
- Le Borgne, E. and J. T. James (2016). *" Lebanon- Promoting poverty reduction and shared prosperity : systematic country diagnostic"*. Washington, D.C: World Bank Group.
- Levi, M. (1998). *"A state of trust"*. In M. Levi and V. Braithwaite (Eds), *Trust and governance* pp. 77-101. New York: Russell Sage.
- Levi, M., T. Tyler, and A. Sacks (2012). *"The Reasons for Compliance With Law"*. *Understanding social action, promoting human rights*, 70-99.
- Levy, B. (2014). *"Working with the Grain: Integrating Governance and Growth in Development Strategies"*. Oxford: Oxford University Press.
- Lindbeck, A. and M. Persson (2006). *"A Model of Income Insurance and Social Norms"*. Working Paper No. 742, Institute for International Economic Studies, Stockholm.
- Lippert, O. and M. Walker (1997). *"The Underground Economy: Global Evidence of its Size and Impact"*. The Frazer Institute, Vancouver, B.C, pp.350.
- Lijphart, A. (1995). *"Multiethnic Democracy"*. *The Encyclopedia of Democracy*, 3, 853-865.
- Lijphart, A. (1968). *"The Politics of Accommodation: Pluralism and Democracy in the Netherlands"*. Berkeley: University of California Press.

BIBLIOGRAPHY

- Lijphart, A. 1977. *"Democracy in Plural Societies: A Comparative Explanation"*. New Haven: Yale University Press.
- Lledo, V. and M. Poplawski-Ribeiro (2013). *"Fiscal Policy Implementation in Sub-Saharan Africa"*. World Development, Elsevier, 46(C), 79-91.
- Lozza, E., B. Kastlunger, S. Tagliabue and E. Kirchler (2013). *"The Relationship Between Political Ideology and Attitudes Toward Tax Compliance: The Case of Italian Taxpayers"*. Journal of Social and Political psychology, 1(1), 51-73.
- Lustick, I. (1997). *"Lijphart, Lakatos, and Consociationalism"*. World Politics, 50(1), 88-117.
- Mahmalat, M. and Atallah, S. (2018). *"Why Does Lebanon Need CEDRE? How Fiscal Mismanagement and Low Taxation on Wealth Necessitate International Assistance"*. The Lebanese Center for Policy Studies, Beirut Lebanon.
- Makdisi, S. (2000). *"The Culture of Sectarianism: Community, History, and Violence in Nineteenth-Century Ottoman Lebanon"*. Los Angeles: University of California Press.
- Makdisi, S. and M. Marktanner (2009). *"Trapped by consociationalism: The case of Lebanon"*. Topics in Middle Eastern and North African Economies, 11, 1-15.
- Makdisi, S., F. Kiwan and M. Marktanner (2011). *"Lebanon: The constrained democracy and its national impact"*. In Ibrahim Elbadawi and Samir Makdisi (eds), *Democracy in the Arab World: Explaining the Deficit*. New York: Routledge.
- Makdisi, P. and M. Seif Edine (2020). *"Is the elimination of food subsidies the right policy to address Lebanon's public finance crisis?"*. MPRA Paper No. 99070.
- McKinney, J. B. and M. Johnston (1986). *"Fraud, Waste and abuse in government: Causes, consequences and cures"*. Philadelphia, PA: ISHI.

BIBLIOGRAPHY

- Medina, L. and F. Schneider (2017). "*Shadow Economies Around the World: New Results for 143 Countries Over 1996-2014*". Discussion Paper, Department of Economics, University of Linz, pp.30.
- Medina, L. and F. Schneider (2017). "*Shadow Economies around the World: New Results for 158 Countries over 1991-2015*". CESifo Working Paper Series No. 6430.
- Medina, L. and F. Schneider (2018). "*Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?*". International Monetary Fund Working Paper.
- Miculescu, C. (2015). "*Opportunities for Prevention and Fighting Tax Evasion*". *Quaestus*,7, 174.
- Migdal, J.S. (1988). "*Strong Societies and Weak States: State-Society Relations and State Capabilities in the Third World*". Princeton: Princeton University Press.
- Ministry of Finance (2007). "*Reforms at the ministry of finance: A clear vision leading the way*". Lebanon.
- Ministry of Finance (2018). "*Citizen Budget: Financial and Fiscal Awareness Series*". Lebanon.
- Ministry of Finance (2019). "*Citizen Budget: Financial and Fiscal Awareness Series*". Lebanon.
- Ministry of Finance (2019). "<https://tradingeconomics.com/lebanon/government-budget>". Lebanon.
- Mitu, N. E. (2016). "*Taxpayer Behaviour: Typologies and Influence Factors*". *Revue Des Sciences Politiques*, 49, 77-87.
- Murphy, K. (2004). "*The Role of Trust in Nurturing Compliance: a Study of Accused Tax Avoiders*". *Law and human behavior*, 28(2), 187-209.

BIBLIOGRAPHY

- Murphy, K. (2005). "*Regulating More Effectively: the Relationship Between Procedural Justice, Legitimacy, and Tax NonCompliance*". *Journal of law and Society*, 32(4), 562-589.
- Myerson, R. (2004). "*Justice, Institutions, and Multiple Equilibria*". *Chicago Journal of International Law*, 5, 91-107.
- Myles, G. D., and Naylor, R. A. (1996). "*A Model of Tax Evasion With Group Conformity and Social Customs*". *European Journal of Political Economy*, 12(1), 49-66.
- Nelson, S. (2013). "*Is Lebanon's confessional system sustainable?*". *Journal of Politics and International Studies*, 9, 332-387.
- Nikiema, R. and P.Zahonogo (2017). "*Taxpayer behaviour and institutions in Sub-Saharan Africa*". BeFinD Working Papers 0119, University of Namur, Department of Economics.
- North, D. C. (1989). "*Institutions and Economic Growth: An Historical Introduction*". *World Development*, 17(9),1319-1332.
- North, D. C. and B. R. Weingast (1989). "*Constitutions and Commitment: the Evolution of Institutions Governing Public Choice in Seventeenth Century England*". *Journal of Economic History*, 49(4), 803-832.
- North, D. (1990). "*Institutions, Institutional Change and Economic Performance*". Cambridge: Cambridge University Press.
- O'Brien, P. (2011). "*The Nature and Historical Evolution of an Exceptional Fiscal State and its Possible Significance for the Precocious Commercialization and Industrialization of the British Economy from Cromwell to Nelson*". *Economic History Review*, 64(2), 408-446.
- OECD (2017). "*Fighting Tax Crime: The Ten Global Principles*". OECD Publishing, Paris.

BIBLIOGRAPHY

- Office of the Minister of State for Administrative Reform (OMSAR) (2011). *"Strategy for the reform and development of public administration in Lebanon"*. Lebanon.
- Olken, B. A. (2007). *"Monitoring Corruption: Evidence from a Field Experiment in Indonesia"*. Journal of political economy, 115 (2), 200-249.
- Pasko, A.N. (2002). *"Lebanon's Real Economic Woes Are Syrian Induced"*. Middle East Times, Nov 13.
- Pedersen, S. (2003). *"The Shadow Economy in Germany, Great Britain and Scandinavia: A Measurement Based on Questionnaire Service"*. Study No. 10, The Rockwool Foundation Research Unit, Copenhagen.
- Persson, T., G. Roland and G. Tabellini (2000). *"Comparative politics and public finance"*. Journal of Political Economy, 108(6), 1121-1161.
- Persson, Torsten and Guido Tabellini (2000). *"Political Economics: Explaining Economic Policy"*. The MIT Press, Cambridge MA.
- Persson, T. and Tabellini, G. (2006). *"Democracy and development: The devil in the details"*. American Economic Review, 96(2), 319-324.
- Pollitt, C. (2013). *"Context in Public Policy and Management"*. The missing link? pp. 124-130. Cheltenham U.K.: Edward Elgar.
- Prichard, W. (2019). *"Tax, Politics, and the Social Contract in Africa"*. In Oxford Research Encyclopedia of Politics. Oxford University Press.
- Pritchett, L. (2001). *"Where has all the education gone?"*. The World Bank Economic Review, 15(3), 367-391.
- Rasmussen, W. (2005). *"Party in Beirut-pass it on: the times they are a changing"*. The Weekly Standard, March 10.

BIBLIOGRAPHY

- Reinikka, R. and J. Svensson (2004). "*Fighting Corruption to Improve Schooling: Evidence from Newspaper Campaign in Uganda*". Journal of the European economic association, 3 (2-3), 259-267.
- Reynolds, L. G. (1983). "*The Spread of Economic Growth to the Third World: 1850-1980*". Journal of economic literature, 21(3), 941-980.
- Riker, W. H. (1982). "*Liberalism Against Populism Vol. 34*". San Francisco: WH Freeman.
- Robin, B., and Stern, N. (1992). "*Taxation and Development. STICERD Development Economics*". Discussion Paper 42.
- Rossis, N. M. (2011). "*The Informal Economy in Lebanon: Dangers and Benefits*". Durham University.
- Rotberg, R. (2003). "*Failed States, Collapsed States, Weak States: Causes and Indicators*". Washington: The Brookings Institution Press, 1-10.
- Roubini, D. and J. Sachs (1989). "*Political and economic determinants of budget deficits in the industrial countries*". European Economic Review, 33, 903-938.
- Sader, C. (2007). "*A Lebanese Perspective on the Special Tribunal for Lebanon: Hopes and Disillusions*". Journal of International Criminal Justice, 5(5), 1083-1089.
- Sahbaz, K. I., and N. T. Saruc (2012). "*Vergi Ahlakini Etkileyen Faktorler: Sakarya Universitesi Ornegi*". Sakarya Iktisat Dergisi, 1(4), 57-81.
- Salamé, G (ed). (1994). "*Democracy Without Democrats? The Renewal of Politics in the Muslim World*". London: IB Tauris.
- Saliba, I. (2010). "*Lebanon: Constitutional law and the political rights of religious communities*". Library of Congress, 12, 1-8.
- Sandmo, A. (2005). "*The Theory of Tax Evasion: A Retrospective View*". National Tax Journal, 58(4), 643-663.

BIBLIOGRAPHY

- Scartascini, C. G. and W. M. Crain (2001). "*The Size and Composition of Government Spending in Multi-Party Systems*". Paper presented at the annual meeting of the Public Choice Society.
- Schneider, F. and D. Enste (2002). "*The Shadow Economy: Theoretical Approaches, Empirical Studies, and Political Implications*". Cambridge University Press.
- Schneider, F. and A. Buehn (2009). "*Shadow Economies and Corruption All Over the World: Revised Estimates for 120 Countries*". The Open-Access, Open-Assessment E-Journal, 1(2), 2007-9.
- Schneider, F., A. Buehn and C. E. Montenegro (2010). "*Shadow Economies All over the World: New Estimates for 162 Countries from 1999 to 2007*". Policy Research Working Paper 5356.
- Schneider, F., A. Buehn, and C. E. Montenegro (2010). "*New Estimates for the Shadow Economies All Over the World*". International Economic Journal, 24(4), 443-461.
- Schneider, F. and C. C. Willams (2013). "*The Shadow Economy*". Institute of Economic Affairs, London, pp.96.
- Schneider, F. (2016). "*Comment on Feige's Paper Reflections on the Meaning and Measurement of Unobserved Economies: What Do We Really Know about the Shadow Economy?*".
- Schneider, F. and A. Buehn (2016). "*Estimating the Size of the Shadow Economy: Methods, Problems and Open Questions*". IZA Discussion Paper No. 9820 , Bonn, Germany, pp. 42.
- Shleifer, A. and R. Vishny (1993). "*Corruption*". The Quarterly Journal of Economics, 108(3), 599-617.
- Sidani, Y. M., A. J. Ghanem and M. Y. Rawwas (2014). "*When Idealists Evade Taxes: the Influence of Personal Moral Philosophy on Attitudes to Tax Evasion Lebanese Study*". Business Ethics: A European Review, 23(2), 183-196.

BIBLIOGRAPHY

- Sjoberg, O. (2000). "*Duties in the Welfare State. Working and paying for social rights*". Swedish Institute for Social Research Dissertation Series No. 42.
- Slemrod, J. (1998). "*On Voluntary Compliance, Voluntary Taxes, and Social Capital*". National Tax Journal, 51(3), 485-491.
- Slemrod, J. (2018). "*Tax compliance and enforcement*". NBER Working Paper No. 24799. National Bureau of Economic Research.
- Smith, P. (1994). "*Assessing the size of the underground economy: the Canadian statistical perspectives*". Canadian Economic Observer, 11, 1633.
- Somsen, H. (2016). "*The rise and fall of confessionalism in the Netherlands: Linkages to Lebanon*". Lecture. The Issam Fares Institute, Beirut.
- Stein, E., E. Talvi and A. Grisanti (1998). "*Institutional Arrangements and Fiscal Performance: The Latin American Experience*". NBER Working Paper No. 6358. Cambridge, MA: National Bureau of Economic Research.
- Sumpf, D., V. Isaila and K. Najjar (2016). "*The Impact of the Syria Crisis on Lebanon*". In I. S. Kotsireas, A. Nagurney, and P. M. Pardalos (Eds.) Dynamics of Disasters-Key Concepts, Models, Algorithms, and Insights. Springer Proceedings in Mathematics and Statistics. doi:10.1007/978-3-319-43709-5.
- Sweindan, O. D. (2016). "*Political Instability and Economic Growth: Evidence from Jordan*". Review of Middle East Economics and Finance, 12(3), 1-22.
- Tanzi, V. (1980). "*The underground economy in the United States: estimates and implications*". Banca Nazionale del Lavoro, 135, 427-453.
- Tanzi, V. (1982). "*The underground economy in the United States and abroad*". Lexington Books, 147-163.
- Tanzi, V. (1983). "*The underground economy in the United States: annual estimates, 1930-1980*". IMF Staff Papers, 30(2), 283-305.

BIBLIOGRAPHY

- Tanzi, V. and A. Pellechio (1995). "*The Reform of Tax Administration*". IMF WP/95/22, February, Washington: IMF
- Tanzi, V. and H. Davoodi (1997). "*Corruption, public investment and Growth*". Working paper of the International Monetary Fund, WP 97/139.
- Taylor, N. (2002). "*Understanding Taxpayer Attitudes Through Understanding Taxpayer Identities*". V. Braithwaite, Taxing Democracy, 71-92.
- Tedds, L. M. (2005). "*The Underground Economy in Canada*". University Library of Munich, Germany. Paper No. 4229.
- The Central European Bank (2017). "*The Central European Bank annual report 2017*". The World Bank.
- The Ministry of Finance. (2019). "*Citizen Budget*". Lebanon, the Ministry of Finance.
- The World Bank (2011). "*The challenge of informality in the Middle East and North Africa*". World Bank, Washington, DC.
- The World Bank (2012). "*The World Bank annual report 2012*". The World Bank.
- The World Bank (2015). "*Lebanon: Promoting Poverty Reduction and Shared Prosperity. A Systematic Country Diagnostic*". The World Bank Group, Middle East and North Africa Region.
- The World Bank (2016). "*Lebanon Economic Monitor: A geo-economy of risks and reward*". Lebanon.
- The World Bank (2017). "*Lebanon Economic Monitor*". The World Bank Group, Middle East and North Africa Region.
- The World Bank (2018). "*Lebanon's economic outlook - October 2018*". Lebanon.
- The World Bank (2018). "*Why Aren't More Lebanese Women Working?*". MENA Knowledge and Learning, Quick Notes Series Number 170.

BIBLIOGRAPHY

- The World Bank (2019). *"The World Bank annual report 2019"*. Lebanon.
- The World Bank (2019). *"Lebanon's Economic Outlook - October 2019"*. Lebanon.
- The World Bank (2019). *"Lebanon Overview - April 2019"*. Lebanon.
- The World Bank (2019). *"Lebanon is in the Midst of Economic, Financial and Social Hardship, Situation Could Get worse"*.
- The World Bank (2019). *"World Bank Paying Taxes 2020 report"*.
- The World Economic Forum. (2014). *"The Global Competitiveness Report: 2014-2015"*. Geneva, Switzerland: The World Economic Forum.
- The World Inequality Database (2018). *"World Inequality Report"*.
- Torgler, B. (2003). *"Tax Morale, Rule-Governed Behaviour and Trust"*. Constitutional Political Economy, 14(2), 119-140.
- Torgler, B. (2004). *"Cross-Culture Comparison of Tax Morale and Tax Compliance: Evidence From Costa Rica and Switzerland"*. International Journal of Comparative Sociology, 45(1-2), 17-43.
- Torgler, B., and F. Schneider (2005). *"Attitudes Towards Paying Taxes in Austria: an Empirical Analysis"*. Empirica, 32(2), 231-250.
- Torgler, B. (2007). *"Tax Compliance and Tax Morale: a Theoretical and Empirical Analysis"*. Edward Elgar Publishing.
- Torgler, B. and F. Schneider (2007). *"What shapes attitudes toward paying taxes? Evidence from multicultural European countries"*. Social Science Quarterly, 88(2), 443-470.
- Traboulsi, F. (2007). *"A History of Modern Lebanon"*. 2nd ed London: Pluto Press.
- Transparency International (2011). *"Global Corruption Barometer"*. <http://www.transparency.org/gcb201011>

BIBLIOGRAPHY

- Transparency International (2019). "*Corruption Perceptions Index 2019 and Global Corruption Barometer*". Lebanon.
- Traxler, C. (2010). "*Social Norms and Conditional Cooperative Taxpayers*". European Journal of Political Economy, 26(1), 89-103.
- Tuay, E. and I. Guvenc (2007). "*Turkiye'de Mukelleflerin Vergiye Bakis Acisi, Gelir Idaresi Baskanligi, Mukellef Hizmetleri Daire Baskanligi*". Yayn, 51, Kasm 2007.
- Tyler, T. R. (1990). "*Why People Obey the Law: Procedural Justice*". Legitimacy, and Compliance.
- Tyler, T. R. (1990). "*Why People Obey the Law*". New Haven: Yale University Press.
- Tyler, T. R. (2006). "*Psychological Perspectives on Legitimacy and Legitimation*". Annual review of Psychology, 57, 375-400.
- Van Schendelen, R. (1984). "*The views of Arend Lijphart and collected criticisms*". Acta Politica, 19(1), 19-49.
- Venes, N. (2010). "*A Theoretical Approach to The Political Economy of Fiscal Cyclicity, Forecasts and Consolidations, Lusiada*". Economia and Empresa. Lisboa, n.Q 11.
- Verdeil, E. (2008). "*Water and electricity networks between stress and reform: from post-civil war reconstruction to the new Lebanese wars*". The Politics and Planning of Destruction and Reconstruction in Lebanon, Oxford, United Kingdom.
- Weck, H. (1983). "*Schattenwirtschaft: Eine Moglichkeit zur einschränkung der öffentlichen Verwaltung (Vol. 22)*". Eine ökonomische Analyse. Finanzwissenschaftliche Schriften.
- Weick, K. E. (2001). "*Making sense of the organization*". Oxford: Blackwell.

BIBLIOGRAPHY

- Weingast, B. R., K. A. Shepsle and C. Johnsen (1981). "*The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics*". *Journal of Political Economy*, 89, 642-664.
- Weiss, M. (2008). "*Institutionalizing Sectarianism: The Lebanese Ja'fari Court and Shi'i Society Under the French Mandate*". *Islamic Law and Society*, 15(3), 371-407.
- Weiss, M. (2009). "*The historiography of sectarianism in Lebanon*". *History Compass*, 7, 141-154.
- Wickberg, S. (2012). "*Overview of corruption and anti-corruption in Lebanon*". Retrieved from <http://www.u4.no/publications/overview-of-corruption-and-anti-corruptionin-lebanon/>
- Wiegand, K. (2009). "*Reformation of a terrorist group: Hezbollah as a Lebanese political party*". *Studies in Conflict and Terrorism*, 32 (8), 669-680.
- Williamson, O. (1975). "*Markets and Hierarchies, Analysis and Antitrust Implications: A Study in the Economics of Internal Organization*". New York, NY: Free Press.
- Witt, U. (2011). "*Can sustainable consumption be learned?*". *Journal of Evolutionary Economics*, 11, 23-36.
- Yacoub, G. (2005). "*Lebanon Security Dilemma: A Strategic Reading into Lebanon's Political History*". *Global Integrity* 68, Washington DC.
- Yitzhaki, S. (1974). "*A Note on Income Tax Evasion: A Theoretical Analysis*". *Journal of Public Economics*, 3(2), 201-202.
- Zagaris, B. (2000). "*Financial Stability Forum Published Ranking of Offshore Financial Centres*". *International Business Law*, 28, 393.
- Zaky, M. and S. El-khishin (2016a). "*Fiscal Governance in Egypt: Strengthening Budgetary Institutions to Counteract Political Fragmentation*". *International Journal of Economic Research*, 13(7).

BIBLIOGRAPHY

Zaky, M. and S. El-khishin (2016b). "*Fiscal Institutions in Egypt: Is there a necessity for Reform?*". ERF Working Papers, WP1027.