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EFFECT OF ECONOMIC INDICATORS ON THE PERFORMANCE OF BANKS: TIME SERIES ANALYSIS FOR THE ECONOMIC CRISIS AT LEBANON

Economic indicators enable economists to judge whether economic performance has improved or deteriorated, the banking sector is correlated with almost all parts of an economy, therefore, most economic indicators are useful to analyze the performance, the efficiency, and the banks investments. The aim of this paper is to perform a simultaneous time series analysis, between the years 2014 and 2019, for the main economic indicators and for selected variables of Lebanese banks, this analysis will reveal the trend, the correlation, and the extent of the interdependence between the economic indicators and the performance of Lebanese banks. In conclusion, most economic indicators in Lebanon during the last decade prompted banks to adopt a high interest-rate policy to attract deposits in USD and invest this money to buy government bonds or put the excess cash with the central bank, which made banks unable to manage risks in an effective manner. The high dollarization of deposits at Lebanese banks will create liquidity problem if the government faces any default risks in the future. The increasing exposure to the high public debt in Lebanon is a major source of credit risks for Lebanese banks and is expected to weaken the balance sheet strength of most banks, according to analysts and rating agencies.

Keywords: economic indicators; banking sector performance; trade balance; gross domestic product; national debt; dollarization; budget deficit; financial market; interest rate.

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ВЛИЯНИЕ ЭКОНОМИЧЕСКИХ ПОКАЗАТЕЛЕЙ НА ЭФФЕКТИВНОСТЬ ДЕЯТЕЛЬНОСТИ БАНКОВ: АНАЛИЗ ВРЕМЕННЫХ РЯДОВ В КОНТЕКСТЕ ЭКОНОМИЧЕСКОГО КРИЗИСА В ЛИВАНЕ

Экономические показатели позволяют экономистам судить, улучшилась или ухудшилась экономическая эффективность. Банковский сектор связан почти со всеми частями экономики, поэтому большинство экономических показателей полезны для анализа эффективности и банковских инвестиций. Целью данной статьи является одновременный анализ временных рядов между 2014 г. и 2019 г. для основных экономических показателей и для отдельных переменных ливанских банков; этот анализ выявит тенденцию, корреляцию и степень взаимозависимости между экономическими показателями и эффективностью ливанских банков. Большинство экономических показателей Ливана за последнее десятилетие побудили банки принять политику высоких процентных ставок для привлечения депозитов в долларах США и инвестирования этих денег в покупку государственных облигаций или передачу избыточных денежных средств в центральный банк, в результате чего банки не могли эффективно управлять рисками. Высокая долларизация депозитов в ливанских банках создаст проблему с ликвидностью, если правительство столкнется с какими-либо рисками дефолта в будущем. По мнению аналитиков и рейтинговых агентств, растущая подверженность высокому государственному долгу в Ливане является основным источником кредитных рисков для ливанских банков и, как ожидается, ослабит устойчивость баланса большинства банков.

Ключевые слова: экономические показатели; показатели банковского сектора; торговый баланс; валовой внутренний продукт; национальный долг; долларизация; дефицит бюджета; финансовый рынок; процентная ставка.

Introduction. The banking sector plays an essential role in nearly every economic activity with most economic indicators are correlated with the banking sector performance.

Investment decision for each bank should incorporate an evaluation of its specific fundamentals and financial health, in addition, it should take into considerations the overall economic situation and expectations. The Lebanese banking sector is considered to be resilient and the backbone of the Lebanese economy, but its performance was affected in 2018 as a result of the slowdown in the Lebanese economic activities as the GDP has significantly dropped from around 10 % in 2008 to less than 2 % in 2018. This slow down covers the main sectors including; the tourism sector, the commercial sector, the real estate sector, the foreign direct investment, with exports contracted significantly and simultaneously the balance of payments turned from a surplus to a deficit. In addition, international rating agencies warned that the major credit risk for Lebanese banks is their high exposure to the growing Lebanese public debt which impacted negatively their credit rating, in 2018 around 59 % of the public debt is held by the banking sector.

The banking sector has marked its niche as one of the most important financial sectors that accelerates the economic activities. Indeed, the health of any economy can progress or slow down depending on the performance of its banks. In both the Great Depression of 1929 and the economic recession of 2008, the banking sector was one of the major factors that contributed to the witnessed economic meltdowns. It is thus important to analyze what economic factors affect the Lebanese banking sector, this discussion will prove that the recent fluctuation of the Lebanese economy has influenced the banks substantially and affected their strategies, and perhaps the Lebanese banks underestimated the inherited risks from the deterioration of most economic indicators.

Review of Literature. Boyd [1] assessed empirically an economically significant and negative relationship between inflation and both banking sector development and equity market activity. Söylemez and Ahmed [2] critically examined the role that banks play in the new economy to make concrete suggestions, they suggested that banks should undertake rigorous internal control measures to reduce the high charges so as to establish a judicial banking system, also the bank of Ghana should develop a robust regulatory framework to avoid cyber risk and Ponzi banking schemes. Ross, Norman and Thorsten found that the economic growth is positively influenced by the exogenous component of financial intermediary development, and that the differences in legal and accounting systems across countries explain the differences in the level of financial development [3].

Zougheib discussed the recent challenges facing the Lebanese banks, and how the high exposure of Lebanese banks to the Lebanese public debt accompanied with the collapse of most economic indicators have affected dramatically their credit rating [4]. Ghalayini indicated that while dollarization in Lebanon is no more explained by inflation, changes in the consumer price index is mainly caused by dollarization [5]. Havi and Enu confirmed that monetary policies implemented by the Bank of Ghana should promote favorable investment atmosphere, and ensure economic growth and stability; through appropriate stabilization of interest rates, lending rates, inflationary rates and exchange rates, to promote and [6].

Data and Methodology. Economic indicators enable economists to judge whether economic performance has improved or deteriorated, the banking sector is correlated with almost all parts of an economy, therefore, most economic indicators are useful to analyze the performance, the efficiency, and the banks investments. The aim of this paper is to perform a simultaneous time series analysis, between the years 2014 and 2019, for the main economic indicators and for selected variable of the Lebanese banks, this analysis will reveal the trend, the correlation, and the extent of the interdependence between the economic indicators and the performance of Lebanese banks. To perform this analysis, secondary data will be collected from; banks' annual reports, world bank and the international monetary fund reports, Lebanese ministry of finance, central bank of Lebanon, and other international journals. The data collected about the Lebanese economy include; balance of trade, national public debt, gross domestic product GDP, interest rate and deposits' dollarization, budget deficit, infla-

tion rate, financial market, and overall economic productivity and growth. The data collected about the Lebanese banking sector include; total assets, interest and non-interest income, net profit, total deposits with the central bank, total loans and advances to customers, total deposits, and investments.

Data Analysis for Economic Indicators and Bank Variables. The following section will introduce the time series data, between the years 2014–2019, for the main economic indicators at Lebanon and for selected variables of the Lebanese banks that are inter-correlated with these indicators. Also, there will be a discussion regarding the trend discovered in this data, and whether banks' performance was affected by this economic trend. Finally, there will be several recommendations and actions that should be taken by the Lebanese government and banks to reduce the negative impact of the deterioration of most economic indicators on their performance.

Trade Balance. The trade balance for a country is the difference between the values of exported goods and imported goods. A trade surplus occurs when the trade balance value is positive while a negative trade balance leads to trade deficit. The long reconstruction efforts in Lebanon over the last three decades have led the country to consistent both budget and trade balance deficits. In 2019, the trade deficit at Lebanon reached 15.5 billion USD as 85 % of the country's consumptions were imported. The fig. 1 shows the trade balance deficit of Lebanon between 2014 and 2019.

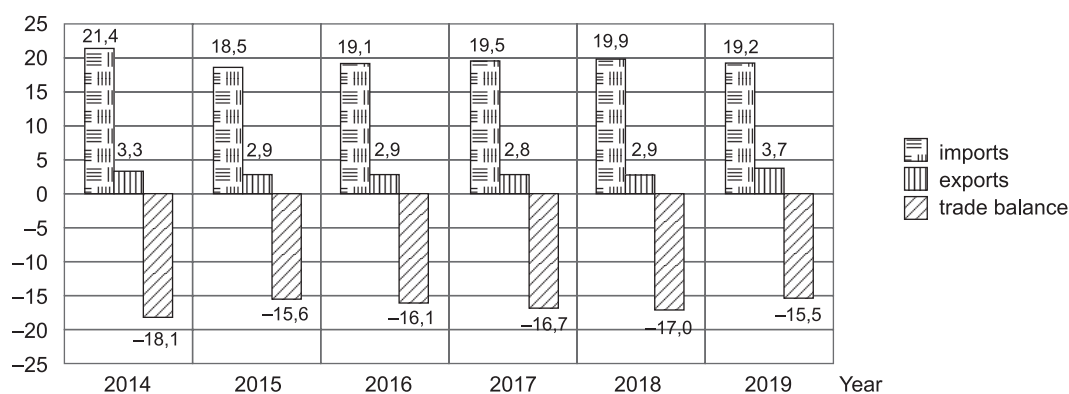


Fig. 1. Trade balance in Lebanon between 2014–2019, billion USD

Source: compiled by the author on the basis of data from the Ministry of Finance in Lebanon.

Financial Market. Beirut Stock Exchange (BSE) is among the oldest exchanges in the Middle East, it was established in 1920. During the 1950–1960 period, the Lebanese economy witnessed a significant activity as, various industrial, banking and service companies listed their stocks on the BSE, putting it at the forefront of the regional markets with a total of 50 listed bonds. Today, ten companies are listed in Beirut Stock Exchange, among them only six banks are listed which are; Audi, BLOM, Bank of Beirut, BLC, Byblos, and BEMO. However, it is worth mentioning that BSE is basically not an economic indicator since two of the main columns of the Lebanese economy, namely, tourism and services sectors, are not included in the bourse.

Budget Deficit. A budget deficit is the annual shortfall between government spending and tax revenue, the deficit is the annual amount the government need to borrow primarily by selling government bonds to the private sector. The budget deficit has direct consequences on the economy such as rise in the national debt, higher interest rate and debt interest pay-

ments, higher future taxes and lower government spending, and may cause a decrease in the public sector size. The fig. 2 shows the budget deficit in Lebanon as a percentage of GDP between 2014–2019.

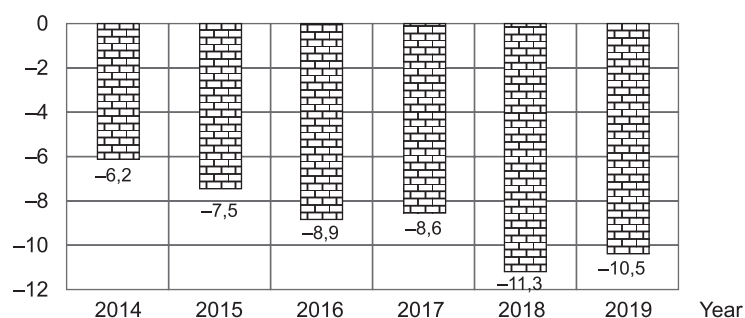


Fig. 2. Budget deficit in Lebanon between 2014–2019, percentage of GDP

Source: compiled by the author on the basis of data from the Ministry of Finance in Lebanon.

Gross Domestic Product. The gross domestic product (GDP) is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time. The presence of large deposits at Lebanese banks could push the GDP in Lebanon to exceed 100 billion USD annually, however, the higher interest rates and the large investments of Lebanese banks in government bonds reduced the investments in productive projects, statistics show that in average the share of main economic sectors in Lebanon's gross domestic product (GDP) between 2014–2019 are as follows; agriculture is 3 %, industry contributed approximately 16 % and the services sector contributed about 74 %. The Lebanese economy entered into a contraction state since 2018 as a result of the economic meltdown in Lebanon, and with the spread of Covid-19 in 2020, the growth was negative of 20.3 %. The fig. 3 shows the GDP growth in Lebanon between the years 2009–2020.

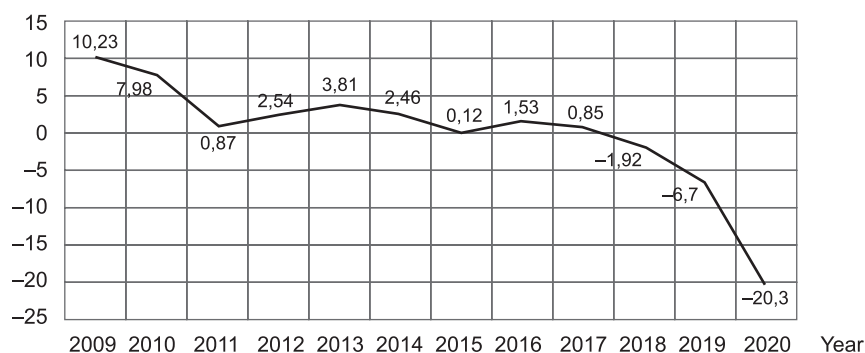


Fig. 3. GDP Growth in Lebanon between 2009–2020, %

Source: compiled by the author on the basis of data from the World Bank.

Interest Rate and Dollarization. Higher interest rate tends to moderate economic growth, increases the cost of borrowing, reduces disposable income, and therefore limits the growth in consumer spending. Despite that interest rates in 2018 on Lebanese Lira deposits have been raised to attractive levels ranging from 10 to 15 or even 20 % for specific offers,

however, bank reports disclosed an increase in the dollarization trend in private sector deposits that reached 69.5 % at the end of the third quarter of 2018, compared to 66.9 % at the end of 2017. Lebanon's interest payments as a percentage of government revenue stood in 2018 at 50.84 %, the highest in the world.

Currency stability encouraged expats to continue sending money home, buy property and even deposit cash in local banks. It is estimated that in 2018, Lebanese abroad sent remittances up to 12.5 % of Lebanon's GDP, keeping the economy afloat. The dollarization at Lebanon contributed to its growing wealth divide, where Lebanon's top 1 % earned 25 % of the country's GDP, making it one of the most unequal economies in the world. In turn, this has led to a surge in conversions from Lebanese pounds to U.S dollars and in turn steered a surge in the Lebanese interbank rates. As a result, the Central Bank intervened in order to support the Lebanese pound by encouraging banks to increase interest rates on Lebanese pound deposits. The fig. 4 shows the interest rate on deposits between 2014–2019.

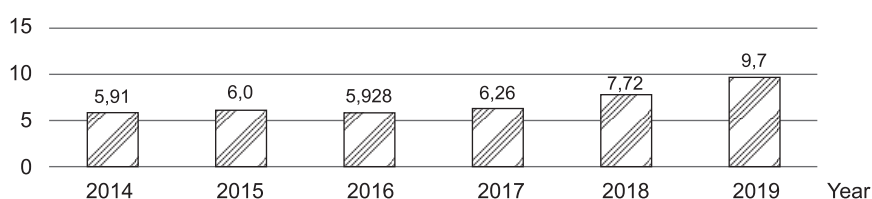


Fig. 4. Deposit Interest Rate in Lebanon between 2014–2020, %

Source: compiled by the author on the basis of data from the Central Bank of Lebanon.

Lebanese Public Debt. After the end of the civil war in 1989, the Lebanese government started its path to economic recovery in 1991. In October 1992, the government led by the late Prime Minister Rafic Hariri approved and implemented a restructuring plan to reestablish the economic stability and regain the confidence lost in the economy and to stabilize the fluctuation of Lebanese Pound. Initially, the government was hoping to rely on external financial support, yet when said aid failed to fully materialize, the government started borrowing domestically by issuing high yielding Treasury bills to finance the reconstruction phase. Due to the high cost of borrowing the government's expenditures continue to outpace its revenues till our present time, resulting as such in recurrent fiscal deficits that called for additional government borrowings to finance said gaps. As a result, gross public debt soared by 1973 % from \$3.39 billion in 1993 to \$85.1 billion in 2018, thus expanding at a compounded annual growth rate of 13.2 %. At the end of 2018, gross public debt stood at LL 128,338 billion (US\$ 85.1 billion), a 7.0 % increase from the end of 2017. Domestic currency debt reached LL 77,852 billion at the end of 2018, an increase of 5.1 % from the end of 2017. Foreign currency debt amounted LL50,486 billion (US\$ 33.5 billion) at the end of the year 2018, a 10.2 % increase from the end of 2017 amount. External debt is the portion of a country's debt that was borrowed from foreign lenders, including commercial banks, governments, or international financial institutions. External Debt in Lebanon increased to 32 275.30 USD Million in June from 32145.30 USD Million in May of 2019. Lebanon sovereign debt recorded 152 % of the country's Gross Domestic Product (GDP) in 2018. The fig. 5 shows the trend of the Lebanese national debt, and its internal and external components between 2014–2015.

Lebanese Banking Sector. The Lebanese banking sector is financially strong and stable, Lebanese economy rely heavily on banks to provide the needed funds to individuals and businesses. Over the last 50 years the number of Lebanese banks varied between 60 to 92 banks. There were 65 Lebanese banks operating in 2018, classified as follows; 50 commercial banks and 15 investment banks.

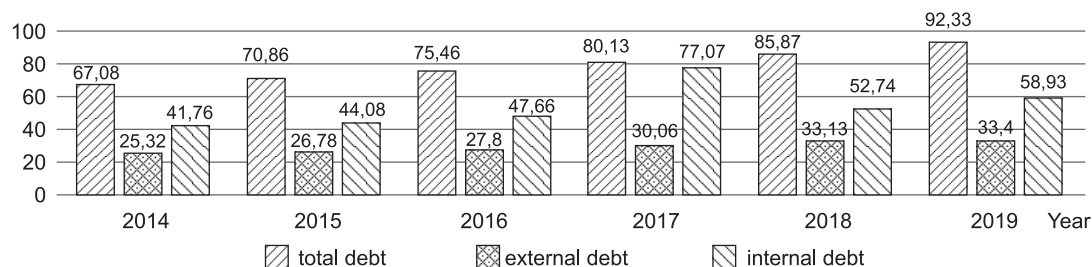


Fig. 5. National Debt in Lebanon between 2014–2015, billion USD

Source: compiled by the author on the basis of data from the Central Bank of Lebanon, BDL.

The increasing exposure to the high public debt in Lebanon is a major source of credit risks for Lebanese banks and is expected to weaken the balance sheet strength of most Lebanese banks, according to analysts and rating agencies. All international rating agencies have warned that Lebanese banks will face unfavorable conditions if they continue to hold the majority of the government's bonds in their portfolios. Lebanese banks including the Lebanese central bank hold about 60 % of the nation's public debt. There are few growth opportunities for Lebanese banks within the country's thin market. Total assets of Lebanese banks are about 5 times the Lebanese Gross Domestic Product (GDP), this situation leaves the 65 banks to compete at a small market with a population of only 5 million, and with far less than required private investments. The poor sovereign ratings for Lebanon have affected negatively the ratings of Lebanese banks and motivated them to accelerate their plans for regional expansion.

One criticism raised by ratings agencies about Lebanese banks is their willingness to lend to the government over the private sector, the high yield from investments in government securities compared to private credit investment return, and the lack of other investment opportunities have encouraged Lebanese banks to hold a risky percentage in the government bonds. This is an attractive profitability tool for banks in the short-term, but it represents also a structural weakness in the long term because of the government's low sovereign rating. Their excessive exposure to sovereign risk has started to worrying most banks as they are increasingly trying to move away from their traditional dependence on government securities. The following table shows the trend of the main eight variables of banks between 2014–2018.

The trend of the main eight variables of banks between 2014–2018, million USD

Indicator	Year				
	2018	2017	2016	2015	2014
Total Assets	265,095	240,030	225,133	212,419	203,286
Customer Deposits	190,588	187,109	181,939	175,209	167,619
Cash & Deposits with Central Bank	985,50	76,870	60,784	47,859	45,820
Investments	68,213	67,149	72,855	73,275	67,461
Loans & Advances to Customers	65,788	68,892	67,938	66,619	63,309
Net Interest-Income	4,572.26	4,238.41	3,887.02	3,666.60	3,448
Total Profit	2,314.79	2,437.91	2,316.09	2,060.58	1,906.74
Net Fees & Commissions	969.08	994.67	1,636.38	962.59	955.93

Source: compiled by the author on the basis of the Annual Reports of Lebanese Banks.

Conclusion. Lebanon's financial meltdown since 2019 has been derailed by corruption and mismanagement followed by the ruling sectarian. Lebanon national debt mountains to around to 150 % of GDP which is considered one of the highest burdens in the world. The trade balance deficit in Lebanon is considered the main economic and financial problem in the country for the past two decades, despite the remittances of expatriates which amount to nearly eight billion USD annually and that reduced the severity of the trade deficit, however, this economic problem has worsened over time with no serious attempts to address it. The trade balance deficit in Lebanon was a result of several economic strategies that lasted for thirty years and has impacted substantially the monetary and fiscal policies pursued by the country. The monetary policy implemented by fixing the value of the Lebanese pound against the US dollar over three decades has inflated artificially the purchasing power of Lebanese citizens which increased largely the consumption of imported products.

The high interest rate environment has led to a rise in the cost of investments, it also motivated savers to deposit their money at banks instead of investing in productive projects. The reluctance to invest in productive projects has reduced the capacity of Lebanon to increase exports and simultaneously increased its dependence on imported goods which compounded dramatically the trade deficit balance. Statistics show that agriculture and industrial sectors altogether contribute only 18 % of the country's GDP, while the service sectors (hotels, hospitals, universities, schools, and other service companies) contribute around 75 %, this distribution explains why imports exceed heavily the country's exports, and leaves the country vulnerable if the service sectors face troubles.

The ineffectiveness of the Lebanese financial market demotivated Lebanese companies and banks to list their stocks at Beirut Stock Exchange (BSE) and has prevented companies including banks from attracting local and foreign shareholders. The budget deficit of the Lebanese government represents the biggest dilemma for the Lebanese economy and creates serious risks to the financial sector. The most prominent reasons for this deficit are; the inflated number of employees in the public sector, the billions of interests in USD paid annually by the government on servicing its public debt, and the money wasted through corruption activities and brokerages paid on projects implemented by government agencies. Lebanese banks continue to finance the government despite the risks associated with this action, banks do this for two main reasons; the intervention of political parties in their decisions, and because banks think that renewing this financing could prevent the default of the government and therefore, they avoid or at least delay losing their original investments. Over the period 1998–2020, the Lebanese government paid more than 85 billion USD of interest to service its public debt.

In conclusion, most economic indicators in Lebanon during the last decade prompted banks to adopt a high interest-rate policy to attract deposits in USD and invest this money in government bonds and put the remaining cash with the central bank, this strategy made banks unable to manage risks in an effective manner. The high dollarization of deposits at Lebanese banks will create liquidity problem if the government faces any default risks in the future. Lebanese government must take decisive actions on reform in order to compete with other countries in the Middle East.

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MODEL OF INNOVATION ADOPTION IN BANKING SECTOR

In today's competitive markets, innovation is seen as a critical factor in a banks' long-term success. Innovation is an important tool for banks to gain market advantage. In this article the model of financial innovation adoption in banking sector was explained. The organizational variables are linked to the adoption of internet banking by financial institutions. Structural variables are linked to the adoption of internet banking by organizational customers. Individual variables of the main decision-maker must be examined to obtain a positive influence on the probability of success of financial innovation adoption.

Keywords: innovation; banking sector; innovation adoption; financial model; organizational variables; individual variables; structural variables.

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МОДЕЛЬ ВНЕДРЕНИЯ ИННОВАЦИЙ В БАНКОВСКОМ СЕКТОРЕ

На сегодняшних конкурентных рынках инновации рассматриваются как решающий фактор долгосрочного успеха банков. Инновации — это важный инструмент банков для получения рыночного преимущества. В данной статье объясняется модель внедрения финансовых инноваций в банковском секторе. Организационные переменные связаны с внедрением интернет-банкинга финансовыми учреждениями. Структурные переменные связаны с внедрением интернет-банкинга клиентами организации. Необходимо изучить индивидуальные характеристики основного лица, принимающего решения, чтобы оказать положительное влияние на вероятность успеха внедрения финансовых инноваций.

Ключевые слова: инновации; банковский сектор; внедрение инноваций; финансовая модель; организационные переменные; индивидуальные переменные; структурные переменные.

The concept of innovation is playing an increasingly important role in an increasingly competitive and dynamic banking market. Banks work in an unpredictable business environment. According to Tajeddini, in order to be successful and achieve consistency in performance, banks must not only seek new prospects but also be highly innovative [1, p. 530]. Innovation is critical for both start-ups and existing businesses to have a competitive advan-