Online ISSN : 2249-4588
Print ISSN : 0975-5853

Global Journal
of Management and Business Research: B

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VOLUME 14 ISSUE 8 VERSION 1.0

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Global Journal of Management and Business Research: B
Economics and Commerce

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Volume 14 Issue 8 (Ver. 1.0)

Open Association of Research Society

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Offset Typesetting

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Pricing (Including by Air Parcel Charges):

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22 USD (B/W) & 50 USD (Color)

Yearly Subscription (Personal & Institutional):

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Contents of the Issue

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 14 Issue 8 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Foreign Direct Investors Shun Zimbabwe To Spark A Liquidity Crisis in The Country (2013- 2014)

By Dr. Silas Luthingo Rusvingo

Abstract- In this Paper the Author looks at how and why the foreign direct investors have shunned Zimbabwe to plunge the country into a liquidity crisis which has since worsened after the disputed 31 July 2013 poll. The period of focus is 2013 to 2014. To wrap up the discourse the Author will proffer a Summary, Conclusion and Recommendations designed for risk treatment to improve the deteriorating liquidity crisis in the country.

Keywords: investors, zimbabwe, liquidity, crisis and global fund.

GJMBR - B Classification : JEL Code: E20

FOREIGNDIRECTINVESTORSSHUNZIMBABWETOSPARKALIQUIDITYCRISISINTHECOUNTRY20132014

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Foreign Direct Investors Shun Zimbabwe To Spark A Liquidity Crisis in The Country (2013-2014)

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Abstract- In this Paper the Author looks at how and why the foreign direct investors have shunned Zimbabwe to plunge the country into a liquidity crisis which has since worsened after the disputed 31 July 2013 poll. The period of focus is 2013 to 2014. To wrap up the discourse the Author will proffer a Summary, Conclusion and Recommendations designed for risk treatment to improve the deteriorating liquidity crisis in the country.

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I. Introduction

In December 2012, the Global Fund had distributed US$ 50 billion in foreign direct investment to Africa. Of this amount, US$ 10.9 was distributed to the four SADC countries of Mozambique, South Africa, Zambia and Zimbabwe as in Table 1 below:

Table 1 : Distribution of foreign direct investment of US$ 10.9 billion to Mozambique, South Africa, Zambia and Zimbabwe in December 2012.

Country	Fdi in Us$ Billion	Ranking	Percentage
Mozambique	5	1	46
South Africa	4.5	2	41
Zambia	1	3	9
Zimbabwe	0.4	4	4
	10.9		100

Source: Ruzane (2014)

Table 1 above highlights the unattractiveness of Zimbabwe to foreign direct investors. In the race for foreign direct investment (fdi) in the region Zimbabwe was a distant fourth to confirm her unattractiveness to foreign investors. Put differently of the US$ 100 brought to the four SADC countries for investment Mozambique and South Africa walk away with US$ 46 and US$ 41 respectively while Zambia takes home a modest US$ 9. For Zimbabwe the sad story is that she takes home a paltry US$ 4 in the much needed fdi to set up one pertinent question: Why is Zimbabwe once touted as the **'Switzerland'** of Africa at independence from Britain in 1980 being shunned by foreign direct investors to become a basket case in a SADC[1] region of modest economic growth?

Unlike Mozambique, South Africa and Zambia, Zimbabwe has a concoction of unattractive policies which are an anathema to the foreign investor to give Zimbabwe a reputation of risk. The chaotic land grabs of 2000 in which +/- 6 000 white commercial farmers were forcibly dispossessed of their farms for redistribution to landless blacks is one among such unattractive policies in Zimbabwe. The excuse proffered then was to correct the land imbalances which were heavily skewed in favour of the minority whites in Zimbabwe then. The move while applauded by supporters of ZANU PF, was widely condemned not only in Zimbabwe but regionally and internationally for the xenophobia against the white man who was not a foreigner but born and bred in Zimbabwe. Another controversial policy which earned Zimbabwe reputational risk was the Indigenization and Economic Empowerment policy of 2007 which stipulated that any foreigner who brought his money for investment in Zimbabwe must be prepared to give up 51% of his investment to indigenous locals. But economic and political analysts and pundits say that the policy is a self serving political gimmick designed to prop up the political elite in ZANU PF[2] and not the ordinary person walking the street (Murombo 2014).

The Author has merely scratched the surface on unattractive policies crafted and implemented as a panacea for the revival of the Zimbabwe economy now in a more than a decade of meltdown Electoral shenanigans, gross human rights violations, constant rebuke of the West are chief among such unattractive policies that have reputational risk to impede the much

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[1] The Southern African Development Community (SADC) mission is to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper co-operation, integration, good governance and durable peace and security in the region, so that the region emerges as a competitive and effective player in international relations and the world economy (SADC Secretariat 2014).

[2] ZANU PF is an acronym for Zimbabwe African National Union – Patriotic Front, formed from the ashes of the ZANU led by Ndabaningi Sithole in 1977 ZANU PF led by His Excellence President Mugabe was the first ever first ruling party in post colonial Zimbabwe and continues to date.

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needed foreign direct investment coming to the financially hamstrung Zimbabwe.

Having set the ignition as above the Author will now descend upon the Zimbabwean market with a mission to sound out the various stakeholders about what they think about the liquidity crisis/crunch buffeting the Zimbabwe economy left, right and centre. The best approach to achieve this is to carry out a relevant literature review as below which is on its way coming to you.

II. The Relevant Literature Review

In carrying out the relevant literature review the objective is to ascertain if the said liquity crisis or crunch do in fact exist and who are the stakeholders who vouch for its existence or it is just a myth designed by the opposition political parties or other forces opposed to ZANU PF to tarnish the image of the ruling party since independence from Britain in 1980. In carrying out the relevant literature review that will do full justice to the topic under investigation the Author has lined up a bunch of journalistic professionals from the Zimbabwean media made up of various daily and weekly newspapers. And without much ado the Author will call upon Nyakazeya from The Financial Gazette, a weekly newspaper to give us his contribution on the subject matter under discussion in this Paper.

a) Liquidity crunch to worsen – OK Zimbabwe (Nyakazeya 2013)

Zimbabwe liquidity crunch will worsen in the short term and business activity is not expected to improve as consumer spending will remain constrained, OK Zimbabwe, the country's largest supermarket by revenue and outlets, said in early December 2013. OK Zimbabwe's chief executive officer (CEO), Willard Zireva had said that despite the gloomy outlook the company would focus on market share growth and efficient use of existing capacity as the sector was likely to become highly competitive. The company would continue in its efforts to achieve positive results and target a greater share of customer spend. The liquidity crisis in the country had been worsening with some delinquent banks failing to meet customer's daily cash demands. Some three banks were even failing to honour customers' requests for cash on demand. There was a very deep concern over the current financial crisis and there were risks of reversing economic gains made since the then comatose economy was formerly dollarized in February 2009 a date which marked the onset of the government of national unity (GNU) for Zimbabwe.

"We should brace ourselves for tough times ahead as the liquidity crisis is worsening. That is a reality and spending patterns are reflecting that …. The Honourable Minister of Finance, Patrick Chinamasa has been sending the right signal when he said there was no money on the market", said a concerned Zireva.

Zireva said that even if Zimbabwe was to get a **"favourable report"** from the International Monetary Fund (IMF) and World Bank (WB), inflow should be expected as late as April or May 2014 (Nyakazeya 2013).

Zireva continued with his mourning as below:

"A not favourable report – we all know what that means".

In the circumstances OK Zimbabwe had achieved limited growth in revenue of US$ 243.6 million, a 5.4% increase in the six months to September 30, 2013 as the liquidity situation ate into consumer disposable incomes. Earnings were flat in an environment characterized by low inflation then at 0.86%, the lowest in Africa at the end of September 2013, and lower estimated gross domestic product growth".

"The group profit after tax was steady at US$ 4.8 million while earnings per share were down to 0.43 cents from 0.47 cents after the shares in issue increased after the conversion of the US$ 5 million loan from Investec", continued Zireva in his obituary on the worsening liquidity crisis in Zimbabwe.

The group had declared a dividend of 0.2c which was unchanged from the previous year. During the period under review, the group's outlets had increased to 54 from 53 last year while the number of staff was at 3920. OK Zimbabwe said it was planning to open new stores in Mabvuku and Hwange. They were also planning to refurbish the Waterfalls and Bindura branches. The group said about 15 000 people had registered for its Kawena South Africa project which allow cross boarder purchases of goods electronically from the two neighbouring countries. The ambitious project was targeting an estimated two million people.

"10 000 people have registered for the project in South Africa and 5 000 in Zimbabwe and we are looking forward to grow the numbers", said Zireva.

Total assets at US$ 122.2 million were 17% higher than the same period last year (Nyazeya 2013). Two journalistic personalities from the renowned weekly Zimbabwe Independent newspaper had warned about the downward trend in Zimbabwe stoking deflation fears. Let us hear more about what they say vis-à-vis this other dimension of the subject matter under discussion in this Paper.

b) Downward trend stokes deflation fears (Kuwaza and Mangundhla 2014)

Zimbabwe's inflation rate continued in a downward trend raising deflation fears but economists see January consumer price index rising driven by an increase in import duty and wage increments. Fears rose after Zimbabwe's inflation maintained a downward trajectory with economic commentators fearing possible deflation. Latest Zimbabwe national statistics agency

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figures show annual inflation shed 0.21% to end the month of December 2013 at 0.33% while month-month shed 0.17 points from 0.09% in November 2013 to close the month of December 2013 at 0.08%. Zimstats had said food and non-alcoholic beverages inflation stood – 2.20% year – on – year whilst non-food inflation stood at 1.61%. Economist Eric Bloch had allayed deflation fears.

"I don't think we will see deflation occur", he said.

Bloch sees inflation closing the year at 2%. He said prolonged deflation would have a very negative impact on the economy although a brief period of deflation could be beneficial. Analysts had warned deflation could act as an encumbrance for local manufacturers' further hurting an industry which was already suffering from a myriad of macroeconomic challenges that had seen average capacity utilization plunge to 39.6% in 2013 from 44.7% in 2012. Deflation is a decline in prices caused by a reduction in the supply of money or credit and a decrease in government, personal or investment spending (Kuwaza and Mangundhla 2014).

Generally, deflation has the effect of throwing people out of employment given the lower level of demand in the economy, which can lead to economic depression. Zimbabwe's situation had been worsened by the fact that unlike other central banks, which tend to stop severe deflation, along with high inflation in an attempt to keep the excessive drop in prices to a minimum through various monetary policies depending on the banks objectives, the Southern African country is crippled on that front. For example, the Central Bank cannot carry out simple interventions expected when signs of a recession appear such as coming up with a stimulus plan to kick start the economy. The US Federal Reserve and other Central banks tend to intervene through quantitative easing an economic euphemism for printing money and bond and treasury bill issues. This type of monetary policy intervention increases the money supply and typically raise the risk of inflation. Bloch said while the 26% salary increment awarded to civil servants would be a drain on an already squeezed fiscus, the move would benefit the economy as it will improve revenue inflows. The salary increments will to an extent also see a marginal rise in consumer spending as disposable incomes rise. Zimbabwean companies have to survive in an environment where prices remain generally low while operating costs may be higher, Economter Global Capital (Ecometer) head of research Takunda Mugaga said in an interview yesterday.

"It means the rate at which prices increase is in the negative yet the costs of production remain high", Mugaga said.

In its 2014 economic outlook report, Econometer said, Zimbabwe's annual inflation in January 2013 was at 2.5% and continued to trend downward, reaching 0.54% in November 2014. The Research firm said room for deflation in 2014 was quite remote with energy inflation and food inflation seen as the possible drivers of inflation.

"However the last quarter of 2014 might see a slight rise in inflationary pressures which will see inflation closing the year at 1.3%. The government can only follow the inflation trends with no fiscal or monetary policy measures to influence it in the short to medium view". Mugaga said (Kuwaga and Mangundhla 2014).

Economist John Robertson said reduction in inflation was being caused by "fierce competition" between retail traders as well as the weakening of the South African Rand to the united States dollar. He however pointed out that the inflation slowdown would be brief. Robertson said the recent increase in import duty and wage increments would break the trend and will see a slight increase in inflation from this month (January 2014) onwards. The prospects of deflation raise fears that this could increase the massive job losses and retrenchments that have wreaked havoc on the economy. A July 2013 National Social Security Authority (NASSA) Harare regional employer closures and registrations report for the period July 2011 to July 2013 shows 711 companies in Harare had closed down rendering 8 336 individuals jobless. In addition many companies are downsizing and have retrenched tens of thousands of their employees condemning them to a gloomy future. More and more companies are being liquidated, while others are being placed under the care of judicial managers as the economic problems besetting the country mount. Major companies that have retrenched include platinum mines, Zimplats and Unki, Binudra Nickel, Spar Supermarkets, Dairyboard, Cairns, Olivine industries and PG Industries. According to the NSSA report, 330 companies in Harare in the retail and other business services category closed while administration –related businesses also suffered a huge knock with 59 companies closing, with the construction and banking industry losing 42 and 32 companies respectively (Kuwaza and Mangundhla 2014).

In a move that sounded very refreshing in terms of peace of mind to any sane person with Zimbabwe at heart was the good news filtering through in the festive season in particular on 20 December 2013 that the financially hamstrung government was at long last reported taking measures to tackle the liquidity crunch then besetting the economy then in a more than a decade of economic meltdown, Coming to you sooner than later is this sumptuous story.

c) Government moves to tackle liquidity crunch (Mafirakureva and Tahungai 2013)

Five days before Christmas of 2013 the government moved in to tackle the liquidity crunch currently gripping the Zimbabwean economy after unveiling a US$ 100 million interbank market backed by

Global Journal of Management and Business Research (B) Volume XIV Issue VIII Version I Year 2014

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the African Export Import Bank. Presenting a US$ 4.1 billion 2014 budget in Parliament Honourable Minister Patrick Chinamasa said the absence of an interbank market meant that surplus positions at some banking institutions remained unavailable to deal with shortages at others thereby resulting in periodic gridlocks in Real Time Gross Settlements. The liquidity crunch was worsened culminating in long winding queues at mostly indigenous owned banks. The current situation, Honourable Chinamasa said, was one of the desperation, where each bank was left to fend for itself due to the absence of a formal interbank market.

"This situation is disastrous for the soundness of the banking system", said Honourable Chinamasa. "In view of the above I propose to introduce a US$ 100 million Interbank Programme supported by an international bank, the African Export and Import Bank, as a guarantor effect from 01 April 2014".

He said the Interbank market was a necessary first step or first resort to build confidence within and amongst the local financial institutions. Honourable Chinamasa also said government would take over the Reserve Bank of Zimbabwe's debt of US$ 1.35 billion (Mafirakureva and Tahungai 2013).

Honourable Minister of Finance, Patrick Chinamasa went on to say:

"The second stage is to raise an amount US$ 150 200 million to capitalize the Reserve Bank of Zimbabwe in order for it to provide liquidity support to the financial sector as we proceed to ensure that it effectively plays its lender of last resort role and rediscount market instruments when the need rises", the Honourable Minister added.

Bankers Association of Zimbabwe (BAZ) president George Guvamatanga said enforcement of the interbank market was critically going forward.

"Already interbank market was in existence but not everyone was participating. But now the story should be enforcement of measures which will make the interbank market more efficient and will allow everyone to participate", Guvamatanga said. "Any market requires an interbank market and any such measure will certainly improve the liquidity crisis".

Economist John Robertson said it was too early to predict what effect the development would have.

"We need to see that disappearance of unsuitable banks for the market to regain confidence and for the banks to be able to lend each other", he said. "The Minister has also mentioned the ration of the lender of last resort and when this happens then the banks will be able to deal with each other". (Mafirakureva and Tahungai 2014).

The opposition MDC-T[3] led by Morgan Tsvangirai also joined the fray to make its contribution known by the cashless Zimbabweans. And below is its article on the issue which is under debate in this Paper.

d) MDC-T warns of tough times ahead (Mbanje 2014)

According to Honourable Paurina Mpariwa shadow Minister for labour in the opposition MDC-T party, ZANU PF had failed to manage the economy then in its 14th year of a meltdown and the masses should start stocking up as trouble lay ahead. Honourable Mpariwa told journalists that the ruling ZANU PF party had failed to turn around the comatose economy which was no in doldrums for want of a better world. She said Zimbabweans should brace for tough time ahead.

"The general public should be very worried and should start stocking up because there is big trouble ahead and we need to be prepared for the worst", said Honourable Mpariwa.

Flanked by the national organization secretary, Nelson Chamisa and party spokesman Douglas Mwonzvora, the Honourable Shadow Minister had said that the financially hamstrung government had let down the civil servants. She berated threats made by Honorable Minister of Labour Nicholas Goche who had warned civil servants against conducting an illegal strike.

"The MDC-T notes with serious concern the unwarranted threats made by Goche against civil servants who intend to engage in an industrial action over their pay and welfare disputes", she said.

Honourable Mpariwa said the constitution clearly specified that every employee had a right to participate in collective job action, including the right to strike, withdraw their labour and take other similar collective action.

"Instead making unconstitutional threats to the already suffering government workers Goche should implement and honour his party's promises made during the 2013 elections. ZANU PF should stop paying lip service to the clear rights of civil servants to receive increased and backdated salaries", she said.

Chamisa said, his party was totally against the 2014 budget and would not be party to it.

"We do not subscribe to such a budget which has nothing to offer to the general populace. During the inclusive government civil servants got their salaries on time and bonuses too", he said.

The MDC-T also reiterated its calls for fresh elections to resolve the current economic situation.

"Until fresh elections are held and a proper government is in place, things will remain as they are and foreign direct investment will continue to shy away from the country", said Mwonzvora. (Mbanje 2014).

[3] MDC is an acronym for Movement for Democratic Change (Zimbabwe) which is a political party and currently the main opposition party in the House of Assembly of Zimbabwe. The original MDC was formed from various civic society groups such as Zimbabwe Congress of Trade Union (ZCTU), Zimbabwe National Association of Students (ZINASU) among others

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On hostile policies which scare away foreign direct investors Mpariwa said the country under the guidance of the clueless ZANU PF had failed to attract investors due to its "**acerbic and hostile policies**".

"It is worrying that many companies are slipping into liquidation, voluntary or judicial management, throwing thousands out of job markets because ZANU PF has killed both the formal and informal sectors of the economy", she said (Mhuka 2013).

Over 300 companies have been liquidated in recent months while 149 companies had filed for liquidation at the High Court and over 300 workers are being retrenched on a weekly basis.

"The MDC-T believes that labour is the cornerstone of sustainable national development. It is possible to attain the goal of poverty alleviation through the creation of decent jobs that provide dignity and opportunities for Zimbabweans", said a concerned Mpariwa (Mbanje 2014).

The liquidity crunch which has adversely affected both the public and private sectors, companies in the private sector have for a good reason failed to pay the ZIMRA Tax bills to attract Tax raids from ZIMRA on behalf of government which is also cashless because of the liquidity which is sparing nobody on the market. What are the people's reactions to these barbaric ZIMRA raids. For more on this story see the paragraph below.

e) ZIMRA approach bad for business (Gama 2014)

Zimbabwe's economic meltdown does not require a scaltergun approach to the myriad of problems being currently experienced in Zimbabwe. Sadly, there appears no one among the ruling elite with a clue as to the serious ramifications of such an approach. The view is strongly backed by the approach taken by the Zimbabwe Revenue Authority (ZIMRA) whose clampdown on the so called errant taxpayers has left many companies bleeding. It is true that the government of his Excellence President Mugabe is broke but people do not expect it to use a scattergun approach to collect revenue especially when ZIMRA appears to ignore the basic rights of those involved. ZIMRA has billed companies astronomical invoices for tax defaults in some case ranging between US$ 3 million and US$46 million. And the tax Authority are using "pay now and we talk later" language which has seen companies driven into liquidation (Gama 2014).

How does Gersham Pasi the ZIMRA Chief explain the sudden upsurge in tax defaults? Where was ZIMRA when the tax arrears where accumulating? No one is explaining this because the truth of the matter is that ZIMRA has nowhere to turn to as the revenue continues to dwindle. The hard pressed government is turning the other side as companies are being driven into liquidation. Instead of creating an environment that boosts production, His Excellence President Mugabe's government continues to pile pressure on Pasi and ZIMRA who in turn drive their tax dager at the heart of productive but shaky companies. The fiscal space is getting smaller each month and the sooner His Excellence President Mugabe and his colleagues in government realize this the better. You can not keep milking a bleeding cow! It is quite evident that each month government struggles to pay civil servants and could soon be forced to stagger salaries. Recent warnings by the International Monetary Fund and the World Bank should not be taken lightly. Zimbabwe has less than two weeks import cover and worse could happen. This is why something must give in, the centre can no longer hold. The planned extension to the informal sector by ZIMRA in its blitz will not help the situation. This will instead bring more suffering and closures of small business enterprises. At worst the proprietors of these business entities will conceal their revenue while at the same time turning their backs on the already struggling banks. A run on the bank deposits would return Zimbabwe to the pre-2008 environment. So people ask; Is this what ZIMRA wants in its effort to increase dwindling revenue? (Mbanje 2014).

Despite this appeal to Honourable Chinamasa, the Finance Minister to stop this move against a sector which is already bleeding he came out blazing his guns in support of ZIMRA moves when he said that ZIMRA will not stop the raids because ZIMRA's mandate is to collect revenue. (Staff Reporter 2014).

On government failure to pay civil servants on time the government should blame nobody but itself for it having that kind of a problem. "*aya mazvokuda mavanga enyora"* (meaning suffering pain from self inflicted wounds). During the 31 July 213 electioneering ZANU PF hired ZANU PF thugs to campaign for them by way of killing, maiming and raping in return for employment. Today the statistics on the government payroll are shocking. Out of the 230 000 civil servants 75 000 are ghost workers (Staff Reporter 2014).

Even ZANU PF itself went for two months without paying its workers because of the liquidity crunch. For more on the story see below.

f) Liquidity crunch bites ZANU PF workers go for two months without pay (Kunambura 2014)

The ruling ZANU PF party which is under extreme pressure to resolve a complex national crisis that is being fueled by a serious liquidity situation is under extreme pressure to resolve a complex national crisis, that is being fueled by a serious liquidity situation is itself neck deep in these financial woes that speaks volumes about its capacity to deliver on its election promises while the revolutionary party went into 2013 elections sitting on a huge war chest that saw it splashing big on all terrain 4 x 4 vehicles, expensive campaign regalia and advertising material, that season of plenty is gone. She is running thin on resources

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which might affect its preparations for the ZANU PF elective congress due in December 2014. The party's politburo was expected to receive a report on the congress preparations, amid indications that the corporate sector will once gain be called upon to support ZANU PF fund raising efforts. That beside the point, the party had other pressing issues which are sticking out like a sore thumb. For example the party had not paid its workers countrywide for the last two months and there was a possibility that it could be dragged before the courts for breaching labour regulations (Kunambura 2014).

The workers were now surviving on the goodwill of well wishers as the appalling economic situation is sweeping across all sectors sinks its teeth deep into the revolutionary party. ZANU PF revenue comes in the form of donations, membership fees and subscriptions. The party being the dominant player in Zimbabwe also got the lion's share of the funding made available through the Political Parties Finance Act. But due to the liquid conditions prevailing locally, Treasury had been unable to release the funds to the eligible beneficiaries. Its rivals MDC-T also revealed last week that the labour backed party was still owed close to US$ 5 million. Another source of funding for the party is through dividends from a cluster of companies in which ZANU PF party was invested. Unfortunately most of ZANU PF's investments are hemorrhaging out of the difficult economic situation and have been unable for a long time, to remit dividends to their shareholders. At some point companies owned by ZANU PF were the subject of an internal instigation after is was felt that management and other corporate ills should have been contributing to their poor performance. With revenue sources thinning the revolutionary party then owed its workers US$ 190 000 in outstanding salaries. When contacted by telephone to explain the situation and give finer details on he matter ZANU PF secretary for administration Dydmas Mutasa, declined to comment saying that he no longer talked to the media.

"Why are you still bothering me? I have said it before that I do not speak to the press anymore. Get in touch with the party spokesman, Rugare Gumbo, he will tell you what you want", charged Mutasa.

Gumbo however, referred the issue back to Mutasa. Workers at the ZANU PF headquarters were tight lipped this week as they feared victimization as they spoke to the press. They however confirmed they last received their salaries in April 204.

"It is true that we have not been paid for two months now but I cannot talk to you further than that. As workers we are under strict orders not to talk to the media. Please do not mention that you spoke to me", one employees said. "It is true that the party employee have gone for two months without receiving their salaries. The party is failing to raise the money to pay them and they are now restless", said a party member who preferred to remain anonymous for security reasons (Kunambura 2014).

He said the situation was affecting employees at the party's different offices dotted around the country, but was more devastating at the national headquarters in Harare due to the bigger staff complement.

"I do not see the situation improving in the near future. It will take time before things go back to normal", the member said.

For example Zimbabwe's debt is now estimated at US$ 10 billion twice the size of its Gross Domestic Product. Unemployment remains unsustainably at more than 80% spawned by company closures and the country's inability to expand its production base to absorb the many school leavers. ZANU PF had been brandishing its economic blueprint, ZimAsset as the manual that offers solution to many of the country's problems. Where the ruling party has struggled is to get US$ 27 billion to put ZimAsset into action. But while the party faces problems internally and nationally there are accusations that those in the corridors of power have been insulated from the crisis. Ironically, politburo members reportedly got huge sitting allowances whenever the party's highest decision mailing meets to deliberate on party issues. According to the ZANU PF constitution the Politburo meets at least once per month but they have been sitting more frequently over the last few months as preparations for the crunch elective congress set for December 2014 gathers momentum (Kunambura 2014).

ZIMRA had made its intention to the suffering masses that the parastatal wants to investigate the rich. The ZIMRA suggestions sounds a noble idea as it encourage tax compliance with the country's tax laws by all its citizens rich or poor. Let us find out more on this noble idea as expounded below.

g) ZIMRA Move welcome but ….. (Gama 2014)

Zimbabwe revenue Authority's (ZIMRA) intention to investigate the filthy rich is a noble idea which should be supported by every patriot in the cash ravaged country because it encourages tax compliance. However, it is our understanding that more needs to be done by government to increase its tax base in a sustainable way by creating a conducive environment that allows business and entrepreneurs to thrive. At the moment companies are shutting down at an alarming rate, power cuts are becoming excessive by the day and water woes are now part and parcel of our lives – with no respite in sight. The ZANU PF led government on the other hand ensnared in denial and is clueless on how to turn around the fortunes of the country' economy now in its 14^{th} year of meltdown. As long as policy consistencies are prevalent and controversial policies such as the Indigenization and Economic Empowerment Act remain in our statutes in their current form, it would be hard if not impossible, for us to attract foreign direct

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investment – a critical component for economic revival. We have said it before and we will continue to sing from the same hymn book, that the indigenization policy must be amended quickly and this should be put in black and white (Gama 2014).

The controversial law is not helping anyone let alone the financially hamstrung ZANU PF government who crafted it, but only the politically well connected elites at the expense of the majority of Zimbabweans who continue to wallow in abject poverty. A cursory look at our regional peers as aforementioned in Table 1 clearly reveals that all our neighbours' economies are growing remarkably while Zimbabwe will be extremely lucky to register a 3.3% gross domestic product growth rate this year. Our main problem at the moment is lack of political will and economic policy deficiency. We have a government that is clueless and continues to celebrate winning elections many months after the disputed event. This goes on to show that we have leaders that clearly have no idea how to put food on our tables. If ZANU PF had brilliant ideas to grow our economies – as they wanted the electorate to believe through their ZimAsset blueprint – then by now we should have begun to see the results. On the contrary our lives are now worse off than they were before the 31 July 2013 disputed poll. Out of the 2.2 million jobs promised by ZANU PF there is no evidence of jobs being created. Drugs are not available in hospitals and clinics, our education system continues to disintegrate unabated, social services delivery systems have irretrievably broken down and youth unemployment has skyrocketed to shocking levels. With the current crop of leadership, it seems fair to conclude that "our future as a nation is doomed unless there is divine intervention – hence the short prayer: *Mwari nevadzimu venyika ino tibatsire* (meaning God and the Ancestral spirits please help us).

The short and relevant literature review on foreign direct investors shunning Zimbabwe because of our acerbic and unattractive policies has been carried out as above to spark a liquidity crisis has been systematically done. The one and only research finding confirmed by the short and relevant literature review was that the liquidity crisis in Zimbabwe which has intensified and worsened by a degree or two since the disputed 31 July 2013 poll is indeed not a myth created to tarnish the good image of the ZANU PF party but a true story as per the evidence dished out by the short and relevant literature review. Up next are the Summary, Conclusion and Recommendations to wrap up the fascinating discourse in this Paper but before Conclusion and recommendations it is Summary first.

III. Summary

The introduction of this Paper was dominated by Table 1 which compared Zimbabwe to its regional peers namely, Mozambique, South Africa and Zambia. The Table 1 above clearly showed that in the race for fdi in the SADC region Zimbabwe was not only a distant 4th to win a wooden spoon as its prize money but to leave the Author a Zimbabwean, with a broken heart. The regional peers of Mozambique, South Africa and Zambia walked away with gold and silver and bronze respectively, a result that consigned Zimbabwe to a regional basket case despite it being touted the "Switzerland" of Africa at Independence from Britain in 1980.

The discourse opens on a sour note with the OK Zimbabwe, the biggest Supermarket in Zimbabwe by outlets and revenue, predicting that the liquidity crunch which had negatively affected its current financial statements was likely to worsen in the short to medium term. The opening statement printed a gloomy picture for Zimbabwe compared with its regional peers.

Up next was on equally distressing statement which said the downward trend as measured on the Zimbabwean economy was stocking deflation fears, a step towards economic recession. What is most painful is that while Zimbabwe is cited in political, diplomatic and economic turmoil, its regional peers are enjoying economic prosperity by an improved inflow of fdi compared with Zimbabwe. To alleviate bank closures by mostly indigenous banks, the government had moved in to address the problem by establishing an interbank market guaranteed by the Reserve Bank of Zimbabwe.

To alleviate bank closures by mostly indigenous banks, the government had moved in to address the problem by establishing an interbank of market guaranteed by the Reserve Bank of Zimbabwe. And to start with an initial capital injection of US$ 100 million dollars had been pumped into this market by the government.

And to confirm the existence of the liquidity crisis in the country the opposition MDC warns of tough times ahead. According to the opposition party ZANU PF had failed to manage the economy. Unattractive policies such as the chaotic land reform programme of 2000 and the controversial Indigenization and Economic Empowerment of 2007 among others, were cited as impediments to foreign investors shunning Zimbabwe in preference to its regional peers such as Mozambique and South Africa, among others.

In order to improve the inflows into government coffers which were on the dwindle, ZIMRA adopts a scatter-gun approach to errant taxpayers which left many companies bleeding to torch a public outrage calling on ZIMRA to stop the tax raids which were said to be bad for business. But the Honourabke finance Minister Patrick Chinamasa vowed to continue with the tax raids because the cashless government was in need of revenue from the errant taxpayers among them, companies which were not only left bleeding but most of them on the point of filling for liquidation.

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The liquidity crisis is reported to also bite ZANU PF party who were failing to pay its workers countrywide in *mazvokuda maanga enyora* (meaning suffering pain from a self inflicted wound). ZANU PF are responsible for authoring unattractive policies shunned by investors coming to do business in Zimbabwe. And the liquidity crisis spawned by the said unattractive policies is coming back to haunt the same party responsible for authoring the said unattractive or acerbic policies.

And finally ZIMRA is back again in the public domain with a noble suggestion to investigate the rich to improve tax compliance. But given the power cuts of the perennially bungling Zimbabwe Electricity Supply Authority which were reported on the increase and so was water and sanitation services, from the equally bungling Harare City Council the move was not welcomed by the restive public then suffering from a shortage of cash to spent on goods and services to stoke fears of deflation, the first step towards economic recession experienced in the pre-2008 era which culminated in the formation of the government of national unity to bring sanity to an economic situation ravaged by hyperinflation then measured at 6.5 sextrillion % mid-november 2008. Reports of more companies shutting down are quite disturbing given that more people would be rendered jobless in an economy where unemployment rate at 80% does not compare favourably with same from its regional peers (Rusvingo 2008:2). With the summary conveniently out of the way up next is the Conclusion.

IV. Conclusion

Kenkel (1984:342) defines a hypothesis as:

"A statement about the value or set of values that a parameter or group of parameters can take".

According to Kenkel (1984:343)

"The purpose of testing is to choose between two conflicting hypothesis about the value of a population parameter. The two conflicting hypotheses are referred to as the Null Hypotheses and the Alternative Hypothesis denoted H_1. These two hypotheses are mutually exclusive so that when one is true the other is false".

For the study in this Paper titled: Foreign investors shun Zimbabwe to spark a liquidity crisis in the country (2013-14) the Null (H_0) and Alternative (H_1) hypothesis in respect of this investigation shall be:

H_0

Foreign investors do not shun Zimbabwe to spark a liquidity crisis in the country (2013-14)

H_1

Foreign investors shun Zimbabwe to speak a liquidity crisis in the country (2013 – 14).

Given the overwhelming evidence given in the Paper in support of the Alternative hypothesis (H_1) the Conclusion is to "accept" the Alternative hypothesis as above and "reject" the Null Hypothesis (H_0). With the conclusion conveniently out of the way up next are the Recommendations.

V. Recommendations

In any study or investigation of a problem Recommendations are usually measures designed for risks or problems identified during the study or investigation of how and why a certain problem exists. Given the above explanation it can be said without any reasonable doubt that compared with its regional peers such as Mozambique, South Africa and Zambia, to name just a few, acerbic and unattractive policies crafted by Zimbabwe are an impediment to foreign investors flocking to Zimbabwe to do business (Mambo 2013) (Tigere 2014).

Chief among the unattractive policies which are a dog's breakfast are the chaotic land reform programme of 2000 whose mission was to compulsorily acquire +/- 6 000 white owned commercial farms . Why? According to His Excellence President Mugabe to correct the colonial land ownership which was heavily skewed in favour of the minority whites at the expense of the majority blacks. While the idea was noble it was wrong in the sense that the whites were left with nothing to create a situation of the 'haves' and the 'have nots'. Secondly the move was xenophobic against the whites to attract a lot of criticism from the West. Another major criticism against the chaotic land reform programme of 2000 was that the land given to the black farmers was not put to productive use for hunger and starvation to stalk the country since the year 2000 to date (Maravanyika 2013) (Pasi 2013) (Zororo 2014) (Mhunga 2014).

Another such acerbic and hostile policy sunned by foreign investors is the xenophobic Indigenisation and economic Empowerment policy of 2007 which is another dog's breakfast. Any foreign investor coming to invest in Zimbabwe automatically cedes 51% of the shares to indigenous blacks. Imagine a foreign investor bearing all the troubles and risks to bring his investment to Zimbabwe only to be told that he/she is to be a minority shareholder. What is so special about Zimbabwe to have such a hostile law when regional peers like South Africa and Mozambique, to name just a few, do not have that kind of acerbic law on their statutes. All these hostile laws must go now (Mambo 2013).

All said and done the Author's worry is, given all these troubles coming the way of Zimbabwe, she needs divine intervention. Therefore, a short prayer will do to put his mind to rest. *Mwari nevaDzimu venyika ino tibatsirei.* Amen. (meaning God and all the country's Ancestral spirits please help us now and for many years to come. Amen).

Global Journal of Management and Business Research (B) Volume XIV Issue VIII Version I Year 2014

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VI. Key Assumptions

In presenting this Paper the Author would, right from the outset, wish to reassure the beloved Reader that all the facts and figures contained therein are stated as they are without fear, favour or prejudice.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 14 Issue 8 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Impact of Business Environment on of Firm's Employment Growth

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Abstract- A good business environment makes it easier for firms from microenterprises to multinationals to enter and exit markets, which contributes to higher productivity, faster growth and creates jobs. A good business environment will benefit both domestic and foreign investors. Domestic and foreign investors invest where they find profitable opportunities, and try to avoid risks. In this paper, we use firm level survey data of the manufacturing firms in three different commercial strong Libyan cities to determine the influence of the business environment on the growth of the employment of the firms. The Structural Equation Model (SEM) method is used in this paper and the empirical variables are calculated for the purpose of the study. We find that corruption, crime and access to finance are the main obstacles that hamper the employment growth of manufacturing firms in Libya. However, the research does not reveal any significant effect of business regulations and the level of competition faced by the firm on the growth of the firm's employment.

Keywords: employment growth, business environment, manufacturing firms, Structural Equation Model (SEM).

GJMBR - B Classification : JEL Code: M12, M10

THEIMPACTOFBUSINESSENVIRONMENTONOFFIRMSEMPLOYMENTGROWTH

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The Impact of Business Environment on of Firm's Employment Growth

Hodud Essmui [α], Madline Berma [σ], Faridah Bt. Shahadan [ρ], Shamshubarida Bt. Ramlee [Ѡ] & Mohd Fauzi Bin Mohd [¥]

Abstract- A good business environment makes it easier for firms from microenterprises to multinationals to enter and exit markets, which contributes to higher productivity, faster growth and creates jobs. A good business environment will benefit both domestic and foreign investors. Domestic and foreign investors invest where they find profitable opportunities, and try to avoid risks. In this paper, we use firm level survey data of the manufacturing firms in three different commercial strong Libyan cities to determine the influence of the business environment on the growth of the employment of the firms. The Structural Equation Model (SEM) method is used in this paper and the empirical variables are calculated for the purpose of the study. We find that corruption, crime and access to finance are the main obstacles that hamper the employment growth of manufacturing firms in Libya. However, the research does not reveal any significant effect of business regulations and the level of competition faced by the firm on the growth of the firm's employment. These results have important policy implications for the priority of reform efforts. To improve the Libyan business environment, the government of Libya should enforce the Anti-Corruption Law and should make the financial system more dynamic, by establishing a clear regulatory system and by continuing to open up the banking sector to private investment. They should also provide access to high quality financial services and to capital. The government also must work hard and take urgent steps to improve security.

Keywords: employment growth, business environment, manufacturing firms, Structural Equation Model (SEM).

I. Introduction

A good business environment makes a country an attractive destination for foreign investment and a place in which domestic entrepreneurs of all sizes and across industries are willing to invest. A good business environment will benefit both domestic and foreign investors. Domestic and foreign investors invest where they find profitable opportunities, and try to avoid risks. They may be attracted by natural resources, large domestic markets, and/or lower production costs in export industries. In contrast, investors do not go where they think it will be unusually costly to do business, or where they fear they might lose their money because of political or economic upheaval or other risks. Therefore, providing a good business environment for firms and entrepreneurs represents a major challenge to all the governments around the world.

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The private sector in Libya faced various problems that affected their operations due to certain aspects of the basic Libyan politico-economic system. Currently, Libya is in transition and seeks a gradual state withdrawal from the productive sector and the development of the private sector. Therefore, the challenge for Libya is diversifying its economic structure, developing the non-oil sector, and adopting an economic model that exploits the huge economic potential for renewable energy and uses products and services that incorporate a higher share of local added value. To achieve this, Libya should establish the conditions in which domestic entrepreneurs and foreign investors can create valuable products and services through investment and innovation.

A lot of research is being done to find how the business environment affects the functioning of the firms. This research paper concentrates on the business environment's relationship with the employment growth of the Libyan manufacturing firms. Specifically, this study has looked into the impact of corruption, crime, infrastructure, finance, competition, business regulations and human capital. The necessary data was collected with the help of a survey and questionnaires were given to the manufacturing firms in Tripoli, Benghazi and Misurata. The SEM or Standard Equation Modelling techniques were used to examine the data and AMOS version 20 was used to execute the calculations. The outcome of the research identified the presence of a relationship between crime, corruption, access to finance, infrastructure and human capital on the growth of the firm's employment, but it does not find any influence on the employment caused by business regulations and the competition between the firms.

The paper is organized as follows. Section 2 presents empirical studies. In section 3 describes the methodology. The results of the research and also a discussion of the results are presented in section 4. Final section concludes.

II. Empirical Studies

Firm performance is highly affected by the business environment and this fact has been vastly discussed in empirical literature. Through the World Bank Enterprise Surveys or Investment Climate Surveys conducted by the efforts of the World Bank, the business environment has been thoroughly assessed

Global Journal of Management and Business Research (B) Volume XIV Issue VIII Version I Year 2014

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along with its effects on firm performance at firm level data. With this information, the business environments are able to perform consistent efforts.

Researchers and policy makers have developed their information and are investigating the activities of organizations beyond firm growth within a business environment. To analyze and measure the firm growth, several different measures have been used by researchers. Attributes such as employment, sales, profits, market share and turnover are commonly used to measure firm growth.

Growth indicators which are broadly used include sales and employment. Sales and employment have been used as a measure of firm growth by Gaviria (2002); Dollar et al. (2005); Hallward-Driemeier et al. (2006); Kochanovay (2012); Seker & Yang (2012); Aterido et al. (2009); Aterido & Hallward– Driemeier (2010); Batra et al. (2003); Ayyagari et al. (2006); Beck et al. (2005); Fisman & Svensson (2007); Athanasouli, et al. (2012); Vial & Hanoteau (2010); Rahaman (2011); Aggrey et al. (2012); Nishantha (2011) and Wang & You (2012).

These two attributes are easy to extract from within an organization and are able to present short and long term changes. However, for firm growth measurement, real revenue was used by Rand and Trap (2010), value added per employee was used by Klapper et al. (2006) and change in the book value of firm's total assets was used by Nguyen and Dijk (2012).

The productive performance of the firm is highly affected by corruption. This activity is considered a major issue faced by firms in the developing nations (World Bank 2005). The sales growth of a firm is highly affected when there is presence of corruption (Gaviria 2002). Fisman and Svensson (2007) which has been specifically observed In Uganda. A negative effect was found where a percentage point increase in bribery rate cause a decline of 3 percentage points in firm growth. In Latin America, 29 countries were analyzed where it was also found that bribery hampers firm growth. Firms who do not carry out solicitations like paying for bribes when applying for water connections, electricity or permits are doing 23.6 per cent better than those who conduct such activities (Seker & Yang 2012). 81 other nations were also analyzed where it was found that bribery and corruption has a significant negative effect upon sales and firm growth, a firm engaged in corruption activities would have a 3.95 per cent lower sales growth rate than the one who carries out its activities honestly (Batra et al. 2003). Bureaucratic corruption also has a negative effect upon the growth of firms in Central and Eastern European countries, on average a 3.0 per cent decline in sales growth is observed when such negative activity is observed (Kochanovay 2012). Nguyen and Dijk (2012) and Rand and Tarp (2010) also state that firm growth is negatively impacted by corruption in Vietnam. Hallward-Driemeier et al. (2006) also states for China that corruption effects its firm growth negatively. Greece was analyzed by Athanasouli, et al. (2012) where he also observed that administrative corruption causes a negative impact upon firm growth. Hence, a significant negative relationship is present between firm growth and corruption. Engagement practices are observed to be high and strong in small and medium enterprises as compared to large firms (Beck et al. 2005).

Vial and Hanoteau (2010), however, believe that a statistically significant and positive impact is created upon firm output with corruption. In Indonesia, firms having higher bribe-to-value added ratio displayed significant outputs. The presence of corruption has positively impacted firms in China according to the research conducted by Wang and You (2012).

Empirical literature shows the relationship between firm growth and finance access and it is clearly observed that access to finance is highly essential. Sales growth is significantly and negatively associated by financing according to Batra et al. (2003). Negative access to finance has reduced firm growth in Bangladesh, China, India and Pakistan (Dollar et al. 2005). Firms who were financially constrained have a sales growth rate of 4.63 percentage points lower than compared to the ones who are not financially constrained. The growth of large and medium firms is hampered with less access to formal finance is present (Aterido et al. 2009). The growth rate of firms is highly affected by financial constraints (Ayyagari et al. 2006). In small and medium sized firms, financial constraints have a vital effect upon growth (Beck et al. 2005). Firm growth is negatively impacted by the access to credit (Aggrey et al. 2012). Greater employment is observed where there is a high share of investment which is externally financed (Aterido & Hallward-Driemeier 2010). Internal funds are used to finance the growth of a firm when external financing constraints are present (Rahaman 2011). When the firm is able to gain access to the external bank credit facility, there is a decrease in the effect of the internal financing of the firm upon firm growth. Access to finance and firm growth in China showed no relationship in the studies conducted by Hallward-Driemeier et al. (2006).

Limited studies have been found upon the relationship between firm growth and business environment indicators like human capital, crime, competition, technology, business regulations and infrastructure. In Sri Lanka, the effect of entrepreneur's human capital upon sales growth rate has been analyzed (Nishantha 2011). A positive effect on sales growth was found with the presence of human capital variables like training with work experience, professional and technical education along with government experience and education. The Ugandan manufacturing firms were analyzed and average education was stated as a main driver for firm growth (Aggrey et al. 2012).

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The sales growth of firms is significantly reduced by the presence and effect of crime (Gaviria 2002). The affect of crime on sales growth has been confirmed by Ayyagari et al. (2006). When research was conducted upon Bangladesh, China, India and Pakistan, it was found that infrastructure is one of the most essential factors affecting firm growth, power outages and custom delays are negatively affecting the firms of these nations (Dollar et al. 2005). Medium and large firms both suffer from poor infrastructure (Aterido et al. 2009). However, Hallward-Driemeier et al. (2006) states that firm growth has no relation with physical infrastructure of the firm.

When analyzing the effect of business regulations on firm growth, it was observed that regulations only affect the small firms that are limited and remain below the regulation radar (Aterido et al. 2009). A statistical and negative influence of government regulations is formed upon the firm growth (Hallward-Driemeier et al. 2006). Sales growth is expected to increase by 42.6 per cent and employment growth by 46.7 per cent when regulatory burdens are reduced by 1 SD. 21 nations in Western and Eastern Europe were analyzed and it was found that entry for firms are affected by entry regulations. Small firms, unless they are able to afford the cost of incorporation, cannot enter the market when regulations are high. Labour intensive firms are also faced with several issues when entering the market when labour regulations are strong (Klapper et al. 2006).

III. Methodology

The sample selection process and the techniques used for the collection of data are described in this section.

a) Sampling and Data Collection

The data used in the research was provided by the administrators of the Libyan manufacturing firms in three major cities of the country. The cities of Tripoli, Benghazi and Misurata were selected for the study. Tripoli was selected because it has a central place in the economy of Libya and so does Benghazi. Business and financial activities are concentrated in the city of Tripoli and it is the largest commercial and industrial city in Libya. Benghazi is also an important commercial city in Libya and it has a large industrial and commercial base. It manufactures goods such as food, textiles, tanning, processed salt and construction materials. Misurata is Libya's third largest city and it was the first city in the country to have its own free trade zone. Questionnaires were used for the data collection process. 337 manufacturing firms were surveyed and the sample size was selected by random sampling processes. The questionnaires were distributed personally and by mail from March to May 2013. 297 questionnaires were returned out of the 377 which were distributed and only 207 were possible to be used for this research.

b) Operational Measures of the Variables

This section deals with the items which were used in the measurement of the variables used in the research conducted, source of items (see Appendix A).

i. *Access to Finance*

The questionnaires contained question about the access to finance and the firms had to rate it on a scale of 1 (no obstacles) to 7(extreme obstacles). This rating would show how serious the financing issues are for the growth and functioning of the firms. The related issues are: (1) collateral requirements of banks/financial institutions, (2) bank paperwork/ bureaucracy, (3) high interest rate, (4) need special connections with banks/ financial institutions, (5) banks lack money to lend and (6) access to foreign banks.

ii. *Corruption*

The survey also asked about the level of corruption existing in the system and the firms were supposed to provide a rating scale from 1 (never) to 7 (always). The firms were asked if: (1) they had ever made extra payment to secure public services such as electricity and telephone connections, (2) they had to pay extra to obtain licenses and permits, (3) they had to pay more to take care of taxation related issues, (4) they had to pay bribes to get government contracts, (5) they had to pay extra to deal with customs and imports.

iii. *Infrastructure*

The questionnaires also asked the firms to provide a rating for the standard of infrastructure that was available to them. The ranking scale was from 1 (very inefficient) to 7 (very efficient). The questions asked about the (1) quality of roads department / public works, (2) quality of postal service / agency, (3) quality of the telephone service / agency, (4) quality of the electric power company / agency, and (5) quality of the water / sewerage service / agency.

iv. *Business Regulations*

The firms were also asked to rank the prevailing business regulations. Once again, the ranking was from 1 (no obstacles) to 7 (extreme obstacles). This question was asked so that the difficulties that the businesses faced due to the business regulations and their effects on the functioning and development of their businesses could be ascertained. The regulations that were asked about include: (1) business licensing, (2) customs/ foreign trade regulations in your country, (3) labour regulations, (4) foreign currency/ exchange regulations, (5) environmental regulations, (5) fire, safety regulations, and (6) tax regulations/ administration.

v. *Crime*

The study was also concerned with the impact that the rate of crime had on the operations of the firms and how it damaged their business activities. The rating

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was on a scale of 1 (never) to 7 (always). The questions asked were: (1) criminal attempts suffered by the firm; (2) products losses due to theft, robbery, vandalism; (3) products losses due to employees' theft (4) the percentage of the firm's total annual sales was allocated to security (equipment, personal); and (5) the percentage of the firm's total annual sales was allocated to protection payment, the firms were asked to rate, on a scale of 1-7. On scale 1 equals 0%, 2 equals less than 5%, 3 equals 6-10%, 4 equals 11-15%, 5 equals 16-20%, 6 equals 21-25% and 7 equals more than 25.

vi. *Competition*

The questionnaires also asked the firms to rate how difficult it was for them to follow the activities of their competitors for the purposes of business development and growth. The ranking scale was from 1 (no obstacles) to 7 (extreme obstacles). The questions asked were: (1) avoidance of sales tax or other taxes; (2) non – payment of duties or (3) lack of observation of trade regulations (4) foreign producers sell below international prices; (5) domestic producers unfairly sell below my prices; (6) avoidance of labour taxes/ regulations; and (7) violation of the firm's copyrights patents or trademarks.

vii. *Human Capital*

In the end, the firms were asked the role played by the human capital. They were asked the following questions: (1) the proportion of professional workers in the staff of the firm, (2) the proportion of skilled workers employed the firms, (3) the fraction of the unskilled working for the firm, (4) the fraction of female employees working for the firm, (5) the percentage of the firm's staff that had come from abroad to work in the firm. The ranking scale was from 1 to seven with the following percentages for the different ranks given: On scale 1 equals 0%, 2 equals less than 5%, 3 equals 6-10%, 4 equals 11-15%, 5 equals 16-20%, 6 equals 21-25% and 7 equals more than 25.

viii. *Firm Growth*

There is no universal way for assessing the growth of a business. Researchers have used different techniques for the determination of the growth rates according to the type and subject of the data which is available. Delmar et al. (2003) states that the different indicators used for measuring the growth rates are: assets, employment, market share, physical output, profits and sales. , but the measures which are mostly used for the estimation of the growth of the business are the sales and employment figures. Ayyagari et al. (2006); Beck et al. (2005); Fisman & Svensson (2007); Vial & Hanoteau (2010); Wang & You (2012) and Seker & Yang (2012) have also used sales figures. Aterido et al. (2009) and Aterido & Hallward – Driemeier et al. (2010) have used the employment statistics and Gaviria (2002); Dollar et al. (2005); Hallward – Driemeier et al. (2006) and Rahaman (2011) have used both sales and employment figures. In this research paper, the employment figures are taken as a measure of the business growth and the data used is for the period 2010 to 2012.

ix. *Control Variable: Firm Age*

Many authors of Industrial economics are of the opinion that the age of the firm plays a vital role in determining the economic performance of the firm. Small firms are usually younger than the larger firms. They do not have much experience in the industry as compared to the larger firms. This causes their growth to be uneven, and it also raises the possibility of the firm's failure (Rahaman, 2011). The research work conducted by many researchers contains the age of the firm as a control variable (Reinikka & Svensonn 2002; Ayyagari 2006; Hallward 2006; Fishman & Svensson 2007; Rahaman 2011; Wang & You 2012; Nguyen & Dijk 2012; and Seker & Yang 2012). In this research work also, the age of the firm has been used as a control variable. The firm's age, in this case, refers to the years of the firm spent in active participation in the business sector since the time of its formation.

x. *Control Variable: Firm Size*

The size of the firm is taken by many authors as the reason why different firms experience different growth rates (Rahaman, 2011). Reinikka and Svensonn (2002) and Hallward (2006) have employed the logarithm of the number of workers that were originally part of the firm so that the size factor could be included in the regression analysis. Rahaman (2011) had used the logarithm of the total assets of the firms as mentioned in the firm's balance sheets and also from the sales revenues of the firm so that the size factor could be adjusted in the regression analysis. Reinikka and Svensonn (2002) and Hallward (2006) have all used the logarithm of the sales income of the firm to account for the size of it. In this research paper, the number of employees in 2010 is used to control for the size of the firm.

c) Data Analysis Methods

The data analysis has been done using the statistical software packages of SPSS and AMOS. The maximum likelihood estimates (MLE) approach was selected for the determination of the Standard Equation Modelling (SEM), which was carried out in AMOS version 20. Anderson and Gerbing's two-step analysis technique was used in this research work. The first step consisted of obtaining the value for the measurement with the help of the Confirmatory Factor Analysis (CFA) and then carrying out the SEM according to the measurement model so that the theoretically derived model could be fit to the available data.

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IV. Empirical Results and Discussion

a) CFA Employment Growth Model

Confirmatory factor analysis (CFA) is a type of structural equation modelling (SEM) that deals specifically with measurement models, that is, the relationships between observed measures or indicators (e.g. test items, test scores, behavioural observation ratings) and latent variables or factors (Brown 2006). The CFA approach in SEM begins with a measurement model specification that has to be identified. CFA only makes use of the measurement model component of the general structural equation model (Hoyle 1995). CFA was carried out to determine the degree of model fit, the explained variances and standardized residual for the measurement variables, and the adequacy of the factor loadings. To assess the model fit, a satisfactory fit of the measurement model must be obtained before proceeding to test the general model as a whole (Mulaik & James 1995). Table 1 shows the characteristics of the measurement model.

Table 1 : Summary of constructs

Construct name	Initial number of items	Number of items carried forward to the analysis
Corruption	6	4
Infrastructure	5	4
Business regulations	7	4
Competition	6	4
Human capital	5	4
Finance	6	5
Crime	5	-

The overall model fit reported in Table 2 showed the overall fit indices for the CFA model were acceptable, with $\chi2/df = 1.846$, RMSEA = 0.064, IFI = 0.915, TLI = 0.901, CFI = 0.914, PGFI = 0.673. Based on Hair et al. (2010), at least three indices should be fitted to decide model fit. Keeping with the advice of Mueller and Hancocks (2008), the model fit well since RMSEA = 0.064 < 0.08, CFI = 0.914 > 0.90 and $\chi2/df = 1.846 < 3$, are very good fit.

Although the chi-square is not significant (p value less than 0.05), the model still fits because the chi-square statistic nearly always rejects the model when large samples are used (Bentler & Bonnet 1980; Jöreskog & Sörbom 1993). One example of a statistic that minimises the impact of sample size on the model is the chi-square value divided by the degree of freedom (Marsh & Hau 1996; Kline 2011). If this statistic is less than the value of 5, the model fits reasonably well, and if the ratio does not exceed 3.0; $\chi2/df \leq 3$, a model demonstrates reasonable fit (Kline, 2011). In this study, the model shows that the value of chi-square divided

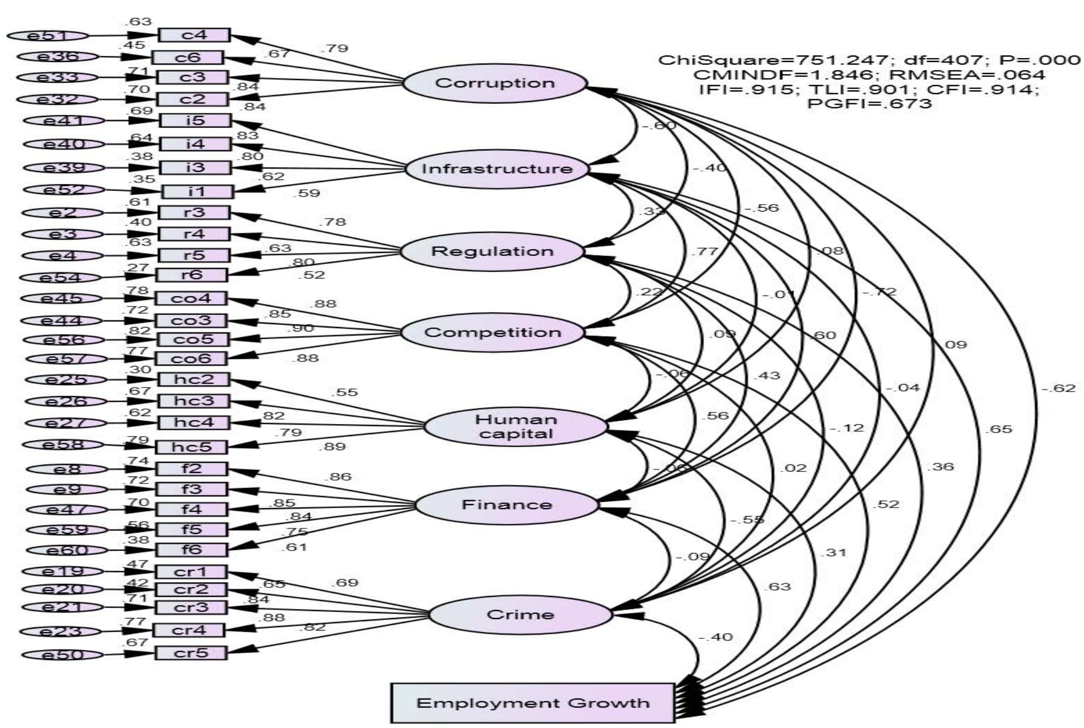

Figure 1 : CFA measurement measurement model

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by the degree of freedom is χ2/df = 1.846, so the model fits well. In addition, following the suggestion of Mueller and Hancocks (2008), the model fits well since RMSEA, CFI and χ2/df are very good fit. Figure (1) shows the complete CFA measurement for the model.

Table 2 : Summary of model fit indices for CFA model

Fit Index	Recommended Value	Observed Value
χ2		751.241
df		407
χ2/df	1.00-5.00 (Kline 2011)	1.846
RMSEA	< 0.08 (Steiger 1990)	0.064
IFI	> 0.90 (Bollen 1990)	0.915
TLI	> 0.90 (Tucker & Lewis 1973)	0.901
CFI	> 0.90 (Joreskog & Sorbom 1993)	0.914
PGFI	> 0.50 (James, Mulaik & Brett 1982)	0.673

Note. X2= Chi-Square, Df= Degree of freedom, RMSEA= Root mean square error of approximation fit index, IFI= Incremental fit index, TLI= Tucker-Lewis index, CFI= Comparative fit index, PGFI= Parsimony goodness of fit index.

The measurement model is then tested for its reliability, convergent validity, and discriminant validity.

i. *Reliability*

Table 3 presents Cronbach's alpha value and the construct reliability (CR). All the reliability values of the variables were above the suggested value of 0.60 (Hair et al. 2010). Therefore, all 30 items from the employment growth model were tested using CFA, as presented in Figure 1. The Cronbach's alpha reliability for all the variables indicated good internal consistency with readings ranging from 0.775 to 0.930, and the construct reliability (CR) for the seven latent variables greater than 0.70 as shown in Table 3. This shows that there is a satisfactory level of internal consistency of the measures (Hair et al., 2010).

ii. *Convergent Validity*

The factor loading, Composite Reliability (CR) and Average Variance Extracted (AVE) were used to test the measurement model's convergent validity. The item had a loading factor of greater than 0.50 as shown in Table 3. This shows that there exist some common points of convergence (Hair et al., 2010). The results for the Composite Reliability (CR) show values greater than 0.70 as shown in Table 3, suggesting that the variables have convergent validity (Hair et al. 2010). The Average Variable Extracted (AVE) values for the variables are above 0.50. This shows that the latent variables also had a high convergent validity (Fornell & Larchker, 1981; Hair et al., 2010).

iii. *Discriminant Validity*

For discriminant validity, both The Maximum Shared Squared Variance (MSV) and the Average Squared Variance (ASV) were used to test the discriminant validity of the measurement model. The MSV and the ASV results need to be lesser than the AVE for the discriminant validity (Hair et al., 2010). Table 3 shows that both the MSV and the ASV results are less than the AVE values which means that the discriminant values hold and the measurement model is according to the assumptions which were initially made. This study concluded that all the measurements have met the assumption of validity.

b) Structural Model

Since the reliability tests as well as the convergent and discriminant validities support the overall measurement quality, the measurement model is considered adequate for testing the hypothesized relationships of the model to study (Gerbing & Anderson 1992). The model for this study is shown in Figure 2.

The model fit indices reported that the overall fit indices were accepted for the SEM model, as shown in Table 4, with χ2/df = 1.796, which is less than 3; RMSEA = 0.062 (less than 0.08); IFI = 0.909 and CFI = 0.907 is greater than 0.90; PGFI = 0.678, which is more than 0.50. This indicates that the SEM for the employment growth model is acceptable and fits the data (Hair et al. 2010; Schumarker & Lomax 2010; Kline 2011).

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Table 3 : Reliability, convergent validity and discriminant validity

Constructs	Items	Factor Loadings	Cronbach's Alpha values	CR	AVE	MSV	ASV
Corruption	Corruption2	0.839	0.863	0.869	0.626	0.511	0.225
corruption	Corruption2	0.839	0.863	0.869	0.626	0.511	0.225
	Corruption3	0.845					
	Corruption4	0.791					
	Corruption6	0.673					
Infrastructure	Infrastructure1	0.594	0.799	0.805	0.515	0.485	0.236
	Infrastructure3	0.619					
	Infrastructure4	0.801					
	Infrastructure5	0.830					
Regulation	Regulation3	0.779	0.775	0.780	0.577	0.187	0.087
	Regulation4	0.631					
	Regulation5	0.795					
	Regulation6	0.520					
Competition	Competition3	0.847	0.930	0.931	0.771	0.585	0.210
	Competition4	0.882					
	Competition5	0.904					
	Competition6	0.879					
Human capital	Humancapital2	0.550	0.844	0.852	0.596	0.301	0.054
	Humancapital3	0.821					
	Humancapital4	0.789					
	Humancapital5	0.886					
Finance	Finance2	0.860	0.884	0.889	0.619	0.511	0.231
	Finance3	0.849					
	Finance4	0.835					
	Finance5	0.749					
	Finance6	0.612					
Crime	Crime1	0.689	0.883	0.884	0.607	0.301	0.055
	Crime3	0.840					
	Crime2	0.651					
	Crime4	0.878					
	Crime5	0.821					

Note: Composite reliability (CR), Average variance extracted (AVE), Maximum shared squared variance (MSV), and Average shared squared variance (ASV).

Table 4 : Summary of model fit indices for structural model

Fit Index	Observed Value
$\chi 2$	840.619
df	468
$\chi 2$/df	1.796
RMSEA	0.062
IFI	0.909
TLI	0.895
CFI	0.907
PGFI	0.678

Note. X2= Chi-Square, Df= Degree of freedom, RMSEA= Root mean square error of approximation fit index, IFI= Incremental fit index, TLI= Tucker-Lewis index, CFI= Comparative fit index, PGFI= Parsimony goodness of fit index.

Table 5 shows the coefficients of the impact of the business environment on the growth of the employment for the firms selected in the sample.

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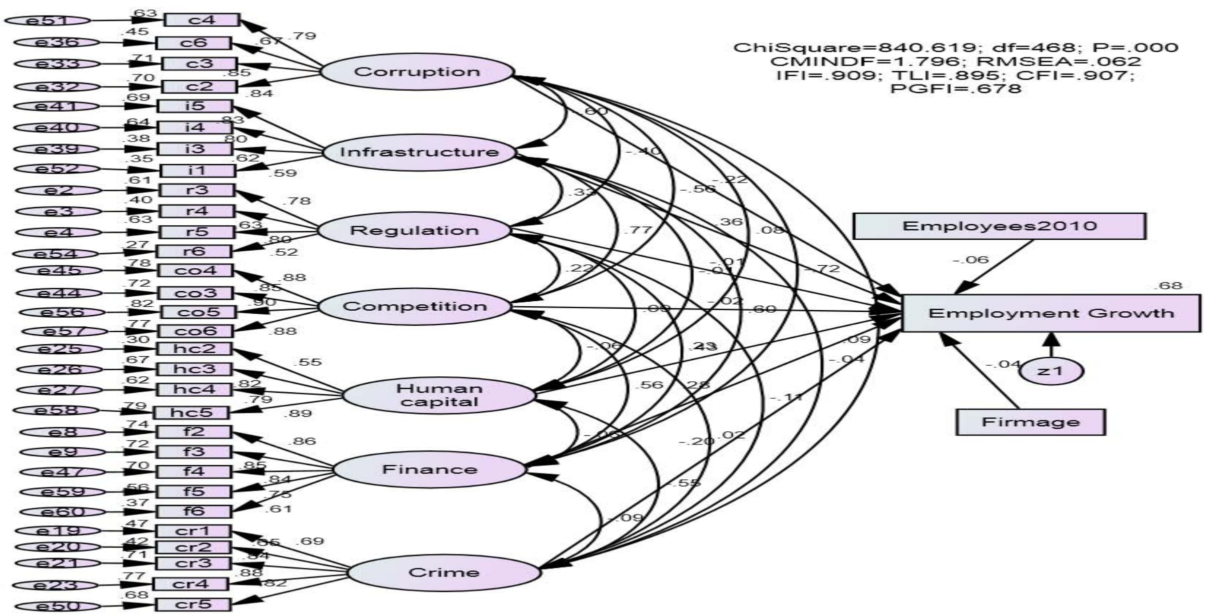

Figure 2 : Structural Equation Model (SEM) results

Empirical research is of the conclusion that corrupt nations reflect decreasing growth rates. Multiple factors justify this conclusion, including the fact that increased corruption turns off both, local and foreign investors; makes investors wary of introducing new technologies and has an overall increase in the cost of business for the investor. The current research documents an inverse relationship between corruption and employment growth, reflected by $\beta = -0.220$, $p<0.001$. This translates to a 0.22 per cent decrease in employment growth for every 1 per cent increase in corruption which is in alignment to Gaviria (2002) and Aterido et al. (2009) who are of the perspective that corruption drags down employment growth figures.

On a corresponding note to corruption, crime also similarly contributes to increasing the cost of doing business in any environment. Hence, the conclusions derived from this study reflects the above mathematically as $\beta = -0.201$, $p<0.001$, which implies that for every 1 per cent increase in crime in a society, the employment growth decreases by 0.20 per cent which is again consistent to observations earlier made by Gaviria (2002).

The relationship regarding the quality of human capital associated with a firm growth has been receiving limited attention at firm level data. Therefore, as per existing theories in this regard, employers being able to tap into higher quality human capital which includes aspects of skills, knowledge and expertise of its workforce have a competitive advantage over their peers (Barney, 1991). Therefore, studies have established a positive relationship between the level of human capital available with a firm, and an increase in the employment growth, mathematically depicted as $\beta = 0.232$, $p<0.001$. This in turn translates to a 0.23 per cent increase in employment growth for every 1 per cent increase in the quantum of human capital. It is also a fact that there have not been many studies evaluating how human capital influences the general performance of the firm, especially with regard to employment growth.

However, there are a few other studies which evaluate the impact this aspect has on the firm, besides the employment growth factor which includes the conclusions drawn upon by Nishantha (2011), Goedhys et al. (2010) and Fernandes (2008), all of which are in support of our conclusions derived. Nishantha (2011) had explored the relationship between human capital and sales growth and had established a positive relationship between the two. Goedhys et al. (2010) had analyzed the relationship between human capital verses labour productivity and had again established a positive relationship between the two. Fernandes (2008) had evaluated the effect human capital had on total factor productivity (TFP) and established a positive correlation between the two.

Multiple empirical studies reflect the importance of finance and its availability on the economic growth observed. To this end, Aterido and Hallward- Driemeier (2010) justify higher employment growth rates with the ease of accessing external financing for the firm. Aterido (2009) concludes that greater the ease of accessing external financing in a business, more would there be a corresponding increase in the employment growth rates.

Unfortunately, the availability of finances is a major issue in most of the developing and poor

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countries (Kinda 2009), which is also confirmed by the World Bank (2004). This research documents a negative relationship between the ease of availability of finance verses a firm's employment growth which is mathematically reflected as $\beta = -0.276$, $p<0.001$. This indicates that for every 1 per cent increase in challenges to obtaining external financing, the employment growth decreases by 0.28 per cent. On a similar note, research on how the availability of financing for a firm affects the firm's employment at firm level is rare. However, there are alternative studies which quantify the effect finance opportunities have on the firm's performance besides the employment growth perspective. The observed conclusions are in sync with results obtained by Ayyagari et al. (2006) and Beck et al. (2005) who both postulated that challenges in obtaining finances had a direct effect on the growth prospects of the firm.

Our research demonstrates that the presence of a good infrastructure network has a positive influence on employment growth and vice versa, mathematically represented as $\beta = .357$, $p<0.001$. This translates to a 1 per cent increase in infrastructure facilities providing for a 0.36 per cent increase in employment growth. This relationship seems to be particularly true for nations with run-down infrastructure facilities which is perhaps attributed to the effects of decreasing marginal return to infrastructure (Hallward-Driemeier et al. 2006). Correspondingly, Dollar et al. (2005) has concluded that aspects of non-availability of electrical power, lack of voice communication and unnecessary delays in processing imports through Customs significantly contributes to decreasing employment growth, although Hallward-Driemeier et al. (2006) is of the opinion that infrastructure is not observed to play such a major role in employment growth in the Chinese context.

The research makes it clear that the factor of competition does not play a major part in determining the growth of the employment of the firms. This does not differ with the research work conducted by Ayyagari et al. (2006). He discovered that an attitude which is against competition does not have any major influence on the sales growth of the firm.

The current research is of the conclusion that in the Libyan scenario, the presence or absence of business regulations is not significantly affecting employment growth in the firm's which is incidentally in contrast to earlier studies in this regard (Aterido & Hallward- Driemeier 2010; Aterido 2009; Hallward-Driemeier et al. 2006).

V. Conclusion

This research paper studies the effects of the business environment on the growth of the employment of the firms in Libya. The Structural Equation Model (SEM) is used to examine the data covering 207 manufacturing firms. The empirical results show that corruption, crime and access to finance are the main obstacles that hamper the employment growth of manufacturing firms in Libya. The results of this study, however, did not reveal any significant effect of competition and business regulations on the employment growth of firms. These results revealed that corruption is widespread in Libya and remains the most problematic factor for doing business. Furthermore, the legal and administrative framework to combat corruption is absent in the country. Thus, the government of Libya should enforce the Anti-Corruption Law to improve the business environment in Libya. The current government must work to address this issue, and enforce this law in the near future. Moreover, the financial system in Libya is underdeveloped, the overall quality of financial markets has been dismal, and the equity markets are barely emerging. To build an efficient and modern financial system that can support the private sector in Libya, the government should make the financial system more dynamic, by establishing a clear regulatory system and by continuing to open up the banking sector to private investment. They should also provide access to high quality financial services and to capital. In addition, The Libyan government faces significant challenges in exerting full control over security in the country, and remains one of the largest obstacles to stability in Libya. To improve the business environment in Libya, the government must work hard and take urgent steps to improve security.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 14 Issue 8 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

A Road-Map for Setting-up Food Business in India

By Tanu M Goyal & Arpita Mukherjee

Introduction- India, with a large and growing population and a diverse raw material base, plays a pivotal role in global demand and supply of food products (Food and Agriculture Organization (FAO) 2012). India is the second largest producer of fruits and vegetables in the world after China, producing around 180 million tons per year. Despite these advantages, the food processing sector faces several supply-side constraints and regulatory barriers. Only 7 per cent of the total Indian perishable produce is processed, which is extremely low compared to countries such as the United States (US, 65 per cent), Philippines (78 per cent) and China (23 per cent). Official estimates show that about 25-30 per cent of this produce goes waste between harvest and consumption (Chari and Raghavan 2012) due to lack of proper cold storage facilities (Parfitt et. al. 2010). India is not the only country where there is a large wastage. According to an estimate by the FAO roughly one-third of food produced for human consumption is lost or wasted in the supply chain globally, which amounts to about 1.3 billion tons per year (FAO 2011). Considering that by 2050 global population of around nine billion people has to be fed, it is important to minimize food wastages particularly in large food producing nations like India. Existing studies show that investment and technology spillovers in the entire food supply chain (from farm to fork) from foreign firms can help to improve the efficiency and reduce wastage of agriculture commodities (Chari and Raghavan 2012, Mukherjee et. al. 2014). This paper looks at present state of India's food supply chain, applicable regulations in the food sector, the barriers that exist and the scope for foreign investments in the food supply chain with the view of improving it. The barriers, opportunities and the go-to-market strategy highlighted in this paper are based on evidence collected during in-depth interviews with industry and policymakers in the sector.

GJMBR - B Classification : JEL Code: M20

ARDAD-MAPFORSETTING-UPFOODBUSINESSININDIA

Strictly as per the compliance and regulations of:

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A Road-Map for Setting-up Food Business in India

Tanu M Goyal [α] & Arpita Mukherjee [σ]

I. Introduction

India, with a large and growing population and a diverse raw material base, plays a pivotal role in global demand and supply of food products (Food and Agriculture Organization (FAO) 2012). India is the second largest producer of fruits and vegetables in the world after China, producing around 180 million tons per year.[1] Despite these advantages, the food processing sector faces several supply-side constraints and regulatory barriers. Only 7 per cent of the total Indian perishable produce is processed, which is extremely low compared to countries such as the United States (US, 65 per cent), Philippines (78 per cent) and China (23 per cent).[2] Official estimates show that about 25-30 per cent of this produce goes waste between harvest and consumption (Chari and Raghavan 2012) due to lack of proper cold storage facilities (Parfitt et. al. 2010). India is not the only country where there is a large wastage. According to an estimate by the FAO roughly one-third of food produced for human consumption is lost or wasted in the supply chain globally, which amounts to about 1.3 billion tons per year (FAO 2011). Considering that by 2050 global population of around nine billion people has to be fed, it is important to minimize food wastages particularly in large food producing nations like India. Existing studies show that investment and technology spillovers in the entire food supply chain (from farm to fork) from foreign firms can help to improve the efficiency and reduce wastage of agriculture commodities (Chari and Raghavan 2012, Mukherjee *et. al.* 2014). This paper looks at present state of India's food supply chain, applicable regulations in the food sector, the barriers that exist and the scope for foreign investments in the food supply chain with the view of improving it. The barriers, opportunities and the go-to-market strategy highlighted in this paper are based on evidence collected during in-depth interviews with industry and policymakers in the sector.

a) Food Sector in India

The Indian food industry is currently valued at $39.71 billion and is expected to reach $65.41 billion by 2018, registering a compound annual growth rate (CAGR) of 11 per cent.[3] Food and grocery constitute a substantial part of India's consumption basket accounting for around 31 per cent of the total consumption basket. In contrast, consumers in other countries spend a much lower proportion of their income in food and grocery—9 per cent in the US, 17 per cent in Brazil and 25 per cent in China.[4]

Food and grocery is the largest segment in India's retail sector, with a share of 69 per cent in India's total retail market size in 2013.[5] India ranks third after China and the US in the top ten global grocery retail markets.[6] At present, the bulk of the food and grocery is in traditional corner shops also known as unorganised retail. Even though the share of modern retail or corporate retail[7] in the food and grocery retail market is only three per cent, it has more than doubled since 2008 and is likely to grow further.

The growth of the modern retail sector has led to the evolution of different formats in food retail, including hypermarkets such as Auchan India and Dairy Farm Group, supermarkets such as More Megastore and neighbourhood convenience stores such as Reliance Fresh and Big Apple. According to Technopak's estimate, in 2013 there were over 280 hypermarkets and over 1,850 supermarkets that sold food and groceries.

While there are tremendous opportunities on the demand side, India also provides a strong supply base for companies in food businesses. Its arable land area of 159.7 million hectares (394.6 million acres) is the second largest in the world (after the US).[8] With its vast production base, India has the potential to become one of the largest food suppliers to the world and at the same time serve its own vast population.[9] Over time,

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[1] Chari and Raghavan, 2012

[2] Inputs from the Associated Chambers of Commerce and Industry of India (ASSOCHAM)

[3] All Dollar figures are in the United States (US) Dollars. Source: Indian Brand Equity Foundation.

[4] The Boston Consulting Group (2012).

[5] Technopak Advisors Private Limited.

[6] Information provided by British Retail Consortium (BRC).

[7] Modern retail is defined as a type of retail that has a corporate management. Generally, these are retail chains (unlike the one-shop family-owned traditional outlets) that are professionally managed with a transparent accounting system, centralised quality control and sourcing. They are also known as organised retail.

[8] http://www.ers.usda.gov/topics/international-markets-trade/countries-regions/india/basic-information.aspx (last accessed on March 10, 2014).

[9] Annual Report 2012-13, Ministry of Food Processing Industries, Government of India.

Global Journal of Management and Business Research (B) Volume XIV Issue VIII Version I Year 2014

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there has been a continuous increase in the production of food processing industries. The total value of the Indian food processing industry is expected to touch $194 billion by 2015 from a value of $121 billion in 2012, registering a growth of around 20 per cent per annum.[10] This is one of the fastest growing sectors in India.

While India has strong demand and a raw material base, its supply chain for food businesses is still in a nascent stage. However, the food logistics/supply chain business is growing at a rapid pace and has huge untapped potential. The Indian logistics sector accounted for a turnover of $90 billion in 2011. The sector was growing at around 15 per cent per annum until the slowdown of 2012.[11] In general, food logistics grows at 2.5 times the growth of the economy. The size of the cold storage market is around $3 billion and is growing at a CAGR of 11 per cent. The perishable product transaction value in India is estimated to be around 230 million metric tonnes. Cold storage facilities are available for only 10 per cent of the produce and of that majority (around 90 per cent) of the facilities are for potatoes. At present, India is able to store only 2 per cent of its farm produce in a temperature-controlled environment compared to 8 per cent in Asia-Pacific and 85 per cent in Europe and North America. This results in heavy post-harvest losses. It is estimated that India requires cold storage facilities for an additional 370 million metric tonnes for perishable commodities. [12] Thus, there is huge potential to invest in this sector.

The unsaturated market, high sector growth and large consumer base have made India an attractive destination for foreign companies in food businesses. The Indian government has initiated policy measures to facilitate the entry of foreign investments in the country. The next section discusses the regulatory structure and regulations for investment in the food business in India.

b) Regulatory Framework in the Food Sector

India has a quasi-federal governance structure with the responsibilities divided between the central, state and local governments. The responsibilities between the central government and the state governments and the areas of joint responsibility are listed in the Indian Constitution under three lists – Union List, State List and Concurrent List. Agriculture and the retail sector come under the state government and the central government plays a limited role except in drawing up broad regulations for areas such as allowing foreign direct investment (FDI) in retail. The states play a significant role in decisions on product sourcing, taxes and interstate mobility of agriculture products. They also play a key role in giving licences for retail operations along with the local bodies. Local bodies are responsible for town planning and zoning. Most regulations apply to both domestic and international food businesses and are non-discriminatory for foreign service providers. However, in some areas there are restrictions that apply only to foreign companies.

A company operating in food business has to comply by over 50 regulations and the total number of regulations depends on its area of operations. Some of the regulations across the food supply chain are discussed below.

i. *Regulations affecting Food Businesses*

Food manufacturers have to comply with regulations such as the Food Safety and Standards Act, 2006 (Ministry of Health and Family Welfare), Legal Metrology Act, 2009 (Ministry of Consumer Affairs) and central government and state specific environmental and labour regulations, among others. Most of these regulations are also applicable to retailers.

- ***Food Safety and Standards Act, 2006***

In August 2011, India implemented the Food Safety Standards Act (FSSA), 2006, which is applicable to all stakeholders in the food supply chain, except farmers. This Act is uniformly implemented in all states and has led to the establishment of the Food Safety and Standards Authority of India (FSSAI), which lays down safety and quality standards for food items and regulates their manufacture, storage, distribution, sale and imports. The Act has consolidated several central acts[13] and orders that applied to the food sector, with the objective of effective implementation, transparency and accountability. The FSSA has six key regulations related to food business:

- Licensing and Registration of Food Businesses Regulation
- Packaging and Labelling Regulation
- Food Product Standards and Food Additives Regulation
- Prohibition and Restriction on Sales Regulation
- Contaminants, Toxins and Residues Regulation
- Laboratory and Sampling Analysis Regulation

All food business operators in India, whether domestic or foreign, require an FSSAI licence to conduct business in the country. Although the food safety standards in India are based on the Codex Alimentarius and in 2013 the FSSAI began to harmonise its regulations with Codex Alimentarius, this process is still underway. Since the regulation is evolving importers, exporters and manufacturers of new products which are not listed with FSSAI are facing several issues, some of which are discussed later.

[10] Indian Brand Equity Foundation.
[11] Deloitte–ICC (2012).
[12] PHD Chambers and Yes Bank Limited (2012).

[13] These include the Prevention of Food Adulteration Act, 1954; Fruit Product Order, 1955; Solvent Extracted Oil, De-Oiled Meal and Edible Flour (Control) Order, 1967; Meat Food Products Order, 1973; Edible Oils Packing, 1998; Vegetable Oil Products Order, 1988; and Milk and Milk Product Amendment Regulations, 2009.

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- *Environmental Regulations*

Companies manufacturing in India have to adhere to the environmental laws in the country. The Central Pollution Control Board under the Ministry of Environment and Forests regulates the use of packaging materials and disposal of packaging waste by the industry. In India the major environment Acts that impact the food processing industry include the Environmental Protection Act, 1986, the Plastics (Manufacture, Usage and Waste Management) Rules, 2009, the Water (Prevention and Control of Pollution) Act, 1974, amended in 1988, the Water (Prevention and Control of Pollution) Cess Act, 1977, amended in 2003 and the Air (Prevention and Control of Pollution) Act, 1981, amended in 1987. Their implementation often varies from state-to-state.

- *Legal Metrology Act, 2009*

The Legal Metrology Act, 2009 establishes uniform standards of weights and measures. According to the Legal Metrology Packaged Commodities Rules, 2011 (which came into force on April 1, 2011), manufacturing, packing, selling or importing any pre-packaged commodity is prohibited unless it is in a standard quantity and carries all prescribed declarations. The Legal Metrology Act, 2009 imposes standard pack sizes for certain commodities as a consumer protection measure. This Act requires that the maximum retail price should be mentioned on the product label, which is not required by the EU and many other countries.

- *Other Standards and Labelling Requirement*

Food businesses in products such as milk-based products, baby food and food additives have to comply with the Bureau of Indian Standards (BIS). The BIS is under the Ministry of Consumer Affairs, Food & Public Distribution.

- *Regulations on Imported Products*

A part from those listed above, in case of imported products there are additional regulations. The Export Inspection Council (EIC) along with the Ministry of Commerce and Industries has laid down guidelines, acts and regulations on imported commodities. These are based on international standards—Codex Alimentarius. The EIC monitors imports of food items and checks the condition of the hold in which the goods are being transported, the visual/physical appearance of the goods and the labelling of the products. Customs officials check the consignments of edible/food products imported through ports, inland container depots, air cargo complexes, container freight stations and land customs stations. The port health officer checks the samples of imported food products. In addition, every imported food item at the time of its import is examined to have a valid shelf life of not less than 60 per cent of its original shelf life;[14] food articles that do not meet this condition cannot be sold in the domestic market. The Ministry also imposes labelling requirements such as the requirement to print information on the month and year when the commodity was manufactured/ packed or imported.

Other acts impacting imports of raw materials include the Livestock Importation Act, 1898 (this Act regulates, restricts or prohibits the import of any livestock that may affect human or animal health) and the Plant Quarantine Order, 2003 (this is an order by the central government to prohibit and regulate the import of agricultural goods).

- *Consumer Protection Regulations*

All stakeholders have to abide by the consumer protection regulations such as the Consumer Protection Act, 1986 and the Consumer Protection (Amendment) Act, 2002. The Ministry of Consumer Affairs provide guidelines for the protection of consumer interests and rights in India.

- *Regulations on Retail Operations*

Retailers are regulated by multiple authorities and regulations, which are largely at the state and local levels. These include Shops and Establishment Trade Licence, police clearance, FSSAI licence and fire clearance, among others.

Foreign companies interested in establishing presence in India are required to meet the FDI regulations which are discussed below:

c) FDI Regulations and Restrictions

FDI regulations in India are generally imposed and implemented by the central government.[15] A foreign investor in India falls under the Foreign Exchange Management Act (FEMA), 1999[16] of the Ministry of Finance. The Act is managed by the Reserve Bank of India (RBI), the central bank, and it consolidates and amends laws related to foreign investments in the country and profit repatriation.[17]

Foreign investment regulations are issued by the Department of Industrial Policy and Promotion (DIPP). In India, FDI is allowed through two routes: (a) automatic route and (b) government route. Under the automatic route no prior approval of the government is required, while under the government route proposals for FDI have to be cleared by the Foreign Investment Promotion Board (FIPB), constituted by the Ministry of Finance. The FIPB is an inter-ministerial body that examines and discusses proposals for foreign

[14] http://www.sethassociates.com/food-and-drug-industry-in-india.html (last accessed in June 2013).

[15] The only exception to this is the multi-brand retail FDI policy where implementation is at the state level.

[16] http://finmin.nic.in/the_ministry/dept_eco_affairs/capital_market_div/FEMA_act_1999.pdf (accessed on February 12, 2014).

[17] At present, necessary changes in the FEMA regulation to allow FDI in multi-brand retail are under review with Parliament.

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investments in select sectors. The Minister of Finance considers the recommendations of the FIPB on proposals for foreign investment up to Rs.12 billion ($193.5 million).[18] Proposals involving foreign investment of more than Rs.12 billion ($193.5 million) require the approval of the Cabinet Committee on Economic Affairs (CCEA).

Over time, the FDI policy in India has been liberalised. However, there are certain segments within the food supply chain such as retail where there are FDI restrictions[19] as discussed below:

- *Food Processing/Manufacturing*

The Indian government encourages foreign investment in manufacturing in the food processing sector and there is no discrimination between foreign and domestic investment in this sector. FDI up to 100 per cent through the automatic route is allowed for all processed food products except for items reserved for micro and small enterprises (MSEs), which include pickles, chutney and bread, among others. For manufacture of items reserved for MSEs, FDI is permissible under the automatic route up to 24 per cent. If the foreign investment is more than 24 per cent, it requires FIPB approval. Such an undertaking requires an industrial licence under the Industries (Development & Regulation) Act, 1951.[20]

- *Food Related Logistics*

Foreign investment is encouraged in the food logistics chain and 100 per cent FDI is allowed under the automatic route in storage, warehousing and cold chains. FDI up to 100 per cent is also allowed in IT (information technology) software related to supply chain development, trucking services, etc. The government has allowed foreign investment in dedicated freight corridors more recently allowed FDI in railways. However, there are FDI restrictions in certain segments of logistics such as air transport (FDI up to 49 per cent is allowed in scheduled air transport and 74 per cent in non-scheduled air transport).

- *Wholesale and Retail*

The FDI policy in wholesale and retail trade is complex and it varies across different segments. For example, 100 per cent FDI is allowed in the wholesale cash-and-carry[21] segment through the automatic route. It is subject to the condition that wholesale trade to group companies taken together should not exceed 25 per cent of the total turnover of the wholesale venture. In addition, a wholesale trader cannot open a retail outlet and sell directly to consumers. Up to 100 per cent FDI is also allowed in test marketing under the government/FIPB route. In August 2013, the Indian government changed the conditions for FDI in test marketing. Previously, investment in test marketing was only allowed for items for which the retailer had approval for manufacturing and the manufacturing facility needed to be set up simultaneously with the commencement of test marketing for the product. Moreover, test marketing was only allowed for a period of two years. In the renewed policy, the government has withdrawn all these conditions.[22]

India is probably the only country with a brand-based FDI in retail policy. Up to 100 per cent FDI is allowed in single-brand retail and 51 per cent FDI in multi-brand retail, subject to certain conditions. From August 2013, the entry routes for FDI in single-brand retail have been modified. Previously, FIPB approval was required for 100 per cent investment, but now up to 49 per cent investment is allowed under the automatic route; only investments exceeding 49 per cent require FIPB approval.

For e-commerce activities, 100 per cent FDI is permitted in business-to-business (B2B) through the automatic route; however, FDI is prohibited in business-to-consumer (B2C) operations. The government is reviewing the e-commerce policy which is likely to change in the near future.

Overall, a foreign retailer can operate in India through the wholesale cash-and-carry route, franchising (allowed through RBI approval on a case-by-case basis), distribution and commission agents, single-brand retail and though joint venture with a Indian partner in multi-brand retail. The FDI policy imposes certain conditions that discriminate against foreign retailers *vis-à-vis* domestic retailers. Specifically, in the case of multi-brand retail, there is a minimum capital requirement, a mandatory condition of 30 per cent local sourcing, state governments have the right to not allow FDI and foreign retailers are not allowed to do e-tailing.

The remaining sections of this paper are based on an analysis of in-depth discussions with industry and policymakers. In total 50 interviews were conducted. Evidence was collected for different modes of presence in the Indian market. The companies were further

[18] Conversions are made using the RBI exchange rate on February 17, 2014. $1 = Rs. 62.27.

[19] For details, see the DIPP Consolidated FDI Policy, October 2013 accessible at http://dipp.nic.in/English/Policies/FDI_Circular_01_2013.pdf (accessed on January 8, 2014).

[20] Ministry of Food Processing Industries.

[21] In India, wholesale trade is defined as sale of goods/merchandise to retailers, industrial, commercial, institutional or other professional business users or to other wholesalers and related subordinated service providers. Wholesale trading would, accordingly, be sales for the purpose of trade, business and profession, as opposed to sales for the purpose of personal consumption. The yardstick to determine whether the sale is wholesale or not would be the type of customers to whom the sale is made and not the size and volume of sales. Wholesale trading would include resale, processing and thereafter sale, bulk imports with export/ex-bonded warehouse business sales and B2B e-Commerce.

[22] 'Consolidated FDI Policy (effective from April 5, 2013)', DIPP, Ministry of Commerce and Industry, Government of India and Press Note 6, DIPP, Ministry of Commerce and Industry, Government of India.

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enquired about their experience in India, which was used to derive the barriers faced in the Indian market.

Based on the responses, market opportunities were identified.

d) Presence in the Indian Market

Considering the prevalent regulations in India, foreign companies adopt different modes for entry and operations in the Indian market. During the survey evidence was found for each route of entry in India and the experiences of companies were mapped to derive at the most preferred route of entry in the Indian market. The evidence and experiences are tabulated in Table 1

Table 1 : Evidence for Different Routes of Entry in India and their Experience in the Indian Market.

Route	Evidence	Experience
Wholly-owned subsidiary in manufacturing	Hindustan Unilever Limited, PepsiCo and ITC Limited	Companies get same treatment as domestic companies. The agri-business division of ITC Limited is one of the largest exporters of India
Franchising	McDonlads, Subway, Baskin Robbins and Auchan	Most companies have large footprints across the country and have set up pan-India supply chain
Wholesale trade/cash-and-carry operations	Metro Cash & Carry, Carrefour, Wal-Mart and Tesco	Companies have established strong backward linkages but this is not considered the best model of operation in the Indian market
Single-brand retail	No strong evidence	This route has not been used by global players in food business to enter India.
Multi-brand retail	Tesco	Government partially allowed FDI in multi brand retail in 2012 – the policy is still considered restrictive.
Direct sourcing	Cobra beer, Waitrose (John Lewis Partnership) and Aldi Einkauf	Growing preference for Indian products due to rising diaspora – foreign companies have contract with Indian manufacturers or have acquired assets.
Exporting	Waitrose, Walkers, Campina, Kraft Foods and Doritos	Exclusive agreements with Indian buyers and as the market for their products grow, many companies start manufacturing in India. Some companies have faced problems due to import policy in India
Non-store retail	No strong evidence	Globally food businesses have adopted this route but it is yet to take-off in the Indian market, particularly in the case of fast food chains.

Source: Primary survey

Only a few foreign companies operate in the logistics segment of the food supply chain as the supply chain infrastructure in India is still underdeveloped and companies have to make very large investments to set up end-to-end food supply chains. For instance, Maersk India Private Limited has invested in setting up logistics infrastructure in India. It formed a joint venture with the Container Corporation of India (Concor) to set up a cargo terminal at Nhava Sheva port in Mumbai. Companies such as Danfoss (a Danish company) provide specialised services such as cold storage facilities. Snowman Logistics Limited, which is a joint venture between Gateway Distriparks Limited, Mitsubishi Corporation and Nichirei Corporation of Japan and International Finance Corporation in India, is one of the first and the largest cold chain and logistics firm in India with pan-India operations. It provides services to several retailers.[23]

Foreign governments and funding agencies have partnered with the Indian government and private players to build infrastructure and freight corridors. For instance, the India–Japan partnership in developing the Delhi–Mumbai Freight Corridor and the interest of the UK government and companies in developing the Bangalore–Mumbai Economic Corridor (BMEC) have led to investments in freight corridors.

Overall, the interviews highlight that foreign companies are present in different segments of the food supply chain in India. They have adopted unique business models, customised their products and changed their strategies from time to time. For instance, several fast food chains (including McDonald's and KFC) had to change their products to cater to local tastes. PepsiCo India launched products such as "Nimbooz" (an Indian-style lime-based drink) and "Kurkure" for the Indian market. The interest in the Indian market is largely due to the large and growing number of upper and middle-class consumers and the availability of a low-priced, skilled workforce. Several retailers from EU member countries and other developed countries such as the US are facing a saturated domestic market, while the Indian market is unsaturated and the food supply chain has seen double-digit growth in the past decade. Many companies treat India as an alternative market to China, which enables them to diversify their risks. If the

[23] Reardon and Minten (2011).

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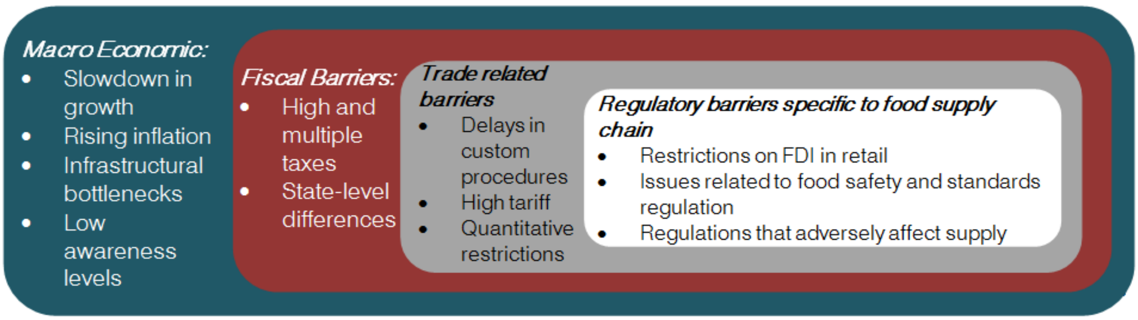
economy grows at around 8 per cent, companies in food business predict a 15-20 per cent growth in the next five years. The next section discusses barriers in the food supply chain.

e) Barrier in Setting up Food Supply Chain in India

Discussions with the industry revealed several barriers faced by companies in setting up food supply chain in India. Depending on their impact, barriers can be classified in different categories. There are macro-economic issues faced in the country that adversely affect all businesses and then there are barriers that are specific to the food business. Figure 1 presents these barriers depending on the nature of their impact on food businesses. Issues highlighted in the peripheral rectangle are faced by all industries irrespective of the segment of operation. As we move towards the center, the barriers are specific to food businesses and have a direct impact on their operations.

Figure 1 : Barriers Faced in Setting-up Food Supply Chain in India



Source: Primary survey

i. *Macro-Economic Issues*

India's growth rate has slowed in the past few years, which adversely affects consumer demand and purchase behaviour. According to the IMF's World Economic Outlook Update, in 2010 India's GDP grew at 10.3 per cent,[24] but the growth rate fell to 4.6 in 2013–14 and it is projected to be 5.4 per cent in 2014–15.[25] In the past few years, India has been facing high food inflation. Average food inflation was 10.1 per cent between 2011–12 (Gulati and Saini, 2013), which increased the cost of raw materials for manufacturers, while consumers reduce their discretionary consumption.

The lack of quality infrastructure is a major barrier in India. The erratic power supply and the high cost of power have adversely impacted all types of businesses. It is difficult to get land for projects such as mega food parks and the cost of land is high (Mukherjee *et al*., 2013). The poor quality of roads and lack of connectivity of rural roads with state and national highways is a major barrier for sourcing agriculture products. Survey participations pointed out that on average it takes almost seven days to transport food products from Mumbai to Kolkata, which is a distance of about 1,987 kilometres. The delays and lack of computerisation at check-posts along with the need for informal payments increase transit time and logistics costs. This adversely affects the quality of the raw materials and food products, which are perishable. The dedicated freight corridor projects are progressing at a slow pace and the Indian Railways charges a high freight rate to cross-subsidise the low passenger fares.[26] The cost of doing business in the country is high due to infrastructure problems and regulatory hurdles. According to the World Bank's *Ease of Doing Business Index*, India was ranked 134 in 2014 among 189 countries, which is much below other emerging markets such as China (96) and Brazil (116).[27]

Although India is a large market, Indian consumers are price sensitive and not very brand conscious (also see Mukherjee *et al*., 2012) with distinct food preferences that differ from global tastes. The consumers are heterogeneous and their demands for food items vary across different states of India. The consumption of packaged food and drink is lower in India than in developed countries and other developing countries. For example, per capita consumption of fruit juices in India is only 0.02 litres compared with China that has attained a level of 1.5 litres,[28] and per capita consumption of packaged drinking water in India is only 16.2 litres compared with 250 litres in Mexico.[29]

[24] IMF World Economic Outlook Update, January 2011. http://www.imf.org/external/pubs/ft/weo/2011/update/01/pdf/0111.pdf (accessed on February 26, 2014).

[25] IMF India 2014 Article IV Consultation accessible at http://www.imf.org/external/pubs/ft/scr/2014/cr1457.pdf (last accessed on February 26, 2014).

[26] Passenger fare-to-freight ratio in India stood at 0.25:1 in 2010-11. That is far below the corresponding average of 1.4:1 for Korea, 1.3:1 for France, 1.2:1 for China, 0.9:1 for Malaysia and Indonesia, and 0.7:1 for Thailand. (Source: "Milking freight to please passengers", *Business Line*, February 25, 2011).

[27] World Bank Doing Business Report 2014 accessible at http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB14-Full-Report.pdf(last accessed on February 26, 2014).

[28] *http://mofpi.nic.in/ContentPage.aspx?CategoryId=547*(last accessed in May 2013).

[29] *http://articles.economictimes.indiatimes.com/2012-07-03/news/32524033_1_bottled-water-water-market-capita-consumption* (last accessed in May 2013).

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ii. *Fiscal Barriers*

The food sector in India faces high and multilayered taxes that vary across states. This makes it difficult to have a uniform pan-India price. Certain products such as whisky, wines and spirits are heavily taxed by the central and state governments. In addition to taxes, some states and even local bodies impose *cess* such as the Octroi in Maharashtra and the Way Bill in West Bengal. Taxes vary by product categories and processed food often faces a higher tax than non-processed food. The Indian government has proposed a single Goods and Services Tax (GST) to streamline the tax system. However, the implementation of GST is getting delayed and there are on-going discussions and debate about whether agriculture products will be covered under GST.

iii. *Trade-related Barriers*

Apart from the restrictions that importers face due to regulations, high import tariffs on agro-products and delays in getting clearances from customs and other authorities are major barriers for importers. In India, tariffs on agriculture products are high, primarily to protect domestic producers and farmers (See Table 2). The country has a large negative trade balance in agriculture sector and there is a strong domestic lobby against tariff reduction. India is not keen to liberalise tariffs even bilaterally under its trade agreements. Table 2 shows that the tariff peaks are higher in the EU than in India, but while the EU is pushing for tariff liberalisation in its trade agreements, India is against it (See Table 2). This has adversely impacted the trade negotiations with the EU.

Table 2 : Applied MFN Tariff Rates of India and EU by Product Group

Products	Average Applied MFN Rate		Percentage of duty-free tariff lines		Maximum applied MFN Tariff	
	India (2010)	EU-27 (2011)	India (2010)	EU-27 (2011)	India (2010)	EU-27 (2011)
Dairy products	33.7	55.2	0	0	60	205
Fruit, vegetables, plants	30.3	11.5	1.3	18.8	100	170
Coffee, tea	56.1	6.2	0	27.1	100	25
Cereals & preparations	30.7	16.3	11.9	12.0	150	167
Oilseeds, fats & oils	18.8	7.1	16.9	43.5	100	171
Sugars and confectionery	34.4	29.1	0	0	60	131
Beverages & tobacco	70.8	19.2	0	19.8	150	162
Other agricultural products	21.5	4.8	11.2	65.1	70	131
Textiles	13.3	6.6	0	2.1	106	12
Clothing	15.1	11.5	0	0	315	12

Source: Compiled from WTO (2012).

India has also kept several agricultural products including whisky, wines and spirits, wheat, maize and dairy products (including milk, milk powder, ghee, butter and whey) in the sensitive/negative/exclusion list under major trade agreements. The country uses quantitative restrictions or quotas for agricultural raw materials such as sugar, dairy products, fruits and vegetables. This implies that only certain quantities of imports are allowed at certain tariff rates.

iv. *Regulatory Barriers*

Survey participants said that in India the central government has a limited role in regulating the food supply chain which leads to multiplicity of regulation across different states. Moreover, there is a lack of co-ordination between central government policies and the policies of different state governments.

- *Restrictions on FDI in Retail*

Survey participants said that India is the only country that has a brand-based FDI retail policy and the policy is unclear about how brands and sub-brands should be defined. Due to this lack of clarity, a number of retailers including Marks & Spencer did not get approval for food product retail when it applied through the single-brand retail route.

The objective of the FDI in retail policy is not clear. While the government wants FDI in retail, it seems to impose conditions that make the policy unattractive to foreign retailers. The government aims to reach certain goals such as reduction in food inflation by allowing FDI in retail, which is difficult to achieve. Food inflation in India is mainly due to supply-side constraints and foreign retailers can only help to streamline the supply chain if they have the supporting policies and there is an adequate supply of raw materials and food products.

The policy of allowing FDI in retail has been changed several times, which has created an uncertain operating environment. Even when the central government liberalised the FDI policy, it imposed additional requirements. Moreover states reserve the right to counter the policy. The new government at the centre led by the current Prime Minister – Narendra Damodardas Modi - have decided to put the FDI in retail liberalisation on hold for some time.

The mandatory requirement to invest in back-end operations is difficult for retailers who only deal with

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front-end retail and use the services of 3PL and 4PL logistics companies for the back-end. The retailers also had concerns regarding sourcing conditions from the SMEs. Sometimes SMEs do not meet the quality standards. This is especially a concern for specialised and high-end food and beverage retailers. It was also pointed out that the actual sourcing requirement depends on the consumption pattern of the target population and the 30 per cent sourcing requirement would be difficult to meet if the consumption behaviour is tilted towards products from multinational corporations.

The government is yet to change the FEMA regulations to allow FDI in multi-brand retail and, hence, retailers may face problems in repatriating profits.

- *Issues related to labelling and Standards*

Packaging and labelling requirements for processed foods and beverages are governed by several regulations including the FSSA, 2006, Legal Metrology Act, 2009 and standards set by BIS. Some of the regulations are evolving and are being implemented unevenly across different ports in the country. For example, in the second half of 2013, the FSSA 2006 was stringently imposed in Nhava Sheva port in Mumbai, which led to the withholding of several consignments of imported food products due to non-conformity with Indian regulations; at the same time, consignments into Chennai port did not face this problem. Retailers and importers in India face a challenge, since they need to repackage the products to meet the Indian standards. Previously, companies were allowed to do the packaging and labelling in bonded warehouses in India; however, now they are required to package and label the goods abroad. The government has imposed restrictions on the use of stickers on the labels. Since the Indian market for imported products is still small, it is difficult for companies, especially foreign small and medium enterprises to design labels only for India.

There are other issues related to the existing regulations. Under the Legal Metrology (Packaged Commodities) Rules, 2011, food and beverages can only be sold in certain standard sizes that have to be printed on the package in specific units. For instance, while previously companies that produced powder for beverages could print 'number of glasses' to denote the quantity of beverage, under the new Act they need to specify the quantity in grams. Companies observed that converting 'number of glasses' to grams might result in odd package sizes that would affect their promotional activities. The rule also does not account for shrinkages in the weight of food and beverage products due to weather conditions. If the weight is found to be below the printed weight, the company is held responsible.

The FSSA, 2006 lacks supply chain traceability. It does not cover farmers and, therefore, does not cover inspection/regulation of products that are supplied by farmers. Hence, other stakeholders in the supply chain can be held responsible for adulteration due to the presence of insecticides or pesticides at the farm level. Second, the classification and categorisation of food and beverages in India differ from global categorisation. This creates problems of parity and definitional synergy for global companies, especially those involved in imports of food and beverages. The additive approval process is also not aligned at the global level. International companies pointed out that as per Schedule 4 of FSSA, 2006, separate licences are required for the manufacture and distribution of different categories of foods and beverages, including proprietary foods, genetically modified foods, health supplements, functional foods and special dietary foods. Moreover, separate licences are required from the state and central governments, which complicates the licence application and approval process.

The product approval process under the FSSA 2006 is slow for several reasons. As per the FSSA Act, testing of all foods and beverages should be done in accredited laboratories. However, most states do not have adequate funds to set up a laboratory and the central government has not permitted any additional budget to the states for this purpose. There is also a lack of qualified food inspectors. Initially the Act mandated that food inspectors have a background in nutrition and food, but the lack of qualified people and pressure from trade unions led to a change in the requirement, making recruitment more flexible and allowing the recruitment of food inspectors from other science streams (such as physics). The lack of knowledge and experience of the inspectors has created problems. Overall, product approvals can take as long as nine months, which delays the establishment of manufacturing facilities. Importers pointed out that after the implementation of the FSSA 2006, the customs clearance process has become extremely cumbersome and causes delays. This is primarily because there are shortages of testing laboratories and FSSA is yet to adopt the global standards.

- *Regulations that Adversely Impact Sourcing*

The Agricultural Produce Marketing Committee Act (APMC, reformed in 2008) and the Essential Commodities Act, [30] 1955, adversely impact sourcing of raw materials as well as finished products. The APMC Act has not been reformed in several states and, therefore, agriculture products have to be sourced from state-controlled *mandis*. Most *mandis* suffer from poor storage, lack handling and processing facilities and do not have marketing channels. Around 15–25 per cent of the total produce sold *via* the APMC route gets wasted due to multiple intermediaries and poor *mandi*

[30] This Act provides for control over production, supply and distribution and trade and commerce of certain commodities such as foodstuff.

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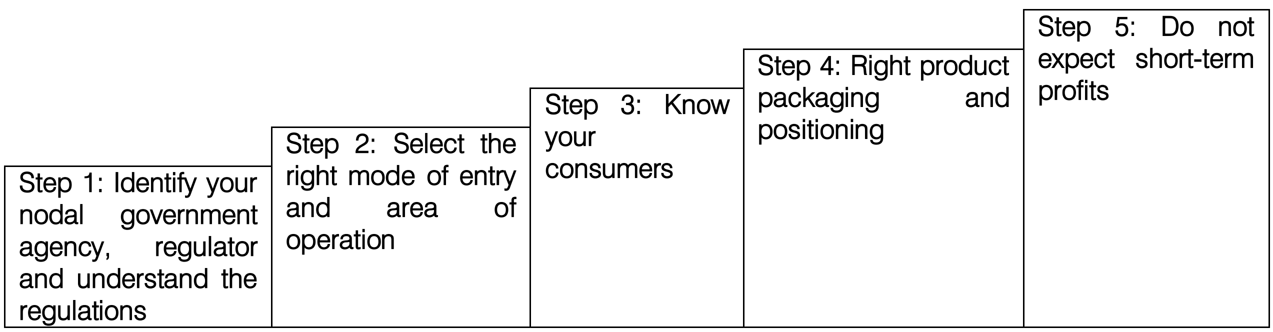
infrastructure. Moreover, an agricultural commodity moving from one state to another attracts a tax or '*mandi* fee' every time it enters a new regulated market. Therefore, the cost at which the produce is available to the manufacturer rises by almost 60 to 70 per cent (Pachouri, 2013). Even in states where direct procurement is allowed, private players have to pay *mandi* cess. In states such as West Bengal contract farming is not allowed and companies have to enter into agreements such as a partnership agreement with farmers for direct sourcing. This leads to uncertain operating environment for the manufacturers and farmers. The Essential Commodities Act, 1955 regulates and controls production, distribution and pricing of certain commodities such as sugar and private players find it difficult to source such products. Additionally, it was pointed out that environment regulations vary from state to state and implementation varies. This often becomes a problem for companies.

II. A Five-Point Go-to-Market Strategy

Considering that unexplored opportunities in the Indian market in the food supply chain sector, there is a huge potential for foreign companies to establish presence in India. However, due to the presence of several regulatory and other hurdles, companies have to adopt a customized market entry strategy to establish presence in India. Evidence collected from the companies already present in India reflects that some routes are preferred to enter India over others. A five point go-to-market strategy (see Figure 2) for foreign companies in discussed in this section.

Figure 2 : A Five-Point Go-to-Market Strategy



Source: Primary survey

Step 1: A large part of the policy with respect to the food supply chain is either enacted or implemented at the state level. Therefore, it is important for companies to identify a state government that is receptive to foreign investment. Agricultural raw materials are available in more than one state and, therefore, the company should carefully choose the ideal state for establishing operations. It is important to note that states differ widely in their norms and regulations. For example, for environment clearance, Gujarat, Karnataka and Haryana have categorised beverages under the 'red' category along with highly polluting industries, while states such as Orissa and Himachal Pradesh have placed it under the 'orange' category. Therefore, the company has to understand the state policies, incentives and regulation while selecting the state for establishing presence and select the state that offers the best ease of doing business.

In fact, a company that wants to establish a presence in India should get in touch with the Ministry of Food Processing Industry at the centre and the relevant ministries/departments of the state government. The State Industrial Development Corporations have been proactive in attracting investments; they have access to land and can help with other resources and clearances. They also offer several incentives under the industrial development policies which can be dovetailed with the incentives offered by the central government.

Indian government is focusing on manufacturing. To facilitate investment in manufacturing, the central government has set-up "Make in India" portal (http://www.makeinindia.com/), which is designed to provide information to foreign investors in India.

Several regulations impact the food supply chain and foreign companies should understand these regulations and foreign companies can avoid regulatory hurdles by adopting right strategies. For instance, if companies find the India labelling requirements restrictive, they can repackage the product in India, companies and meet the regulations.

Step 2: Since India is a difficult market, a joint venture with a like-minded local partner can ease the entry process and enable the company to understand the market. Most foreign companies are not aware of the test marketing route. This is one of the most flexible routes to enter the Indian market. The most difficult route to enter the food retail business (apart from fast food chains) is the single–brand retail route. Companies that have both manufacturing and retail operations should ideally enter India by establishing a wholly–owned subsidiary in manufacturing. This will enable them to get all benefits which are extended to an Indian company

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and the retail FDI restrictions will not be applicable in such cases.

Companies in manufacturing should ideally select an industrial cluster which offer better infrastructure for investment. The central and state governments are promoting agro-processing industrial clusters which offers better infrastructure and in some cases (especially the ones run by the state governments) provide facilities such as single window clearances.

India does not encourage the import of food products. Therefore, companies are likely to face barriers in food imports and there can be sporadic restrictions imposed by FSSAI. Moreover, imported products are costly due to high tariffs and other duties and therefore, their market reach is limited. Local manufacturing will enable a company to have competitive prices and better market reach.

Step 3: Indian consumers are heterogeneous and their tastes and preferences vary across states and even within states (Mukherjee *et al.,* 2012). For example, while tea is preferred in north India, there is a higher preference for coffee in southern states such as Tamil Nadu. Foreign manufacturers and retailers, therefore, should have a clear knowledge about their customers' tastes, religious taboos and shopping habits, among others. Once the products are successfully launched in India, many of them are exported. For example, PepsiCo's product "Kurkure" is now available in Pakistan, Kenya and Canada. During the survey, low-cost volume retailers pointed out that they have to source around 75–80 per cent of the products locally to cater to local tastes. The demand for imported products is growing but imported products are expensive and beyond the reach of the majority of shoppers who are price sensitive and not much brand conscious.

To address price sensitivities, foreign companies have adopted smart pricing strategies. For example, the Coca-Cola India launched "Chhota Coke", a 200 ml bottle at the price of Rs.5 (\$0.08)[31] especially for Indian consumers. This helped the company penetrate the market at a rapid pace. Until recently, a number of foreign companies tried different packaging sizes to penetrate the market, but the government has recently imposed restrictions on package sizes.

The shopping habits in India are different from the developed countries. Indians prefer to shop frequently for food and groceries and they have limited refrigeration facilities. Hence, neighbourhood store formats are more successful than supermarkets or hypermarkets. Modern retail is a new concept in India and modern retailers are offering some of the benefits of traditional retailers such as home delivery to increase their market share. Foreign retailers may face problems in offering the price that local shopkeepers offer due to their higher infrastructure costs. They, therefore, need innovative business practices to attract consumers.

Step 4: Although demand for packaged food is growing, most consumers still prefer to cook at home. Indian consumers are not very brand conscious particularly for food products and they experiment with brands. It is important for foreign companies to enhance their product and brand visibility through proper marketing. Some companies have roped in film personalities for advertisements, while others have designed innovative advertisements. Most retailers use promotions and offers by clubbing products or selling below the maximum retail price to attract consumers. While retailers prefer to use pamphlets and advertise through newspapers and the print media, large manufacturers have used television channels. Some of them also promote events such as cricket or other popular games.

India has a variety of climate conditions and the storage facilities are poor and inadequate. Therefore, proper packaging is important. Several global multinationals with high quality standards have faced issues such as insects being detected inside the packages due to poor storage and packaging. Even if these problems are caused by mishandling at the retail end, manufacturers are often held responsible. The supply chain in India is fragmented and a food manufacturer has to ensure that the products reach the neighbourhood *kirana* stores or traditional retail outlets on time and in the right condition. Therefore, they may have to adopt different packaging technology from what is done in developed countries.

Step 5: India is a large but a difficult market for players in the food supply chain. Companies should not expect short-term profits. The survey showed that profits can be reaped only after 3–5 years, and sometimes longer. Companies have to prepare for contingencies and delays. They should also be prepared to invest in the supply chain and distribution network before starting operations.

III. Conclusion

Despite the notable advantages as a producer and consumer of food products, India still lags behind its global counterparts in the food processing segment. As discussed, very small proportional of food products in India are consumable. Foreign companies have shown interest in the large and growing food and grocery market however, evidence reflect several barriers faced by them in India. The paper suggests that India offers immense potential for companies in food businesses if they can follow the right go-to-market strategy and have a clear understanding of the

[31] Conversions are made using the RBI exchange rate on February 17, 2014. \$1 = Rs. 62.27

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regulatory framework. Precisely, companies have to carefully plan their location, product, have innovative business practices and know their consumers. With a long term investment strategy, a foreign company is likely to succeed and make profits in India as has been the case of major multinationals that are already present in India.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 14 Issue 8 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Policy Mix and Economic Performance in Euro Area

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Abstract- Lack of coordination between the monetary and fiscal authorities will result in inferior overall economic performance. This paper studies the interactions between monetary and fiscal policies and its effect on the economic performance by using al cointegration tests in the case of Euro Area. This paper examines the causal relationship between output gap, public debt, budget deficit, interest rate and inflation rate, and the impact of monetary policy on public debt management, in Euro Area from 1999Q1 to 2013Q4. The evidence supports the idea that the monetary policy is more stabilizing in its influence on the economic activity than the budget policy. The particular stance of monetary policy affects the capacity of the government to finance the budget deficit by changing the cost of debt service and limiting or expanding the available sources of financing. The result does not let hear strong political coordination in Euro Area, a weak policy stance in one policy area burdens the other area and is unsustainable in the long term.

Keywords: monetary policy, fiscal policy, euro area, policy mix, public debt, budget deficit.

GJMBR - B Classification : JEL Code: N10

POLICYMIXANDECONOMICPERFORMANCEINEUROAREA

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Policy Mix and Economic Performance in Euro Area

Hounaida Daly [α] & Mounir Smida [σ]

Abstract- Lack of coordination between the monetary and fiscal authorities will result in inferior overall economic performance. This paper studies the interactions between monetary and fiscal policies and its effect on the economic performance by using al cointegration tests in the case of Euro Area. This paper examines the causal relationship between output gap, public debt, budget deficit, interest rate and inflation rate, and the impact of monetary policy on public debt management, in Euro Area from 1999Q1 to 2013Q4. The evidence supports the idea that the monetary policy is more stabilizing in its influence on the economic activity than the budget policy. The particular stance of monetary policy affects the capacity of the government to finance the budget deficit by changing the cost of debt service and limiting or expanding the available sources of financing. The result does not let hear strong political coordination in Euro Area, a weak policy stance in one policy area burdens the other area and is unsustainable in the long term.

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I. Introduction

The effective implementation of monetary and fiscal policies thus requires extensive coordination between the respective authorities. Effective coordination makes it easier for policy makers to achieve their stated policy objectives in an efficient manner .It also ensures the commitment of decision makers responsible for these two policy areas to mutually agreed objectives, thus helping to eliminate the problem of time inconsistency in the design of monetary policy.

Within this general framework, coordination can take the form of ongoing contacts between the fiscal and monetary authorities to decide jointly on aspects relating to policy design and implementation, or alternatively, coordination could be based on a set of rules and procedures which minimizes the need for frequent interaction; the particular characteristics of any given country and its degree of institutional development will determine the most efficient choice.

Until the mid 80s, in most countries monetary policy was subservient to fiscal policy; central banks were required to finance public sector deficits, including those arising from quasi-fiscal activities. Such subordination of monetary policy to fiscal needs introduced an inflationary bias. Following, policy changes in initiated in the US, however, there has been a worldwide trend, in the context of the modernization of financial markets, to set up institutional and operational mechanisms that would ensure more efficient overall policy design and implementation. These include the adoption of market-based monetary and debt management instruments, as well as moves to increase central bank independence.

Two fundamental issues need to be stressed regarding the nature of monetary and fiscal policy coordination. First, the overall policy mix as well as each individual policy must be set on a sustainable course. Second, monetary and fiscal policies operate in different time frames, with monetary policy adjusting almost on a continuous basis and economic agents reacting with much shorter lags to it than in the case of changes to fiscal policy, while fiscal policy takes time to adjust and economic agents react with a lag to such adjustments.

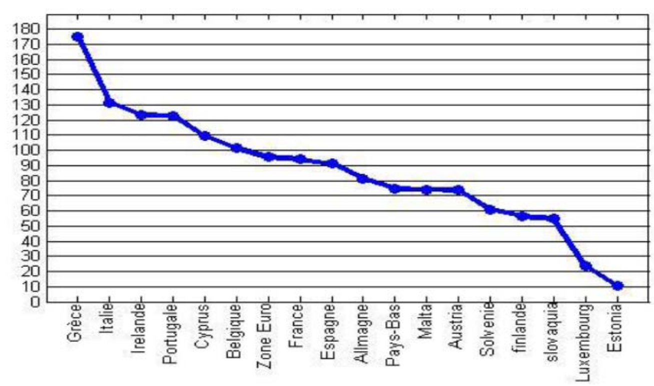

Figure 1 : Public debt to GDP ratio in Euro Area

The crisis of public debt is a symptom which must result in searching the main causes which are multiple from one country to another: a very strong government debt related to important structural problems (difficulty in raising the tax and controlling the expenditure). Debt crisis in the euro (Figure1) area indicates a succession of financial events which affect, since the beginning of 2010, in the wake of the financial crisis of 2007-2010.

First event is raised in 2010, with the Greek debt crisis as well as its important and constant deficit. It extends to autumn 2010 with public debt crisis of Ireland, caused by the rescue of national banks, made it necessary by previous excessive private debt. During summer 2011 a stock exchange storm occurs caused

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by the crisis of the Greek debt. At the end of the first quarter of 2013, the euro area debt-to-GDP ratio was established to 92.2% in Euro Area (EA17), against 90.6% at the end of the fourth quarter of 2012.Compared to the first quarter of 2012, the debt-to-GDP ratio has increased in both the Euro Area (from 88.2% to 92.2%) than in the EU27 (83.3% to 85.9%).

This paper examines the causal relationship between output gap, public debt, budget deficit, interest rate and inflation rate, and the impact of monetary policy on public debt management, in Euro Area from 1999Q1 to 2013Q4. The evidence does not let hear strong political coordination in Euro Area, and supports the idea that the monetary policy is more stabilizing in its influence on the economic activity than the budget policy. This paper deals with the problems of coordination between monetary and fiscal policies in Euro area. The particular stance of monetary policy affects the capacity of the government to finance the budget deficit by changing the cost of debt service and limiting or expanding the available sources of financing. Lack of coordination between the monetary and fiscal authorities will result in inferior overall economic performance. A weak policy stance in one policy area burdens the other area and is unsustainable in the long term.

The paper is organized as follows: Section 2 reviews the Empirical literature review. Section 3 analyzes Methodology and data. Section 4 presents variables analyses, section 5 presents empirical result and in end we have concluding remarks.

II. Empirical and Literature Review

Thinking about macroeconomic policy has been transformed in the past 20 years. Nearly all of us now analyse short-run macroeconomics using a simple three-equation system. This contains an IS curve, a Phillips curve and a Taylor-type rule for monetary policy. This was explained in papers by Sevensson (1977) and Ball (1999), and was applied to the UK in a simple paper by Bean (1998). This set-up contains no fiscal policy.

Kirsanova and al (2005) extend the three equations of monetary-policy model to a five equations model of monetary and fiscal policies by adding a Taylor-type rule for fiscal policy, and also by adding an equation which tracks the evolution of public debt. They show that one can use the resulting of five-equation system to analyse the interaction of monetary policy and fiscal policy.

They suppose that there are a lag period of implementation of fiscal policy that reflects the legislative and political processes required for important modifications in discretionary fiscal policy, and shift a one period of effect of the monetary policy, which reflects the transmission system.

Kuttner (2002) doubts if the budget policy, taking into account these delays, could arrive to an interaction with the monetary policy and a period of effect of the shift monetary policy, which reflects the transmission mechanism.

a) The Three-equation Taylor-type macroeconomics

There is an IS curve, a Phllips curve, a Taylor rule for monetary policy, and no active fiscal policy. The first equation is an IS curve, showing the evolution of the output gap (y_t) driven by the real interest rate (r_t):

$$y_t = ky_{t-1} - \delta r_{t-1} + \epsilon_t \qquad (1)$$

Where (ε_t) is a demand shock. As discussed by Woodford (2003), an equation like this can be obtained by optimizing behavior of individuals who choose consumption, given by a budget constraint.

The second equation is an accelerationist Philips curve. This describes the dynamics of inflation (π_t) in term of past inflation and he output gap:

$$\pi_t = \pi_{t-1} + \omega y_{t-1} + \vartheta_t \qquad (2)$$

Where (π_t) is an inflation shock.

In these two equations, the real interest rate is taken to be the instrument of monetary policy, and it affects output with the lag of one period. It then takes output another period to affect inflation. Following Bean (1998), there is "persistence" in output as well as in inflation process.

The third equation Taylor (1995) famously demonstrated that actual US monetary policy could be well described by a simple rule that relates the real interest rate to inflation and output gap, with parameters θ_Z and θ_Y respectively:

$$r_t = \theta_\pi \pi_t + \theta_y y_t \qquad (3)$$

The first term in the Taylor rule shows that if inflation raised to weaken demand, which will reduce inflation. The second term shows that the real interest rate is raised if output rises.

Let the preferences of the monetary policy-maker be:

$$L = E_0 \frac{1}{2} \sum_{t=0} \beta^t (\pi_t^2 + \alpha (y_t - \bar{y})^2) \qquad (4)$$

Where E_0 denotes expectations conditional on information available at time zero. Every period, the loss function penalizes deviations of inflation from its target (here zero for simplicity), and of output from its target, $\bar{y}$, where $\bar{y}$ denotes the extent to which the output target is in excess of its potential level. The parameter **α** denotes the relative weight given to deviations of output from target.

b) The Five-equation macroeconomics with fiscal policy

Kirsanova and al. (2005) add fiscal policy to the model, by adding a description of the behavior of the

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fiscal policy authority, and also an equation showing the evolution of public debt. The model presented here is analyzed in more detail in Sthein (2006).

The first equation is, as before, a dynamic IS curve:

$$y_t = ky_{t-1} - \delta r_{t-1} + \omega b_t + \delta g_t + \epsilon_t \qquad (5)$$

Where ε_t is a demand shock.

As in equation (1), monetary policy sets the interest rate which affects output with a lag. Fiscal policy will be taken to mean changes in government expenditure, g_t , not change in tax rates.

The second equation is, as before, a standard accelerationist Phillips curve:

$$\pi_t = \pi_{t-1} + \omega y_{t-1} + \vartheta_t \qquad (7)$$

Note that, in the five-equation model, (i) both fiscal policy and monetary policy affect the IS curve, and (ii) neither policy influences inflation, other than through an indirect effect via output. This means that, in the control of inflation and output, he two instruments are perfect substitutes.

The real stock of debt at the beginning of this period (b_t) depends on the stock of debt at the beginning of the last period, (b_{t-1}), plus the flows that occur between t-1 and t, in the following way:

$$\mathrm{b_t} = (1 + \mathrm{r_0})\, \mathrm{b_{t-1}} + \mathrm{r_{t-1}} \mathrm{b_{0+}}\, \mathrm{g_{t-1}} - \mathrm{y_{t-1}} + {}_{\mathrm{t}} \qquad (8)$$

Where μ_t is a debt shock.

When we return to the three-equation model if (i) government expenditure was exogenous, so that we could include any changes in government spending in the (exogenous) demand shock, ε_t , (ii) we could impose Ricardian Equivalence, by setting $\omega = 0$, and (iii) there were no other effects of debt accumulation. That last requirement would effectively mean that endogenous accumulation of debt did not induce changes in government expenditure or the interest rate, so as to avoid fiscal insolvency.

The five-equation model is completed by adding two equations showing the behavior of monetary policy and fiscal policy to the three equations (5, (6) and (7.)

Dixit and Lambertini (2000) consider the interactions between policies in a configuration where the monetary authority controls the inflation. The source of conflict is that the fiscal authority aims to increase output and inflation than the monetary authority. The non-cooperative Nash equilibrium has both a higher inflation and a decline in production commitment by the monetary authority is not appropriate or sufficient if fiscal policy is active, but the budget commitment hearing would result in a better outcome.

Melitz (1997) examine the interaction between monetary and fiscal policies in a pooled regression annual data on 19 OECD countries. He notes that the monetary and fiscal policies settle in opposed directions, as substitutes, then, that the budget policy plays a stabilizing role of low debt « the taxes behave in a preoccupation with a stabilization, but move the expenditure in a destabilizing way ».

Favero and Monacelli (2003) studies the interactions of policies by using Markov-Switching Vector Autoregressive Models (Krolzig, 1997), they stipulated that although fiscal policy shall be subject to a given regime change in an endogenous way and the regime changes monetarist are imposed in an exogenic way. They note than in the U.S., only between 1987 and 2001 can be described as passive fiscal regime. Thus, Woodford (1998) affirms that since 1980 the passivity would be a good description, and Gali and Perotti (2003) found that fiscal policy more and more passive during this period, after having discussed significant contributions to monetary and fiscal policies and their interactions.

Hughes and Hallett (2005) use individual regressions by instrumental variables to study the interactions between monetary and fiscal policies in the United Kingdom and the euro area. He notes that monetary and fiscal policies acting as substitutes in the UK, but complement each other in the euro area.

Kirsanova and al. (2006) study the interactions between fiscal and monetary policy when it stabilize a single economy against shocks in a dynamic environment. They suppose that fiscal and monetary policies stabilize the economy by causing changes in aggregate demand. Thus, they find that if policy makers are both volunteers, then the best result is obtained when the tax authority can perform monetary policy.

J.J.Reade and J.Sthe (2008) applied the cointegrated VAR method to study the interaction of monetary and fiscal policy and its effect on the sustainability of developments in public debt in the United States in 1960-2005. They conclude that fiscal policy has ensured the sustainability of long-term debt by responding to the increase in debt in a way that the stabilization of the reaction was moderate. However, according to their results, discretionary fiscal policy did not ensure a countercyclical behavior. In addition, monetary policy has followed a Taylor rule type and corrected the imbalance both in the short and long term.

III. Methodology and Data

The present study is carried out using annual time series of Euro Area 1999Q1-2013Q4. The data used include y_t is the output gap π_t, the inflation rate,r_t the nominal interest rate, d_t the public debt pb_t and the primary government balance defined as government receipts minus spending. The latter two fiscal variables are represented as fractions of GDP.

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For inflation, we calculate this from the consumer price index (CPI) measure as the most appropriate measure. Debt, deficit, interest rate and inflation rate variables are downloaded from the Annual Macro-Economic database (AMECO) and the output gap is downloaded from the International Monetary Fund (IMF).

Following the literature, the interest rate rt is the instrument of monetary policy, while pbt is defined here as the instrument of fiscal policy. There is disagreement whether the fiscal instrument should be taxes or spending or the balance. Kirsanova et al. (2005) take government spending to be the tool, Schmitt-Grohé and Uribe (2004) consider taxation and a number of others take both (for example Muscatelli and Tirelli (2004); Gali and Perotti (2003).

Considering fiscal variables, there is disagreement over whether taxes, government spending or the primary balance ought to be used as the fiscal tool. Primary balance data is defined as:

$$\mathrm{PB_t} = \mathrm{T_t} - \mathrm{G_t}$$

Hendry (1980) notes that measures of the public debt are readily available and accord to the theoretical variable for gross debt, which can deviate dramatically from net debt.

Our model allows for non-stationarity data and endogeneity, questions such as the role of monetary policy in debt-sustainability can be investigated in this manner.

The empirical strategy used in our study can be combined to form vector autoregression:

$$\Delta X_t = \alpha \breve{}\ {}^{*}_{t-1} + \sum_{i=1}^{k-1} {}_{i}\ \mathrm{X_{t-k}} + \mathrm{u_t},$$

where $\breve{\beta} = (\beta, \beta_0)'$, $X^*_{t-1} = (X_{t-1}, 1)$, $\Gamma_i = -\sum_{j=i+1}^{k} \Pi_j$ and $\mathrm{X}^*_{t-1} = (X_{t-1}, 1)$. the $\breve{\beta}'\mathrm{X}^*_{t-1}$ terms are cointegrating vectors, the stationary relationships between non-stationary variables, or steady-state relationships. Importantly E(β' X_t), since these cointegrating vectors describe steady state relationships which must be mean zero.

Three-stage procedure is followed. First, we search for the order of integration of the different time series using unit root tests. Generally, a variable is said to be integrated of order d, written by I(d), if it turns out to be stationary (integrated of order 0, I(0) after differencing d times. In this paper, we conduct unit root tests using the Augmented Dickey-Fuller(ADF) Dickey and Fuller (1979), Phillips-Perron (PP) Phillips-Perron (1988) tests and Kwiatkowski, Phillips, Shmidt and Shin (1992) (KPSS) tests. We use three tests in order to check the robustness of the results. One advantage of the PP test over the ADF test is that the former is robust to general forms of heteroskedasticity in the error term. Akaike information criterion (AIC) isused to select the lag length in ADF test, while Newey-West Bartlett kernel is used to select the bandwidth for the PP test. These tests are carried out by the Logiciel E-Views 6.

IV. Empirical Results

In this section we present the evolution of the main economic variables during the period of our study 1999Q1 to 2013Q4 and the unit root test. In order to describe the economic cycle of the Euro Area, we use the description of data, such as public debt, primary balance, nominal interest rate, inflation and output gap.

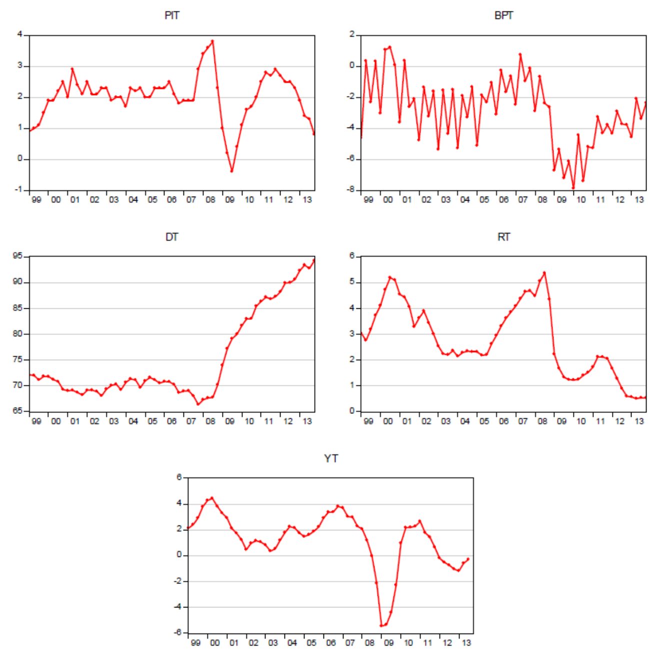

Figure 2 : Evolution of the main variables

Based on the ADF, PP and KPSS unit root tests, we find that all tested series are non-stationary in level, that is, we cannot reject the null hypothesis of non-stationarity. However, the stationarity property is reached after first differencing the series for r_t and pb_t and after second differencing for d_t, and y_t. Unit root testing is carried out and reported in Table 1, 2 and 3. Augmented Dickey-Fuller (ADF) unit root tests are carried out using enough lags for each variable to ensure that no residual autocorrelation remains.

Table 1 : Results of ADF and PP unit root tests

Variables	ADF Level	ADF First difference	PP Level	PP First difference
d_t	-1.054850	-5.454765	-1.292041	-2.954490
y_t	-2.712947	-2.732191	-2.821901	-2.203366
π_t	-1.676087	-5.516187	-3.000098	-5.614475
pb_t	-6.557104	-7.69769	-2.909461	-2.669498
r_t	-2.189057	-4.285402	-3.167218	-1.967961

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Table 1 : Results of KPSS unit root tests

KPSS		
Variables	Level	First difference
d_t	0.220191	0.073592
y_t	0.149442	0.127639
π_t	0.055811	0.35796
pb_t	-6.557104	0.124578
r_t	0.101077	0.52157

According to the results of these three tests, we can conclude that the following series: Public debt, inflation, primary balance, output gap and nominal interest rates are non-stationary. The non-stationary character of the series used to search for the presence of a stationary or more linear combinations of these variables. Indeed, the study of the series in first difference for the inflation rate and the nominal interest rate, and the second difference for the remaining variables, ensures the stationary nature of differentiated series.

However, the three tests retain the integration of order 1 of the following series: nominal interest rate and inflation rate and the integration of order 2 of public debt, primary balance and the output gap. This implies the existence of cointegration between the various variables.

The cointegration test is used to check the long-term equilibrium relationship between the variables d_t, pb_t, r_t,, π_t and y_t. The presence of an equilibrium relationship among these variables is the most used formally tested using statistical procedures, are those of Engle and Granger (1987) and Johansen (1988). If the presence of cointegration is confirmed between different variables, then Engle and Granger (1987) error correction specification can be used to test for Granger causality and show its direction.

Johansen cointegration results are reported in Table 4 and 5

Table 4 : Trace test results

Series	Trace statistic	Critical value (5%)	Probability
None	55.09319	29.79707	0.0000
At most 1	16.10871	15.49471	0.0000
At most 2	0.003144	3.841466	0.9536

From Table 4, we see that the three variables are cointegrated, where they have a cointegrating relationship long term. Therefore, the null hypothesis of no cointegration is rejected because the trace test indicates two cointegrating equations. Moreover, the existence of cointegration relationship justifies the adoption of a model error correction Engle and Granger (1987).

We see from Table 5 that the two variables are cointegrated, where they have a cointegrating relationship long term. Therefore, the null hypothesis of no cointegration is rejected because the trace test indicates one cointegrating equation. Moreover, the existence of cointegration relationship justifies the adoption of a model error correction Engle and Granger1987.

Table 5 : Trace test results

Series	Trace statistic	Critical value (5%)	Probability
None	17.58206	15.49471	0.0239
At most 1	2.505959	3.841466	0.1134

Cointegration between series indicates causality relationships confirmed in the long term, but it does not give the direction of causality. Therefore, the vector error correction model (VECM) is used to examine causality in the short term as well as Granger causality in the long term. The VECM is a template that models adjustments leading to a state of long-term equilibrium. This is a model which incorporates the time, the evolution of short and long term. Thus, the use of error correction model can highlight the common cointegrating relationship (common trend) and deducing the interactions between variables.

Results suggest that there is a causal relationship from long-term public debt and budget deficit to the output gap (the term correction associated with the restoring force x error is negative (-0.266766)., and is significantly different from zero at 5\% statistical level (prob. equal to 0.0347) so there is catching up to the equilibrium value ie, a mechanism error correction: in the long term the imbalances between 3 variables are offset so the series have similar trends.

Nevertheless, in the short term testing and test Wald we find that 'there is not a causal relationship from the budget deficit and public debt to output gap (Chi-square: 0.8686 pro> 0005 therefore we accept the null hypothesis). The value of R2 = 0.61% > 0.60% and the Prob (F-statistic) 0.000647 <0.005 shows an explanatory power of the model.

Concerning tests of residues, we tested serial correlation, so the model does not admit a serial correlation. The model errors are heteroscedastic since the value of probability is less than 5 % and normality test presented in the following figure.

In contrast, the causal relationship between the interest rate and the inflation rate is as follows: at a disaggregated level, the results suggest that there is a causal relationship from long-term inflation rate of interest (the term associated with the restoring force β error correction is negative (-0.007716) and is significantly different from zero at statistical threshold of 5 % (Prob= 0.0347). There so much catching up to the equilibrium value ie, an error correction mechanism: in the long term the imbalances between the interest rate and the inflation rate are offset so the series have similar trends.

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Nevertheless, in the short term, testing the Wald test we see that there is a causal relationship from the inflation rate to the interest rate (Chi-square: pro 0.0097 <0.005 so we do not accept hypothesis null). The value of R2 = 53% is less than 60% and the Prob (F-statistic) 0.000032 < 0.005 shows an average explanatory power of the model.

Concerning tests of residues, we tested serial correlation (we have: Prob Chi-Square (2) = 0.7315 is greater than 0.005. So the model does not admit a serial correlation. The model errors are heteroscedastic since the value of probability is less than 5 % (prob. Chi-Square 0.0313 we reject the null hypothesis) and normality test presented in the following figure.

Indeed, Granger (1969) introduced the concept of non-causality, which aims to make the optimal forecast made at the variables. The causality test's objective is to evaluate the temporal order and the ability to forecast variables. Thus, it allows to formalize statistically economic relations between the variables of monetary and fiscal policies for obvious reasons of economic policy but also to study the variables that are likely to predict the evolution of variables monetary and fiscal policies and inflation. The causation analysis will highlight the interactions between the variables of monetary and fiscal policies. Thus, it can also have "information on the temporal relations between variables.

The relationship between debt and instruments of monetary policy will be analyzed from the causality test Granger (1969). This test is to study the relationship between debt and the different variables of fiscal policy. If the coefficients values of debt are significant, then the primary balance and the output gap is a "cause" of the debt.

Table 6 : Granger Causality Test

Nul Hypothesis	Obs.	F-statstic	Prob.
DT Does not Granger Cause BPT	58	0.23281	0.7931
BPT Does not Granger Cause DT		3.21514	0.0481
YT Does not Granger Cause BPT	57	8.98176	0.0004
BPT Does not Granger Cause YT		0.04700	0.9541
YT Does not Granger CauseD T	57	7.84317	0.0011
DT Does not Granger Cause TY		0.36158	0.6983

Table 6 shows the one hand, a bi-directional causality between pairs of variables (debt and deficit) (the output gap and the budget deficit), (debt and the output gap). On the other hand, a uni-directional causality between the couple (the output gap and the budget deficit).

Table 7 : Granger Causality Test

Nul Hypothesis	Obs.	F-statstic	Prob.
PIT Does not Granger Cause RT	58	4.37549	0.0174
RT Does not Granger Cause PIT		0.82804	0.4425

The Table 7 above shows a bi-directional causality between pairs of variables (the interest rate and inflation rate). The presence of bi-directional causality denotes variables that influence each other in terms of forecasting ability. On the other hand, a unidirectional causality between the pair of variables (inflation causes interest rates Granger).

V. Conclusions

The stabilization of expectations through monetary policy can only be successful if public finances do not give rise to destabilizing expectations; the pursuit of price stability could lead to very high interest rates or a large loss of international reserves if the markets called policy credibility into question owing to an unfavorable perception of the fiscal stance. At the same time, the less credible monetary policy is, the larger the burden on fiscal policy, since interest rates would tend to be higher than otherwise.

Policy coordination needs to be undertaken at two different levels. First, there is a need to address the constraints that arise in the short term regarding the operating procedures of monetary and fiscal policies. Second, policy coordination also has to deal with the long-term macroeconomic effects that could arise from an unbalanced policy mix.

Based on our model, we find that, at the aggregate level, there is evidence of unidirectional causality between pairs of variables (budget deficit cause public debt) (output gap cause t budget deficit) (output gap cause public debt). It is observed that the public debt has a direct impact on the budget deficit, and it is observed that the budget deficit and public debt have a direct impact on the output gap. Also, we find a unidirectional causality between the pair of variables (inflation causes interest rates Granger) indeed, we note that the interest rate has a direct impact on the rate inflation. At the disaggregated level, the results suggest that there is a causal relationship to long-term public debt from dt and the budget deficit bt to yt as a causal relationship from long-term rate of inflation in interest rates. So there is a catch to the equilibrium value, an error correction mechanism: long-term imbalances between different variables are offset so that the series have similar trends.

Nevertheless, in the short term, we see that there is no causal relationship from the budget deficit and public debt to output gap; however, we see that there is a causal relationship ranging from inflation to interest rates.

We conclud that monetary policy has minimal impact on output via the output gap; nonetheless, this ought to be somewhat expected since economic theory implies that neither monetary nor fiscal policy ought to be able to permanently impact economic growth. The fiscal policy rule has a counter-cyclical output gap term, and a debt correction term. There appears to be a negative impact of fiscal proigacy long-term in terms of

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lower than potential economic growth, but in the short-term fiscal policy does appear able to inuence output relative to potential. This conclusion would appear relevant for the debate on the efficacy of fiscal stimuli; they are effective in the short term, but in the longer term should be phased out, rather akin to the traditional textbook exposition of fiscal policy. Our results show that there is no strong interaction between monetary policy and fiscal policy in the euro zone. Without efficient policy coordination, financial instability could ensure, leading to high interest rates, exchange rate pressures, rapid inflation, and an adverse impact on economic growth.

Efficient coordination of monetary and fiscal policies will only be possible if account is taken of the need for policy sustainability and credibility. Both the overall policy framework as well as each policy area considered individually must be set on a sustainable course and be credible. To burden one policy area excessively as a result of a weak stance in the other policy area will sooner or later doom the achievement of the objectives of macroeconomic policy.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 14 Issue 8 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Human Capital, Innovation Capacity and Quality of Economic Growth-Based on Chinese Provincial Panel Data from 2000 to 2013

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Abstract- This paper took 30 Chinese provinces, autonomous regions and municipalities directly under the central government as sample and used the provincial panel data from 2000 to 2013, constructed a static and dynamic panel data model, analyzed the relationship among human capital, innovation and the quality of economic growth and came to a conclusion that: 1 the first-order lag item of quality of economic growth, the human capital of bachelor degree or above education, innovation, urbanization and industrial structure are positively correlated with the quality of economic growth 2 however, the human capital of post-secondary education and marketization are not effective predictor of quality of economic growth in China. Therefore, to positively promote the quality of economic growth in China, duly attention should be paid to human capital investment, innovation promotion, urbanization advancement as well as adjustment of industrial structure.

Keywords: human capital; innovation capacity; quality of economic growth.

GJMBR - B Classification : JEL Code: O49

HUMANCAPITALINNOVATIONCAPACITYANDQUALITYOFECONOMICGROWTH-BASEDONCHINESEPROVINCIALPANELDATAFROM2000TO2013

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Human Capital, Innovation Capacity and Quality of Economic Growth-Based on Chinese Provincial Panel Data from 2000 to 2013

Chao Ni α, Xiaoyuan Chu σ & Huicun Song ρ

Abstract- This paper took 30 Chinese provinces, autonomous regions and municipalities directly under the central government as sample and used the provincial panel data from 2000 to 2013, constructed a static and dynamic panel data model, analyzed the relationship among human capital, innovation and the quality of economic growth and came to a conclusion that: ① the first-order lag item of quality of economic growth, the human capital of bachelor degree or above education, innovation, urbanization and industrial structure are positively correlated with the quality of economic growth ② however, the human capital of post-secondary education and marketization are not effective predictor of quality of economic growth in China. Therefore, to positively promote the quality of economic growth in China, duly attention should be paid to human capital investment, innovation promotion, urbanization advancement as well as adjustment of industrial structure.

Keywords: human capital; innovation capacity; quality of economic growth.

I. Introduction

Since the 21st century, with the rapid development of its economy, China has become the world's second biggest economy, measured by GDP: from 9921.46 billion RMB in 2000 to 56884.52 billion RMB in 2013, an average annual increase of 13.29%. Such rapid growth miracle has grabbed attention of domestic and international economic circles: why does China's economic growth constantly stay at a high level? What are the driving forces of China's economy growth rate? These questions are academic focus for scholars. Moreover, China showed a strong recovery power during the global financial crisis in 2008, and since then many scholars began to summarize the experiences of China's success, among which China Model, Three Carriages and so on came into being.

Meanwhile, many natural disasters, one after another, have gradually become common phenomenon in Chinese society, such as haze, debris flow and soon. The primary reason is that, for the sake of economic development, the original ecological balance is broken, which causes the wasting of resources and ecological environment deterioration. Meadows et all (1972) [1] discussed the consequences of seeking economic growth. They not only focused upon population-food-crisis but also paid close attention to resource depletion and environmental deterioration caused by exponent increase of the economy. This unsustainable development pattern has aroused the concern of the central government, and it has become a social consensus that we should promote industrial upgrading by transforming mode of development and adjusting industrial structure. How to make sustainable development come true and ensure both economic growth and ecological civilization construction? The answer is that great importance should be attached to the quality concept of economic growth instead of the quantity concept of economic growth. Chao Xiaojing and Ren Baoping (2008)[2] pointed out that economic growth involves both the quality and the quantity of economic growth, the latter being not an aim but a tool for the benefit of humanity and the former being the root of development. In the historical development of theory of economic growth, how to realize economic quantity expansion has always been the central issue and improving the quality of economic growth has always been ignored. Kama Aliyev (1983) [3] maintains that it is insufficient to evaluate economic growth from the perspective of quantity, the cost of economic growth should be taken into consideration, and efficiency of resource usage directly influences the improvement of the quality of economic growth. Therefore, at the present stage, since the quantity of economic growth, such as GDP, national income and so on, should not be our sole focus, our focus should be shifted from quantity to quality, and only in doing so can a resource conservation and environment friendly society be built. This paper, in this context, tries to hold a discussion about the quality of China's economic growth and aims to discover connected factors that influence the quality of China's economy.

With the review of literature, there are mainly ways to define the quality of economic growth: a narrow sense and a broad sense. In a narrow sense, the quality of economic growth is the efficiency of economic growth

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(Karamayev, 1983; Liu Yajian, 2002; Zhao Haiying, Zhao Yingcai & Zhang Chunhong, 2004). Liu Yajian (2002) [4] holds that the economic growth rate can only reflect the changes in total of economic growth, and the quality can be understood as a synonym for efficiency. Efficiency means the amount of surplus products included in per unit economic growth. The less input of funds and materials in unit economic growth rate means the higher quality of economic growth. In a broad sense, the quality of economic growth is opposite to the quantity of economic growth, so the former falls into the normative value judgment and possess rich connotation. (Barro, 2002; Liu Shucheng, 2007).Barro (2005) [5] deems the quality of economic growth as factors, such as society that is closely related to economic growth, politics, religion and so on, which include degree of education, life expectancy, health condition, the degree of development of law and order, income inequality and so on. Liu Shucheng (2007) [6], in a broad sense, defines the quality of economic growth and holds that promoting the quality of economic growth means continuously improving the stability of economic growth, the sustainability of economic growth mode, the harmony of economic growth structure and the concordance of economic growth benefit. This paper, aiming to do researches, tends to define the quality of economic growth in a broad sense.

The consensus has been achieved that the economic transformation is urgently needed and the pursuit of quality of economic growth should be the focus to keep the stable, rapid economic growth in China. The core of the problem lies in finding the factors influencing the quality of economic growth. Many scholars, from perspectives of their own researches, have made valuable conclusions. Barro (2002) [7] studied the determinant factors of the quality of economy growth using transnational data and concluded that there is a close relationship between factors, such as health conditions, productivity, income distribution, political system, criminal behavior, religious belief etc., and the quality of economic growth. Dai Wutang (2003) [8] pointed out that factors, which can influence the quality of economic growth, mainly include labor productivity, economic benefit, employment rate, quality and level of household consumption and reasonable degree of income inequality. From the angle of productivity, Liu Jianya (2002) [9] analyzed factors that influence the quality of economic growth in China and concluded that scientific and technological competitiveness is of vital importance, but the low education investment makes it very difficult to improve the quality of economic growth. Hong Yingfang (2002) [10] theoretically studied the influence of human resource on the quality of economic growth and believed that human resource development can activate people's creativity and vitality and is the basic impetus for the highly efficient and sustainable economic growth; human resource development can maximize all the factors of objects in their effective form, thus greatly improving economic effectiveness; human resource development plays a fundamental role in improving quality of enterprise. Liu Haiying, Zhao Yingcai and Zhang Chunhong (2004) [11] analyzed the influence of Chinese human capital on the quality of economic growth and believed that economic growth dependent on technological progress is of high quality and, at the same time, sustainable. Shi Zili (2013) [12] chose Central Plains economic region as the research sample, took 1991-2010 as the time period, with the establishment of VAR model, conducted an empirical analysis of the mutual effect between the quality of economic growth represented by Central Plains economic region and multilayered innovation ability (including innovation investment intensity, innovation of human capital and the ability of institutional innovation). The research finding shows: in the short run, the ability of institutional innovation can significantly improve the quality of regional economic growth; in the long run, the increase of innovation investment intensity and innovation of human capital can significantly improve the quality of regional economic growth. Chao Xiaojing and Ren Baoping (2008) [13], on the basis of the data from 1979 to 2004 in China, conducted an empirical analysis of the relationship between economic transformation and the quality of economic growth and studied the influence of economic transformation on the quality of economic transformation. They concluded that there is a positive correlation between the marketization rate, industrialization rate, urbanization rate and the quality of economic growth. He Qiang (2014) [14], basing on Lucus' classical economic growth theory framework and random heterogeneous boundary panel data models, using the sample data of 31 provinces from 1997 to 2011 in China, conducted an empirical analysis of the factors that can influence the quality of economic growth in China and concluded that physical capital, labor force and human capital accumulation played an important role during the sample period in the improvement of economic growth in China, and furthermore, the growth elasticity of labor force and human resources is greater.

Given the studies of factors influencing the quality of economic growth made by scholars mentioned above, it can be found that there is still big research gap in this field. First, in current researches when scholars studied quality factors of economic growth there are two key variables: people and scientific innovation; however, at the same time, there are other two variables that are rarely analyzed with quality factors of economic growth, which needs to be strengthened. Second, scholars chose a comparatively longer period to study the quality of economic growth in China; however, specifically speaking, it was not until the 21st century that the attention was paid to the quality of

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economic growth in China. As a result, it is advisable to choose data from the beginning of the 21st century.

To better understand the influencing factors of quality of economic growth, this paper, making use of 30 provinces, autonomous regions and municipalities directly under the central government and provincial panel data from 2000 to 2013 to construct a panel data model which combines the static state and dynamic state, put both human capital and innovation ability into the model, analyzed the relationship between them and the quality of economic growth, and finally proposed some policy suggestions according to the conclusion.

II. Methodology

a) Model for empirical study

To intuitively reflect the relationship between the quality of economic growth and human capital, innovation ability, this paper constructed a basic model:

$$G_{it} = \beta_0 + \beta_1 I_{it} + \beta_2 P_{it} + \beta_3 B_{it} + u_i + \varepsilon_{it} \quad (1)$$

In this equation, istands for region, t for year, G for the quality of economic growth, P and B respectively for human capital with post-secondary education and bachelor degree or above education, I for innovation ability, u_i for unobservable individual fixed effect and ε_{it} for the random error.

Moreover, to discuss factors influencing the quality of economic growth from higher level with references to previous research findings, we think the social context of the current stage in China should be considered in order to study the quality of economic growth in China. China is vigorously promoting the construction of new model urbanization, which influences the economic trends of China. Zhou Minliang (2013) [15] pointed out that only sticking to new model urbanization can contribute to healthy Chinese economic development. Second, China's economic development should be considered. At this stage China's economic growth has two most distinctive features: the adjustment of industrial structure and the deepening marketization. The industrial structure is transforming and tends to be more rational and advanced. Meanwhile, marketization makes production elements flow from the low productivity sectors to the higher productivity sectors, thus improving the social productivity, which is beneficial to improving the quality of economic growth. Therefore, this paper added some control variables to the model: urbanization level (U), marketization (M) and industrial structure (Is). Finally, the equation becomes:

$$G_{it} = \beta_0 + \beta_1 I_{it} + \beta_2 P_{it} + \beta_3 B_{it} + \beta_4 U_{it} + \beta_5 M_{it} + \beta_6 Is_{it} + u_i + \varepsilon_{it} \quad (2)$$

b) Data Sources

We selected six variables in this study: the quality of economic growth, human capital, innovation ability, urbanization, marketization and industrial structure. Here the quality of economic growth is represented by the index of the quality of economic growth and the data come from2014 quality report of China's economic growth; there are comparatively more categories of human capital variables, for example, Ding Donghong (1999) et al., according to forms of human capital productivity, divided human capital into two types: the same quality type human capital and the heterogeneous medium type human capital; Liu Zhiyong et al. (2008) [16] used average span of elementary education, secondary education and higher education to stand for different human capitals. This paper, having compared previous researches and availability of data, at last decided to choose post-secondary education and bachelor degree or above education to stand for different human capitals, and the data come from Statistical Yearbook of each province and China's Population and Employment Statistics Yearbook over the years; innovation ability is manifested in two ways: first, fees invested in innovation activities are used to show innovation ability, such as educational expense, the proportion of scientific and technological investment in local finance; second, innovation putout is used to show innovation ability. We chose the number of patents per research personnel to stand for innovation ability in this paper, and the data come from Statistical Yearbook of each province and China statistical yearbook on science and technology over the years; as for the urbanization variable, this paper used the proportion of urban population in total population, and the data come from Statistical Yearbook of each province and China Compendium of Statistics over the years; this paper referred to Fan Gang (2011) [17] et al. and used marketization index to show the marketization variables, and the data come from China's marketization index: 2013 report of regional marketization processes; The proportion of the third industry output value in GDP is used to measure industry structure variable, and the data come from Statistical Yearbook of each province and China Compendium of Statistics over the years. The information of 6 variables is shown in table 1.

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Table 1 : Definitions of variables and data sources

Variable	Name	Operational Definition/ Proxy Variable	Data Sources	Dimension
Explained variables	Quality of economy growth	Index of the quality of economic growth	2014 quality report of China's economic growth	null
Classical Explanatory variables	Human Capital	Education	Statistical Yearbook of each province; China's Population and Employment Statistics Yearbook	post-secondary education; bachelor degree or above education
	Innovation ability	Patents per research personnel	Statistical Yearbook of each province; China statistical yearbook on science and technology	null
Explanatory variables to be tested	Urbanization	Proportion of urban population in total population	Statistical Yearbook of each province; China Compendium of Statistics	null
	Marketization	Marketization index	China's marketization index: 2013 report of regional marketization processes	null
	Industrial structure	proportion of the third industry output value in GDP		null

III. Result

To better observe the influence of above-mentioned factors on the quality of economic growth, static panel regression analysis was taken. And then we also took a regression analysis with generalized method of moments (GMM) to improve the effectiveness of the parameters.

a) Results of static panel regression analysis

We conducted static panel regression analysis with fixed effect model and the resultis listed in table 2 as below. From table 2, we can see that: in the regression analysis with three predictive variables (human capital, innovation ability), one dimension of human capital (bachelor degree or above education) and innovation ability are positively correlated with the quality of economic growth, but not the other dimension of human capital (post-secondary education). In the regression analysis with six variables, four variables (bachelor degree or above education, innovation ability, urbanization and industrial structure) are positively correlated with the quality of economic growth, while the two variables (human capital of post-secondary education and marketization) are not significantly correlated.

Table 2 : Result of static panel regression analysis

Predictive variable	Model 1	Model 2
Constant term	-0.85	-7.27
Human capital of Post-secondary education	0.14	0.05
Human capital of Bachelor degree or above education	0.23**	0.11**
Innovation ability	0.61***	0.19**
Urbanization		0.14*
Marketization		0.21
Industrial Structure		0.002**
Sample Size	330	330
R^2	0.61	0.68

*Note: the result is from the processed by software Stata16.0. *, **, *** respectively stand for the significant level of 0.0 1, 0.05 and 0.1, the same below*

b) Results of regression analysis withgeneralized method of moments

Economic growth is a dynamic process. The quality of economic growth of the current period will be influenced and succeeded by that of the former period. So, this paper chose the first-order lag item as the control variable and put it into the model to conduct a dynamic study. But it is possible that by doing so would lead to a correlation between the lagged variable and the random disturbance term. Besides, the model may have the cross section dependency, i.e., the endogenous problem. To solve this problem, this paper

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employed generalized method of moments (GMM) to improve the fixed effect model, thus improving the effectiveness and consistency of the result. The result can be seen from table 3.

Table 3 : Result of regression analysis with GMM

Predictive variable	Model 1	Model 2
Constant term	1.01	-1.64
The first-order lag item of the quality of economic growth	0.62***	0.45***
Human capital of Post-secondary education	-0.24	-0.15
Human capital of Bachelor degree or above education	0.22*	0.28**
Innovation ability	0.24*	0.07*
Urbanization		0.05*
Marketization		0.25
Industrial Structure		0.07*
Sample Size	300	300
Sargan	81.67	134.2

From table 3, we found that in the regression analysis with four predictive variables (first-order lag item of the quality of economic growth, human capital and innovation ability), the first-order lag item of the quality of economic growth, human capital and innovation ability are positively correlated with the quality of economic growth, but not the human capital of post-secondary education. In the regression analysis with seven variables, four variables (the first-order lag item of the quality of economic growth, human capital of bachelor degree or above education, innovation ability, urbanization and industrial structure) are positively correlated with the quality of economic growth, but not the human capital of post-secondary education and marketization.

The model is robust because the significance of main variables does not change in the regression results with static fixed effect model and the dynamic GMM.

IV. Discussion

The human capital of bachelor degree or above education is positively correlated with the quality of economic growth both in static and dynamic analysis, but the human capital of post-secondary education is not significant, which means that the human capital of bachelor degree or above education can improve the quality of economic growth in China while post-secondary education barely contributes. Traditional economic theories have agreed that human capital can greatly contribute to economic growth, and the researched done by Lucas and Roemer showed that the high quality economic growth mainly derive from the effective accumulation of human capital stock. Therefore, it is impossible for China to improve the quality of economic growth without investment in human capital. Compared with the quantity of economic growth, the quality of economic growth emphasizes quality, efficiency and sustainable development. Human capital with bachelor degree or above education received more than 16 years' of education on average, so they have improved their skills and knowledge by investing in themselves. The driving effect promotes the skills and knowledge of others around them, which advances the economic development level and really improves the quality of economic growth in China. But the human capital of post-secondary education is not significant in the model because it may not satisfy the requirement of quality. This conclusion of this paper is similar to that of Lou Haiying (2004) and Hong Yingfang (2002).

The variable of innovation ability had in both the static and dynamic analysis a positive correlation, which means that innovation ability is beneficial to the quality of economic growth in China. Innovation means new economic growth point and economic evolution and brings new knowledge and concept, so it is sure that in 21st century the core competence of China's national economic growth lies in innovation ability. Innovation ability not only can help us overcome the shortage of natural resources, material capital, but also it can bring important revolution of production method and increase production capacity several times over, which means the same input can bring more output and eliminate the bad influence of diminishing marginal returns of factors, such as material capital etc., on long-term economic growth. In this way, it can guarantee the sustainable economic growth. The economic growth in China is transforming and in pursuit of the quality of economic growth, so innovation ability is a must. This conclusion is in line with that of Hu Shulin (2002), Zhu Yong, Zhang Zongyi (2005).

The variable of first-order lag item of the quality of economic growth had a positive correlation, which showed this predictive variable can improve the quality of economic growth, confirmed the consistency of economic growth and the quality of economic growth has some accumulation effect. Economic theories hold a basic fact that economic growth is continuous, namely, the former and latter period mutually influence each other and the former period of economic growth can indicate the latter period.

The variable of urbanization had a positive correlation both in static and dynamic analysis, which means that urbanization is beneficial to the quality of economic growth. According to the policy of the new

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urbanization of China, instead of sacrificing agriculture, food, ecology and environment for urbanization as before, urban and rural areas, being a whole, should be combined for a better cooperation by using resources more economically and intensively to make an ecological and livable environment, to achieve harmonious development and to realize common prosperity. This implication agrees with the quality of economic growth, so it is sure that the promotion of new urbanization can greatly improve the quality of economic growth. Zhou Minliang (2013) [18] holds that Chinese government should regard the increase of the quality of urbanization as an important breakthrough in improving the quality of economic growth.

The variable of marketization is not significant in either static or dynamic analysis. Hence, empirically speaking, it is not an effective predictive variable for quality of economic growth. While in theory, the contrary should be predicted. Chao Xiaojing and Ren Baoping (2008)[19] proved that marketization is positively correlated with the quality of economic growth; however, it is not so significant in this paper. The possible reason may be that the advancement of Chinese marketization in the research period of this paper is not dramatic enough to see its influence on the quality of economic growth statistically.

The variable of industrial structure had a positive correlation both in static and dynamic analysis, which means that industrial structure is beneficial to the quality of economic growth. Industrial economics holds that there is a natural relationship between economic growth and industrial structure. Ling Wenchang and Deng Weigen (2004)[20], through calculating the index of industrial transformation and economic growth, conducted an analysis and concluded: production factors will transfer from industries with lower marginal contribution ratio to higher ones, therefore, the industrial transformation can greatly promote the quality of economic growth in China. Liu Haiying (2005)[21] through his analysis concluded that there is a causal relationship between the industrial structure and the quality of economic growth and the former actually greatly promotes the latter in China. Chao Xiaojing and Ren Baoping (2008)[22] used the contribution degree of total factor productivity to quantify the quality of economic growth since the reform of 1978 and they believed that over the 30 years China had improved the quality of economic growth when the quantity of economic growth had been greatly increased.

V. Conclusion

This paper took 30 Chinese provinces, autonomous regions and municipalities directly under the central government as sample and used the provincial panel data from 2000 to 2013, constructed a static and dynamic panel data model, analyzed the relationship among human capital, innovation and the quality of economic growth and came to a conclusion that the four variables (the first-order lag item of quality of economic growth, the human capital of bachelor degree or above education, innovation, urbanization and industrial structure) are positively correlated with the quality of economic growth; however, the two variables (the human capital of post-secondary education and marketization) are not. Therefore, to positively promote the quality of economic growth in China, duly attention should be paid to human capital investment, innovation promotion, urbanization advancementas well as adjustment of industrial structure.

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Global Journal of Management and Business Research: B
Economics and Commerce
Volume 14 Issue 8 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

On the Interest Subjects of Independent Innovation in the Manufacturing Industry in Northeast China

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Abstract- This paper identifies the interest subjects for the innovation system of manufacturing industries in northeast China, including manufacturing enterprises, governments, industry chain users, universities and research institutes, financial institutions, and intermediary organs. Therefore, analyzing the interest subjects promoting independent innovation activities in manufacturing industries in northeast China is an effective means to choose elements of industrial innovation impetus.

Keywords: northeast region; manufacturing industry; independent innovation; interest subjects.

GJMBR - B Classification : JEL Code: L60

ONTHEINTERESTSUBJECTSOFINDEPENDENTINNOVATIONINTHEMANUFACTURINGINDUSTRYINNORTHEASTCHINA

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On the Interest Subjects of Independent Innovation in the Manufacturing Industry in Northeast China

Min Zhang

Abstract- **This paper identifies the interest subjects for the innovation system of manufacturing industries in northeast China, including manufacturing enterprises, governments, industry chain users, universities and research institutes, financial institutions, and intermediary organs. Therefore, analyzing the interest subjects promoting independent innovation activities in manufacturing industries in northeast China is an effective means to choose elements of industrial innovation impetus.**

Keywords: northeast region; manufacturing industry; independent innovation; interest subjects.

I. Introduction

As the cradle of China's industry, northeast China, known as the equipment department of the People's Republic of China, plays a significant role in the development of China's industry. Many large equipment manufacturing enterprises are located here, including Harbin Electric Corporation, Hafei Motor Co., Ltd., Harbin Measuring & Cutting Tool Group Co., Ltd., China First Heavy Industries, Qiqihar Heavy CNC Equipment Co., Ltd., Qiqihar No. 2 Machine Tool Co., Ltd., First Automobile Works Group, Changchun Railway Vehicles Co., Ltd., Shenyang Machine Tool Co., Ltd., Dalian Machine Tools Group, Dalian Shipbuilding Industry Co., Ltd., Northern Heavy Industries Group Co. Ltd., Shenyang Aircraft Industry Co. Ltd., Shenyang Blower Works Group Corporation, Shenyang Tebian Electric Apparatus Stock Co., Ltd., and AVIC Shenyang Liming Aero-Engine Group Co., Ltd. They have provided a large number of technical equipment for different national economic sectors and national defense construction and trained large quantities of talents (Boulding, W. and M. Christen, 2003). However, in spite of these achievements, the manufacturing industry in Northeast China encounters a problem. Specifically, many of its products which are not highly technological cannot meet the market demands due to the long-term shortage of technological investment and independent innovation capability. As a result, some significant technological equipment and basic components need to be imported. The spending on these imported equipment and parts constitutes about 30%-70% of the profits, which makes the development of the manufacturing industry in Northeast China dependent on import. Therefore, insufficient independent innovation and low technological level of products have greatly constrained the long-term development of the manufacturing industry in Northeast China. Besides, it has become the bottleneck of improving core competitiveness and building Northeast China into a world-class manufacturing base.

On the basis of literature review and field investigation, this article finds that the root cause of deficient independent innovation in the manufacturing industry in Northeast China is the lack of impetus for innovation. It is well known that impetus is the premise of all activities. Without it, there can be no independent innovation activities in the manufacturing industry in Northeast China. Thus, this article explores the interest subjects in independent innovation of the manufacturing industry in Northeast China.

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II. Interest Subjects in Independent Innovation of the Manufacturing Industry in Northeast China

Interest subjects in independent innovation of the manufacturing industry in Northeast China refer to social organizations or social roles that participate in, support, and play an important part in independent innovation activities. To be specific, they are independent innovation R&D subjects, investment subjects, activity implementation subjects, and risk subjects. They together form a complicated dynamic structure within which they are interrelated in diversified ways. Such interest subjects include manufacturing enterprises, governments, industry chain users, universities and research institutes, financial institutions, and intermediary organs that are correlated and also the origins of the motivation for independent innovation in the manufacturing industry in Northeast China (ZhangKun, 2003).

a) Manufacturing enterprises

The manufacturing industry in Northeast China comprises a large number of enterprises with the same or similar pattern of production and management. As

Global Journal of Management and Business Research (B) Volume XIV Issue VIII Version I Year 2014

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the most important subjects of independent innovation, they serve to invest in independent innovation, carry out the R&D activities, and commercialize innovative technologies. Any form of industrial independent innovation needs to realize the final value through enterprises. Hence, any enterprise carrying out independent innovation activities can be the interest subject. Speaking of the independent innovation of an enterprise, it does not mean the enterprise needs to fulfill everything through R&D, pilot test to production. Instead, they can utilize external forces and resources through open technology import and various forms of cooperation to bring forth new ideas in products and technology, improve organization and management, and expand the market and profits (Baron, David P, 2001).

The manufacturing industry is the principal part of great industry. It has complicated industrial structure and involves various fields. Compared with agriculture and service industry, it has a much longer industry chain. Therefore, the relation between the upstream and downstream enterprises in the manufacturing industry in Northeast China is quite intricate. On the one hand, these enterprises compete with each other through independent innovation. On the other hand, they accelerate technological upgrading through imitation. In this way, the capacity of independent innovation in the manufacturing industry in Northeast China can be improved comprehensively.

b) Governments

That the government serves as an interest subject of independent innovation in the manufacturing industry in Northeast China is determined by the features of the manufacturing industry and the historical factors in this region. Firstly, the generic technology of the manufacturing industry has the attribute of public goods and great spillover effect. Generally, a single enterprise will not undertake the R&D tasks, and then the government will carry out independent innovation activities directly in this industry as the subject, making itself the direct participant in the independent innovation activities in the manufacturing industry in Northeast China. Secondly, the manufacturing industry in Northeast China started under the influence of the planning system and developed in the transitional period. In this regard, many of its state-owned enterprises are still strongly dependent on the government that guides and safeguards the independent innovation in the manufacturing industry in northeast China. Thus, the government plays an important role in the independent innovation, technology import, and technological transformation of such enterprises. They not only serve as the “visible hands” in the manufacturing industry in Northeast China, but also provide significant guarantee for it directly (Arino, A., de la Torre, J. & Ring. P. S, 2001).

c) Industry chain users

Within the manufacturing industry in Northeast China, there are still the passive ideas of waiting, relying and demanding. Yet, along with the development of the market economy, independent innovation activities are more determined by demands of industry chain users. For instance, there is a symbiosis between the main engine enterprises and parts companies in various fields of the manufacturing industry in Northeast China. On the one hand, the technical requirement of main engines determines the orientation of dependent innovation in parts. On the other hand, the technological development of parts influences and restricts the innovative development of main engines. Therefore, industry chain users are vital interest subjects of the independent innovation in the manufacturing industry in Northeast China. Their demands are the fundamental starting point and driving force of independent innovation activities.

d) Universities and research institutes

Universities play a fundamental role in independent innovation activities in the manufacturing industry in Northeast China. They undertake the tasks of R&D, spreading knowledge, and training innovative talents for the manufacturing industry continuously. There are numerous famous universities in Northeast China, including Jilin University, Harbin Institute of Technology, Dalian University of Technology, Northeastern University, Dongbei University of Finance and Economics, Harbin Engineering University, and Northeast Normal University. These universities not only cooperate with enterprises for scientific research, but also cultivate scientific and technological talents for the manufacturing industry in Northeast China. Take the auto industry as an example. Three universities and colleges in Northeast China now offer automobile specialty, i.e. Jilin University, Changchun Automobile Industry Institute, and Harbin Institute of Technology. They serve as important educational bases of auto talents in China, training tens of thousands of technical personnel annually, which have greatly promoted the independent innovation activities in the manufacturing industry in Northeast China.

Research institutes promote independent innovation by providing knowledge and technology supports through developing new products and technologies. The focus of their work is to explore the most important research subjects and remove key technological barriers with technical expertise. For instance, Changchun Equipment & Technology Research Institute is the sole technological equipment research organization that can proficiently apply the SHAPE module into the tooling of body in white including the generation, extension, and suture of complex surfaces. Besides, many new technologies it develops each year are applied in First Automobile Works Group. In addition, the MI Ninth Design &

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Research Institute Co., Ltd. has developed the techniques of three-dimension design, three-dimension pipeline collision inspection, and three-dimension production line and logistics simulation, which have been widely used in various projects. It has provided technological support for automobile manufacturing enterprises and promoted the independent innovation of the automobile manufacturing industry.

e) Financial institutions

Experience around the world has shown that favorable capital market and financial environment serve as the basis and guarantee to realize the vigorous development of science and technology, and greatly improve the industrial scientific and technological innovation capability. Financial institutions, one of the sources of funding for the manufacturing industry, play an important role in the independent innovation of the manufacturing industry in Northeast China. Moreover, it strongly supports to improve the commercialization, industrialization, and internalization of high-tech products in the manufacturing industry in Northeast China (ZhaoJingjie, Pangbo, 2006).

For example, China Development Bank has been putting more efforts in industrial innovation since 2005. It strongly supports the development of high-tech enterprises and independent innovation projects through strengthening credit construction. The manufacturing industries it supports with great efforts are equipment manufacturing industry, shipbuilding industry, and automobile industry. With its support, leading enterprises like Shenyang Machine Tool Co., Ltd., Shenyang Blower Works Group Co., Ltd., and Northern Heavy Industries Group Co. Ltd. with strong independent innovation capabilities have achieved rapid development, playing a leading role in promoting independent innovation activities in the manufacturing industry in Northeast China. Currently, its high-tech venture capital loan has been a significant loan product to support the independent innovation and scientific and technological development of the manufacturing industry in Northeast China. Besides, the successful innovation of the manufacturing industry has brought abundant revenues to China Development Bank.

f) Intermediary organs

Intermediary organs are professional organizations providing communication, coordination, and consultation services for manufacturing enterprises in Northeast China and other related organizations to enhance the industrial innovation capability and competitiveness of the manufacturing industry, but they do not take part in the production and business activities directly. However, when the industrial innovation and development reach a certain scale, intermediary organs like industry's associations, training organizations, productivity promotion centers, innovation centers, information service centers, scientific and technological centers, and network centers are bound to come into being. Forming a supporting system for the normal operation of the industry, they are lubricants for the smooth functioning of the market economy. Their principal function is to provide intermediary services to lower transaction costs, particularly information costs, which is conducive to the flow of knowledge within the industry. Therefore, they play the bridging and supporting roles in the manufacturing industry.

Up to the end of 2009, 217 productivity promotion centers have been established in Northeast China, constituting 12.12% of the total in China. Among them, 31 are demonstration centers. The services they provide can be classified into six types, namely consultation service, information service, technological service, training service, talents and technological intermediary services, and technology-based training enterprises. As the transmitters of information, the intermediary organs, including productivity promotion centers, can provide information related to independent innovation and accelerate the flow of information, and besides, they can also provide prediction and evaluation services for manufacturing enterprises to carry out independent innovation activities. Thus, they are important interest subjects of the independent innovation activities in the manufacturing industry in Northeast China.

This article makes an analysis of the interest subjects of independent innovation activities in the manufacturing industry in Northeast China to identify the driving factors in the independent innovation motivation system of the manufacturing industry in Northeast China. There are eight driving factors, including influence of entrepreneur's innovation capabilities, promotion of industry chain demands, impetus of the added-value of industrial technology, support of policies for industrial independent innovation, advocacy of industrial independent innovation talents, drive of industrial independent innovation technologies, guarantee of industrial independent innovation fund, and adhesion of industrial independent innovation information. How to make such factors play a driving role in independent innovation and better promote the independent innovation activities in the manufacturing industry in northeast China will become a topic for further research.

III. Conclusion

This paper identifies the interest subjects for the innovation system of manufacturing industries in northeast China, including manufacturing enterprises, governments, industry chain users, universities and research institutes, financial institutions, and intermediary organs. How to utilize the role of these subjects in promoting innovation activities in northeast manufacturing industries to promote the development of

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innovation activities in these industries will be a new research topic.

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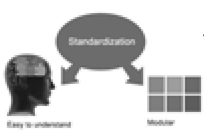

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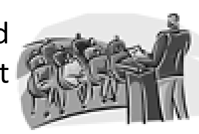

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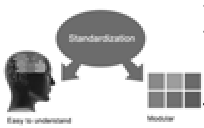

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A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search:

- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

Acknowledgements: Please make these as concise as possible.

References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

Tables, Figures and Figure Legends

Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.

Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.

Preparation of Electronic Figures for Publication

Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

Color Charges: It is the rule of the Global Journals Inc. (US) for authors to pay the full cost for the reproduction of their color artwork. Hence, please note that, if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a color work agreement form before your paper can be published.

Figure Legends: Self-explanatory legends of all figures should be incorporated separately under the heading 'Legends to Figures'. In the full-text online edition of the journal, figure legends may possibly be truncated in abbreviated links to the full screen version. Therefore, the first 100 characters of any legend should notify the reader, about the key aspects of the figure.

6. AFTER ACCEPTANCE

Upon approval of a paper for publication, the manuscript will be forwarded to the dean, who is responsible for the publication of the Global Journals Inc. (US).

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(Free of charge) from the following website:

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Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

8. Use the Internet for help: An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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- The **major constraint** is that you must independently make all content, tables, graphs, and facts that are offered in the paper. You must write each part of the paper wholly on your own. The Peer-reviewers need to identify your own perceptive of the concepts in your own terms. NEVER extract straight from any foundation, and never rephrase someone else's analysis.

- Do not give permission to anyone else to "PROOFREAD" your manuscript.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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ISSN 9755853

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