FINANCIAL DEVELOPMENT AND GROWTH IN HUNGARY. A CASE STUDY APPROACH

Kunofiwa Tsaurai*

Abstract

This study investigated the relationship between financial development and economic growth in Hungary using a case study approach. Majority of previous studies on the same or similar topic have so far used regression and or econometric methodologies to examine the nature of the relationship between financial development and economic growth. Not a single study the author is aware of used a case study approach to discuss the relationship between the two variables. It is against this background that the author decided to use the case study approach that allows the author to really deepen an understanding of the relationship between the two variables in Hungary. Apart from being narrowly focused on regression or econometric approaches, previous studies on the same or similar topic in Hungary excluded a broad range of financial development variables. The current study departs from these previous studies as it used a case study approach and taken into account a broad range of financial development variables. From the trend analysis done in section 3, it appears that the relationship between financial development and growth in Hungary during the period under study is not clear. A definite and clear cut conclusion could not be reached about the relationship between the two variables in Hungary hence the use of econometric data analysis approaches in conjuction with the case study approach is recommended.

Keywords: Financial Development, Economic Growth, Case Study, Hungary

Department of Banking, Risk Management and Finance, University of South Africa, P.O Box 392, UNISA, 0003, Pretoria, South Africa

1 Introduction

Recent research on the relationship between financial development and economic growth has produced varying and inconclusive results. Findings have to a larger extent varied with the proxies of financial development and economic growth, geographical case studies, econometric techniques and type of data used. The literature on the relationship between financial development and economic growth falls into four distinct groups: (1) the financial development-led economic growth, (2) economic growth-led financial development, (3) feedback and (4) the neutrality perspective. The financial development led economic growth perspective which was supported by a majority of empirical work (see Table 1) argues that economic growth is driven by financial development whilst the economic growth led financial development perspective says that financial development is spurred by economic growth. In the feedback perspective, both variables affect each other whilst the neutrality perspective finds no relationship between the two variables. The current study seeks to contribute to the debate by examining whether there existed any relationship between financial development and growth in Hungary during the period ranging from 1991 to 2012.

The current study deviates from other previous studies on the same subject in that (1) it makes use of the case study and (2) it uses a broad range of financial development indicators. To the best of the author's knowledge, no previous study on this subject exists that have used the case study approach in conjunction with such a broad range of financial development data sets. Previous research on the same or similar topic used regression and econometric data analysis in Hungary, thus making the current study a unique one. The case study approach shows how actually the financial development data related to the growth data during the period from 1991 to 2012 although it might be difficult to draw clear conclusions under such a framework.

2 Review of related literature

The literature on the financial development-economic growth nexus is divided into four groups. These are financial development led economic growth hypothesis, economic growth-led financial development hypothesis, the feedback hypothesis and the neutrality hypothesis. The feedback hypothesis is when both financial development and economic growth affect each other whilst there is no relationship between the two variables under the neutrality hypothesis. Table 1 shows a summary of the literature on the financial development and economic growth nexus.

Table 1. Summary of the financial development-economic growth nexus literature

Author	*Country/Countries of study*	*Estimation and testing procedures used*	*Research findings*
Al-Malkawi et al (2012)	United Arab Emirates (UAE) from 1974 to 2008	Time series analysis - Autoregressive distributed lag (ARDL)	Their study showed a feedback effect between economic growth and financial development as measured by M2/GDP.
Murinde (2012)	African countries	Time series	The study observed that financial development positively affected economic growth via information asymmetry and pricing risk reduction.
Greenwood et al (2013)	A sample of 45 countries	Cross country analysis	Financial intermediation was found to have had a significant positive impact on economic growth.
Hossein & Yazdan (2007)	10 emerging countries from 1968 to 2007	Panel data analysis	Their findings supported the financial development-led economic growth hypothesis.
Ono (2012)	Russia from second quarter of 1999 to second quarter of 2008.	Time series analysis - Vector Autoregressive (VAR) model	Money supply was found to have had a significant impact on economic growth. The study also observed that economic growth led to increased banking sector loans in Russia.
Hye & Islam (2013)	Bangladesh from 1975 to 2009	Time series analysis - Autoregressive distributed lag (ARDL)	Their study showed that real interest rates negatively influenced economic growth in the short and long run Bangladesh.
Sassi & Goaied (2013)	17 MENA countries from 1960 to 2009	Cross country data analysis	Financial development had a negative impact on economic growth. The combined effect of financial development and information and communication technology (ICT) significantly positively influenced economic growth in MENA countries that were under study.
Campos et al (2012)	Argentina from 1896 to 2000	Time series analysis – PARCH model initially developed by Ding et al (1993)	Financial liberalization had a positive impact on economic growth in the long run. In the short run, financial liberalization had a small negative influence on economic growth in Argentina.
Uddin et al (2013)	Kenya from 1971 to 2011	Time series analysis – ARDL procedure	Their study noted that financial development had a significant positive effect on economic growth in the long run in Kenya.
Ibrahim (2012)	Nigeria from 1979 to 2010	Time series analysis – Error Correction Model (ECM)	Broad money supply was found to have had a significant positive influence on economic growth. The same study observed an inverse causality relationship between loans disbursement to the private sector and the performance of the manufacturing sector.
Aye (2013)	Nigeria from 1960 to 2011	Time series analysis – Vector Autoregressive (VAR) and VECM approach.	No long run causality relationship between financial deepening, economic growth and poverty. The study also observed a feedback effect between financial deepening and economic growth in the short run in Nigeria.

Table 1. Summary of the financial development-economic growth nexus literature (continued)

Author	*Country/Countries of study*	*Estimation and testing procedures used*	*Research findings*
Oluitan (2012)	Selected African countries from 1970 to 2005	Panel data analysis	A feedback relationship between financial development and economic growth was detected in African countries that were part of the study.
Tash & Sheidaei (2012)	Iran from 1966 to 2010	Time series analysis	The joint impact of financial development and trade liberalization had a significant positive influence on economic growth in Iran.
Mercan & Gocer (2013)	Brazil, Russia, India, China & Turkey from 1989 to 2010	Panel data analysis	Their study noted that financial development, foreign direct investment and trade openness significantly and positively contributed towards economic growth.
Misati & Nyamongo (2012)	34 Sub Saharan countries from 1983 to 2008	Cross country data analysis	Financial liberalization had a negative effect on economic growth whilst foreign aid and human capital formation positively affected economic growth in Sub Saharan Africa.
Cavenaile & Sougne (2012)	6 Organization for Economic Cooperation and Development (OECD)	Panel data analysis	Institutional investors had a long run significant positive on economic growth in Belgium and Canada. On the other hand, banking sector development and institutional investors negatively affected economic growth in United States, Spain, Japan and Chile.
Bojanic (2012)	Bolivia from 1940 to 2010	Time series analysis – Granger regressions and ECM models.	The study revealed a uni-directional causality running from financial development and trade openness towards economic growth.
Zhang et al (2012)	286 Chinese cities from 2001 to 2006	Cross section data analysis – Generalized Methods of Moments (GMM).	Financial development positively impacted on economic growth after China joined the World Trade Organization. This finding is contrary to the existing literature that says that the distorted nature of the China's banking sector negatively affects economic growth in China.
Bittencourt, M. (2012)	4 Latin American countries from 1980 to 2007	Cross country data analysis	The study observed that financial market liquidity had a positive influence on economic growth across all the Latin American countries.
Ndlovu (2013)	Zimbabwe from 1980 to 2006	Time series analysis –ECM approach	The study detected a uni-directional causality running from economic growth towards financial development in the long run in Zimbabwe.
Kendall (2012)	Indian districts from 1991 to 2001	Cross country data analysis	Less developed banking sector was found to be responsible for slowed economic growth in Indian districts. On the other hand, the combination of higher human capital development and less developed banking sector had a significant impact on economic growth in India.
Qin & Ndiege (2013)	Tanzania from 1990 to 2012.	Time series analysis – Granger causality test.	The impact of savings on economic growth was more than that of credit/loans in Tanzania.

Table 1. Summary of the financial development-economic growth nexus literature (continued)

Author	Country/Countries of study	Estimation and testing procedures used	Research findings
Adu et al (2013)	Ghana from 1961 to 2010	Time series analysis - ARDL	Private sector credit to GDP ratio or the private sector as a ratio of total credit significantly positively impacted on economic growth in Ghana. However, broad money supply negatively affected economic growth in Ghana.
Kagochi et al (2013)	7 Sub Saharan Africa from 1991 to 2007.	Panel regression analysis – Granger causality tests.	Their study observed a bi-directional causality relationship between stock market development and economic growth. Causality running from economic to banking sector development was also detected in Sub Saharan Africa.
Prete (2013)	30 countries that include Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Finland, France, Greece, Hungary, India, Indonesia, Ireland, Italy, Japan, Malaysia, Mexico, Netherlands, Norway, Philippines, Portugal, Spain, Sweden, Switzerland, Thailand, United Kingdom, United States and Venezuela.	Correlation analysis	Economic growth was positively influenced by the literacy levels than financial development across all the countries that were under study.
Adusei et al (2013)	Ghana from 1971 to 2010	Time series analysis – Generalized Method of Moments (GMM) approach.	Their study observed that economic growth was negatively influenced by financial development.
Menyah et al (2014)	21 African countries from 1965 to 2008.	Panel data analysis – bootstrap panel causality framework.	Financial development had a negligible influence on economic growth in African countries.
Khadraoui & Smida (2012)	70 countries from 1970 to 2009.	Panel data analysis – GMM approach.	The study supported the financial development led economic growth hypothesis.
Hardaker (2012)	42 emerging market countries from 1995 to 2006.	Time series analysis	Stock market and banking sector development influenced economic growth in a positive way in emerging economies.
Pan & Wang (2013)	89 countries from emerging market, industrial and developing countries from 1970 to 2009.	Cross country data analysis – Bayesian Dynamic Factor Model.	Their study observed a non-linear causality relationship between financial development and economic growth. It further noted a certain threshold level of financial development must be exceeded before the economy benefits from financial development.

Source: author compilation

It appears from the empirical literature review (Table 1) that the financial development led growth hypothesis is the most common hypothesis.

3 Financial development and Economic Growth in Hungary

According to World Bank (2014), total stock traded value as a ratio of GDP increased by 0.43 percentage points, from 0.34% in 1991 to 0.77% in 1995 whilst GDP per capita went up by 34.16% during the same time frame (US$3 331.54 in 1991 to US$4 469.60 in 1995). However, the period from 1995 to 2000 saw total stock traded value as a ratio of GDP and GDP per capita going up by 25.02 percentage points and 3.22% respectively. Whilst total stock traded value as a ratio of GDP plummeted by 4.42 percentage points, from

25.79% in 2000 to 21.37% in 2005, GDP per capita massively gained from US$4 613.71 in 2000 to US$11 092.43 in 2005.

Furthermore, total stock traded value as a ratio of GDP declined by a paltry 0.95 percentage points, from 21.37% in 2005 to 20.42% in 2010 before losing another 11.85 percentage points (from 20.42% in 2010 to 8.58% in 2012). On the other hand, the period from 2000 to 2005 saw GDP per capita going up by a massive 140.42% before further increasing by another 16.82%, from US$11 092.43 in 2005 to US$12 958.27 in 2010. Last but not least, the subsequent two year period saw GDP per capita losing 1.34%, from US$12 958.27 in 2010 to US$12 784.30 in 2012 (see Figure 1 & 3).

Figure 1. Total stock traded value (% of GDP) and GDP per capita (% changes) for Hungary
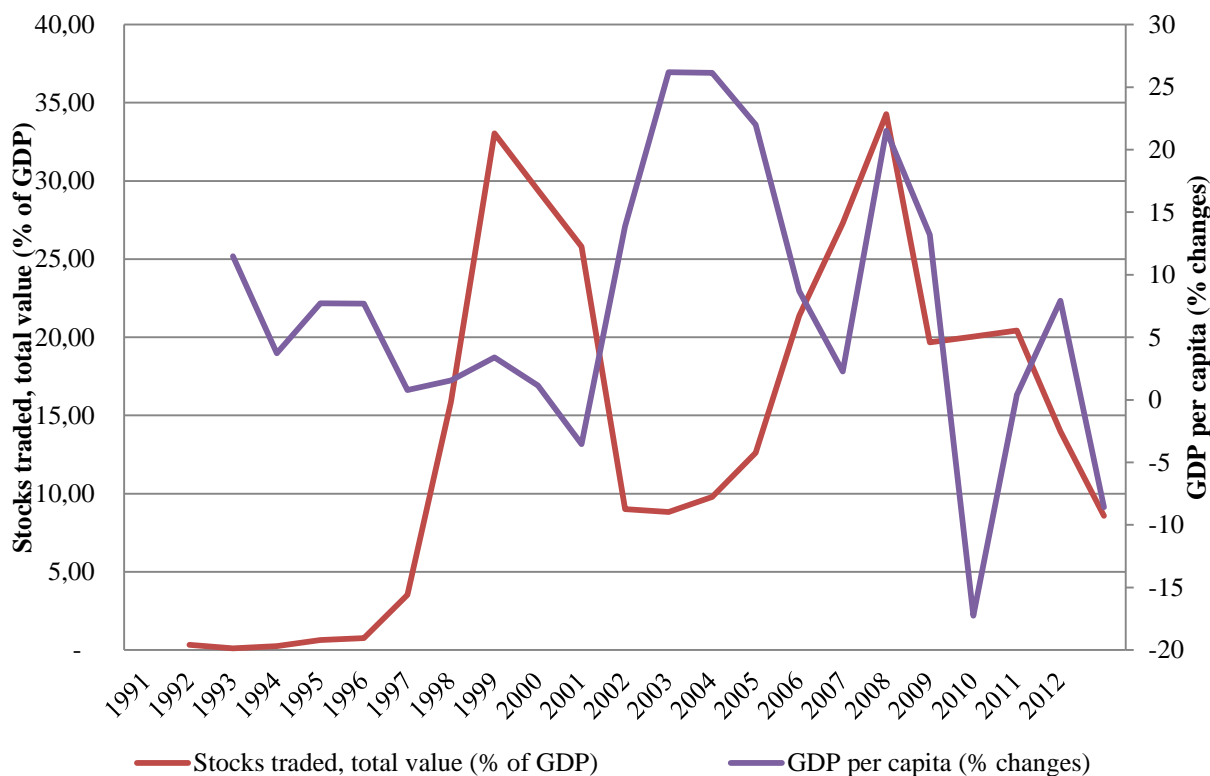
Source: World Bank (2014)

The banking sector development proxy known as the domestic credit to private sector by banks (% of GDP) declined by 16.05 percentage points, from 37.81% in 1991 to 21.76% in 1995 before gaining 10.19 percentage points during the subsequent five year period to end the year 2000 to 31.95% (see Figure 2).

The five year period from 2000 to 2005 was characterized by a 11.71 percentage points increase in domestic credit to private sector by banks (% of GDP). The latter actually went up from 31.95% in 2000 to 43.67% in 2005. On the other hand, domestic credit to private sector by banks (% of GDP) surged

from 43.67% in 2005 to 61.36% in 2010, representing a 17.70 percentage points increase. This was before losing 10.33 percentage points, from 61.36% in 2010 to 51.04% in 2012 (refer Figure 2).

Figure 3 shows that total stocks traded value went up by 203.42%, from US$117 million in 1991 to US$355 million in 1995 before further going up by a massive 3 322.58% during the subsequent five year period ranging from 1995 to 2000. Total stocks traded value gained another 96.79%, from US$12 150.16 million in 2000 to US$23 910.86 in 2005 before further going up by 10.69% during the subsequent five year period to end the year 2010 at US$26 466.12

million. This was before it experienced a 58.90% decline, from US$26 466.12 million in 2010 to US$10 877.60 million in 2012 (refer to Figure 3).

Table 2 shows that stock market capitalization (% of GDP) increased by 3.74 percentage points, from 1.46% in 1991 to 5.20% in 1995 whilst domestic credit provided by the financial sector ratio (% of GDP) abbreviated as (DCFS ratio) declined by 18.29

percentage points during the same time period. Stock market capitalization ratio recorded a 20.32 percentage points increase, from 5.20% in 1995 to 25.52% in 2000 before further gaining by 3.60 percentage points during the subsequent five year period (from 25.52% in 2000 to 29.11% in 2005) – refer to Table 2.

Figure 2. Domestic credit to private sector by banks (% of GDP) and GDP per capita (% changes) for Hungary
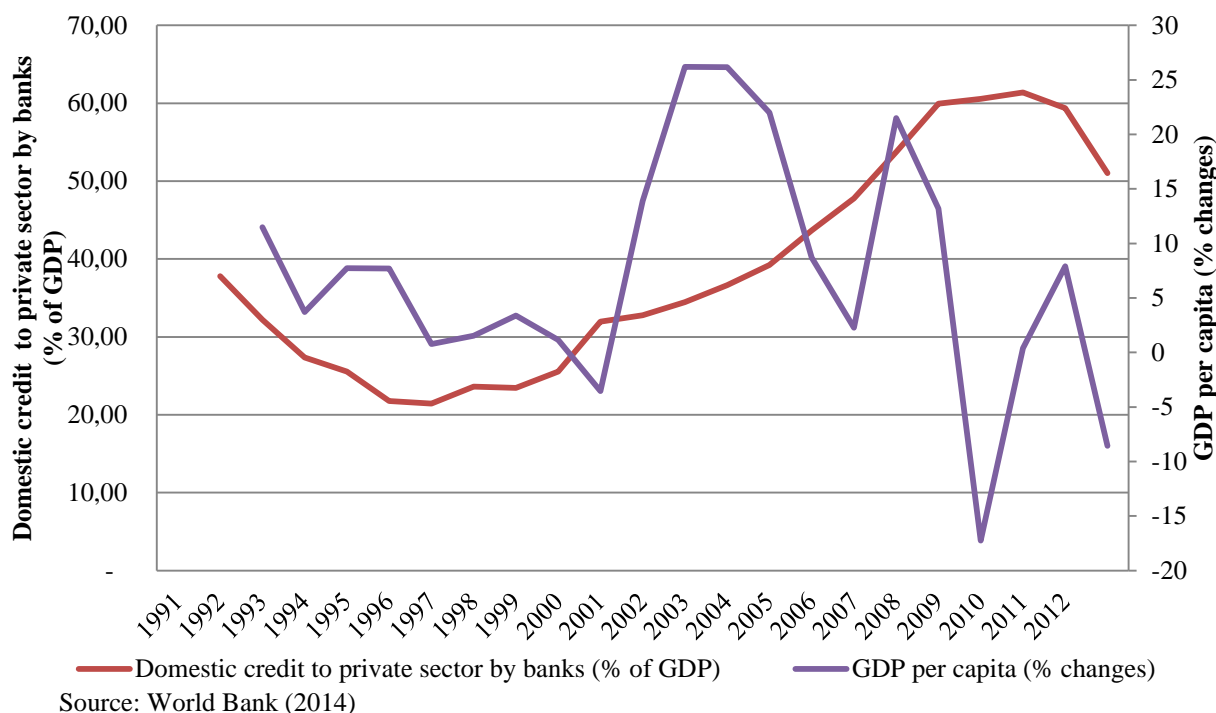

Source: World Bank (2014)

Figure 3. Total stocks traded value (US$ Millions) and GDP per capita (US$) Trends for Hungary (1991 -2012)
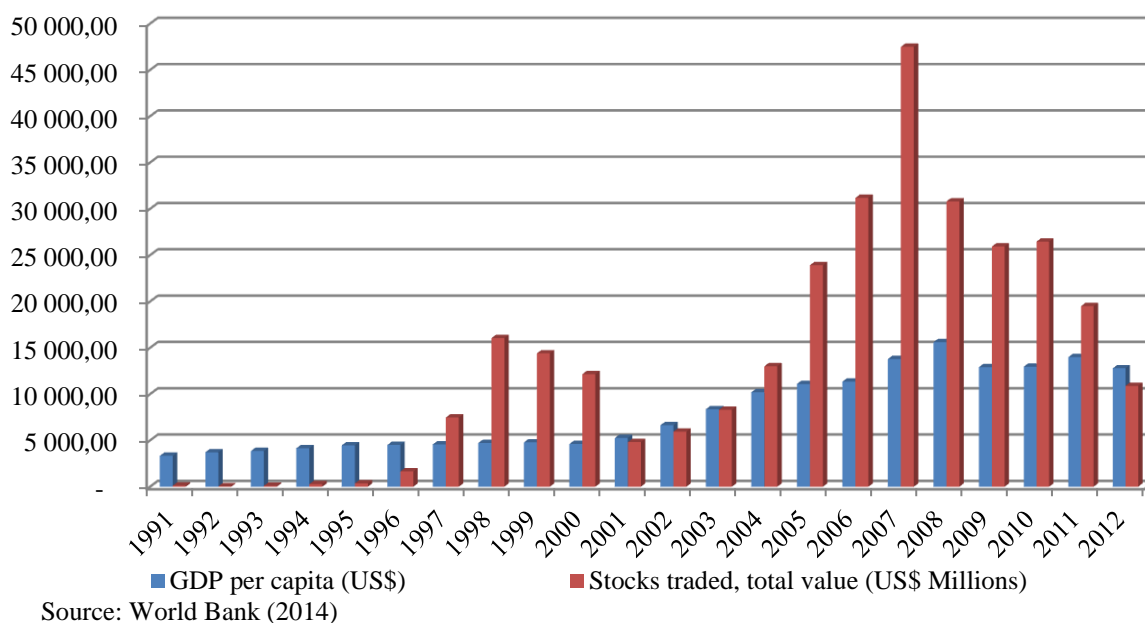

Source: World Bank (2014)

Table 2. Financial market development and growth trends for Hungary (1991 - 2012)

	MKT CAP ratio (%)	Turnover ratio (%)	DCFS (% of GDP)	MKT CAP (US$ Millions)	GDP (US$ Millions)
1991	1.46	6.55	98.05	505.00	34,559.39
1992	1.46	7.12	93.09	562.00	38,514.17
1993	2.04	14.41	93.84	812.00	39,900.74
1994	3.73	22.39	90.08	1,600.00	42,925.51
1995	5.20	17.75	79.76	2,399.00	46,166.30
1996	11.35	42.78	70.48	5,273.00	46,448.78
1997	31.81	73.80	63.76	14,975.00	47,070.18
1998	28.89	110.62	61.26	14,028.00	48,548.47
1999	33.32	94.87	52.18	16,317.41	48,965.87
2000	25.52	85.75	54.48	12,020.68	47,110.42
2001	19.37	43.04	48.85	10,366.87	53,533.39
2002	19.46	50.61	52.35	13,109.60	67,366.29
2003	19.74	55.63	56.67	16,729.20	84,738.41
2004	27.83	57.26	57.39	28,711.38	103,156.82
2005	29.11	78.03	62.00	32,575.66	111,890.07
2006	36.71	83.70	68.10	41,934.53	114,238.45
2007	34.39	106.04	75.49	47,651.14	138,580.12
2008	11.87	93.01	82.05	18,579.37	156,578.90
2009	21.87	110.69	80.98	28,288.05	129,359.84
2010	21.38	94.53	81.11	27,708.44	129,583.01
2011	13.46	83.86	77.54	18,772.96	139,439.62
2012	16.62	54.59	68.74	21,080.37	126,824.84

The five year period between 2005 and 2010 was characterized by a decline in stock market capitalization whilst the same downward trend was observed from 2010 to 2012. For instance, stock market capitalization went down from 29.11% in 2005 to 21.38% in 2010, representing a 7.73 percentage points decline before experiencing another 4.76 percentage points decline during the subsequent two year period to end the year 2012 at 16.62%.

Domestic credit provided by the financial sector (% of GDP) abbreviated as DCFS ratio experienced a massive 25.28 percentage points decline, from 79.76% in 1995 to 54.48% in 2000 before experiencing a 7.52 percentage points increase during the same period (from 54.48% in 2000 to 62% in 2005). Moreover, the subsequent five year period saw the DCFS ratio gaining by 19.11 percentage points (from 62% in 2005 to 81.11% in 2010) before plummeting by 12.37 percentage points, from 81.11% in 2010 to 68.74% in 2012.

Figure 4 describes the stock market capitalization and GDP trends in Hungary during the period from 1991 to 2012. GDP and stock market capitalization stood at US$34 559.39 million and US$505 million respectively in 1991. Stock market capitalization went up by 375.05%, from US$505 million in 1991 to US$2 399 million to 1995 before experiencing another increase of 401.07% during the subsequent five year period to end 2000 at US$12 020.68 million. Furthermore, stock market capitalization went up by 171%, from US$12 020.68 million in 2000 to US$32

575.66 million in 2005 before declining by 14.94% during the subsequent five year period to end 2010 at US$27 708.44 million. This was before further plummeting from US$27 708.44 million in 2010 to US$21 080.37 million in 2012.

On the other hand, GDP increased from US$34 559.39 million in 1991 to US$46 166.30 million in 1995 and further went up marginally by 2.05% during the subsequent five year period, from US$46 166.30 million in 1995 to US$47 110.42 million in 2000. GDP was characterized by a massive increase of 137.51%, from US$47 110.42 million in 2000 to US$111 890.07 million in 2005 before further going up by 15.81% to end the year 2010 at US$129 583.01 million. On the contrary, the next year period saw GDP marginally going down by 2.13% , from US$129 583.01 million in 2010 to US$126 824.84 million in 2012.

4 Conclusion

This study investigated the relationship between financial development and economic growth in Hungary using a case study approach. Majority of studies on the same or similar topic have so far used regression and or econometric methodologies to examine the nature of the relationship between financial development and economic growth. Not a single study the author is aware of used a case study approach to discuss the relationship between the two variables. It is against this background that the author

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Figure 4. Stock market capitalization and GDP trends for Hungary (1991 -2012)
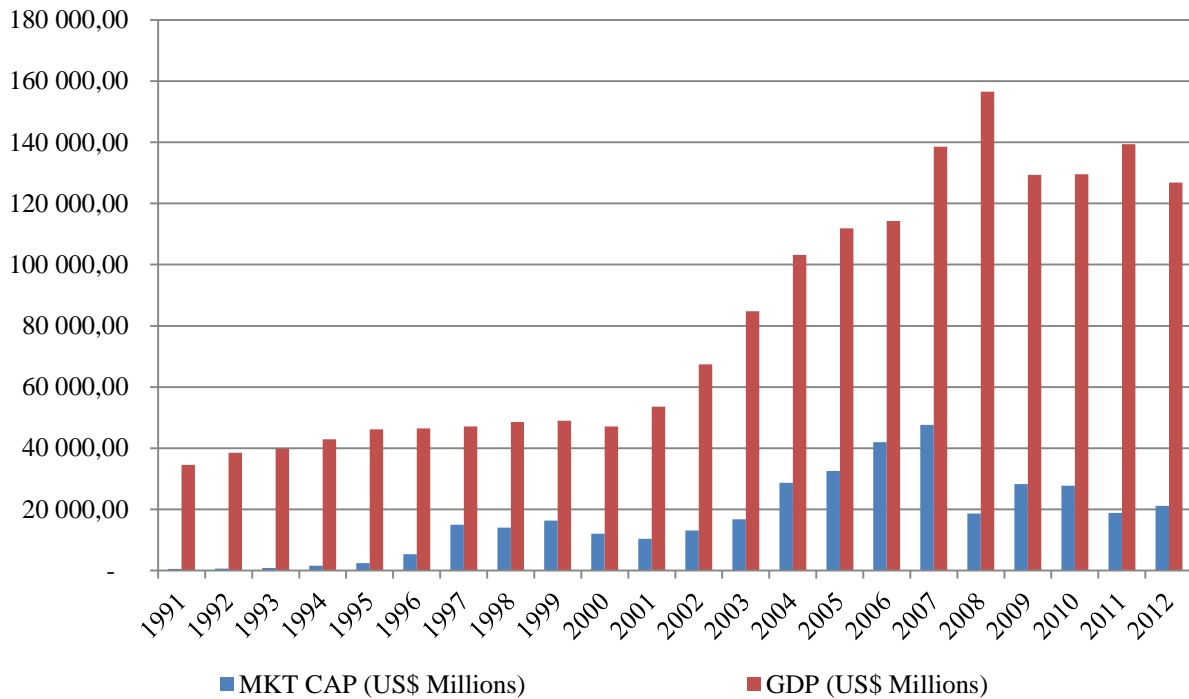
Source: World Bank (2014)

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