

Growth Path Followed by France: A New Growth Theory

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Abstract:

The Neoclassical Growth Model, although powerful, pays too much attention on tangible forms of assets that a nation can capitalize on to increase its GDP/income. This paper attempts to propose an alternative to the Neoclassical approach by building on their theoretical model and introducing certain intangible assets like education, transparency and democracy. By charting out the idiosyncratic path followed by France, this paper seeks to study what all other factors developing nations can capitalize on to imitate such high growth.

Keywords — Growth Model, France, Education, GDP, Intangible Capital, Employment

I. INTRODUCTION

France is the world’s 6th largest economy as of 2018 in nominal terms. It has a mixed economy combining extensive private enterprise with substantial state enterprise and government intervention. The government retains considerable influence over key segments of infrastructure sectors, with majority ownership of railway, electricity, aircraft, nuclear power and telecommunications. Financial services, banking and the insurance sector are an important part of the economy.

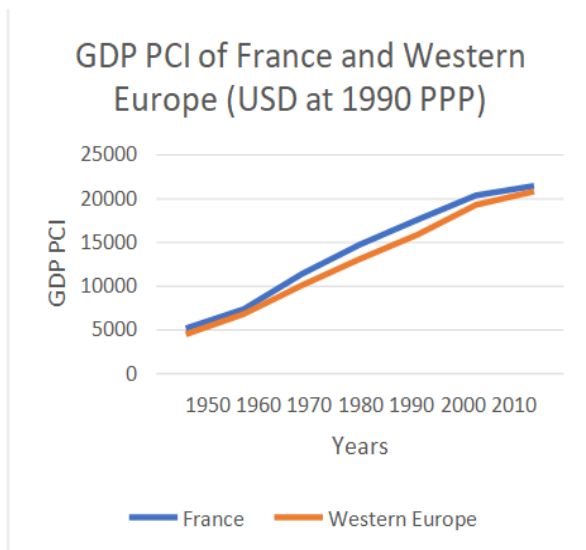
rates of growth with mild fluctuations and moderate rates of inflation along with faster rate of output growth. The favorable growth in per capita income in Western Europe can be attributed to a strong growth in fixed investment in machinery and equipment and a massive technology transfer from United States.

II. WESTERN EUROPE & FRANCE

A. *The Golden Age*: The period between 1950-1973 is regarded as exceptional in the modern European economic history as during this period the region witnessed unprecedented high

B. *The post 1973 period*: The growth of output slowed after 1973 in Western Europe in the wake of the first oil crisis and subsequent recession of 1974-75. The growth of France however thereafter remained stable. Capital formation and investment during the second half of the 20th century increased due to technological and communications revolution. The restructuring also included the disappearance of the agricultural population

and transfer population to more productive sectors. The “industrialization” of agriculture which was a major force of growth and output shot up.

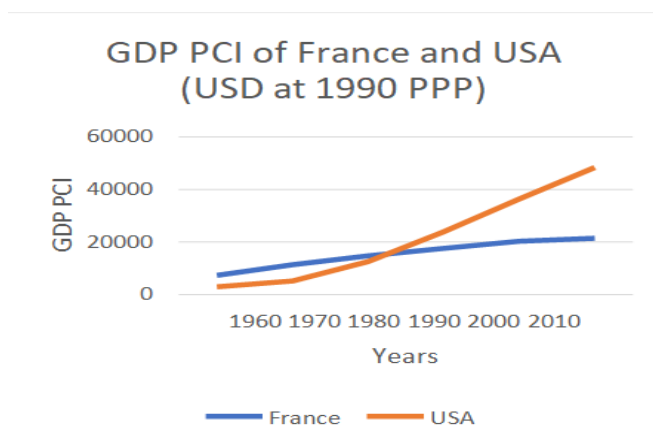


III. FRANCE & USA

A. **USA:** USA’s GDP was hit by recession in 1980 which reduced the growth rates and therefore PCI saw a slow rise, until tax hike and defence spending reduction pulled it back up. Since then US per capita income has been at a favourable rate despite negative impacts of the Black Monday in 1987. In 2008-09, during the GFC, dropped to an all-time low, with the rate introduction of acts like the Dodd-Frank Act by the state helped reviving the growth rate in 2010. The rates have always been in the range of 1.5%-3% which has led to a steady growth

in per capita income.

B. **FRANCE:** Gross savings in advanced European countries reached 12-14% of GDP during the mid-twentieth century. Savings jumped and reached a record level of roughly 25% of GDP between 1950 and 1973 and never declined below 20% till the end of the century. This led to an increase in gross fixed domestic investment. The gross stock of fixed non-residential capital in Germany and France increased more than sevenfold after 1950. In 1950 the capital stock of France amounted to only 40% of that of United States but the same level surpassed the U.S. level by about 8% and the stock of European machinery and equipment increased by 13 times by 1991. Consumerism contributed to an expansion of the output and increase in per capita GDP in France. One such phenomenon was the housing boom. Mechanization of households became a driving force of consumption and economic growth. These factors led to a steady increase in PCI of France over the years.



IV. THE NEW GROWTH THEORY

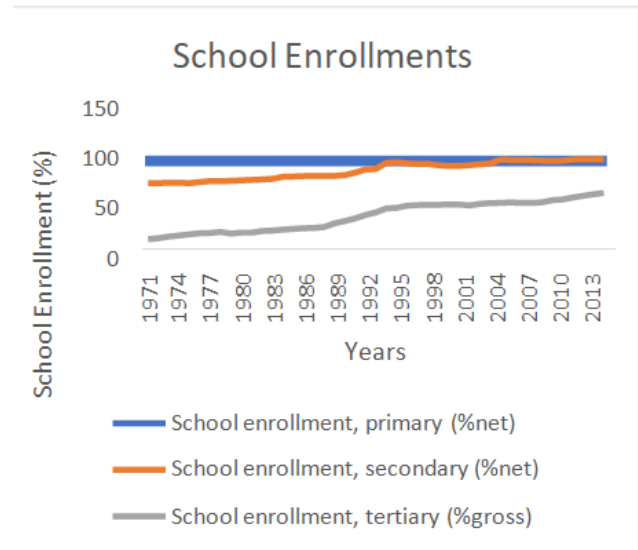
It considers the ‘deliberate’ or ‘Intentional’ increase in productivity, in regards to a country it refers to government policy aimed at increasing productivity and causing long run economic growth. The theory can be used to explain the growth path of France through various variables.

A. *Developing Human Capital* ($\uparrow H$): policies aimed at increasing the education level in the economy, therefore having greater amount of well-educated labor force (H) would lead to growth.

$$(t) = E(t) \gamma K(t)^\alpha [uH]^{1-\alpha} \dots (1)$$

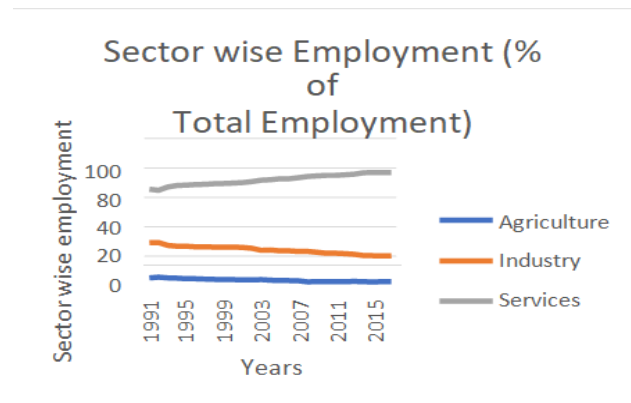
Education: Based on the principles of the 1789 revolution, the French education system is highly organized and centralized. It is divided into the three stages- *Enseignement primaire* (Primary Education), *Enseignement secondaire* (Secondary Education) and *Enseignement supérieur* (Higher/Tertiary Education)

The Primary and Secondary stage school enrollments have been high over the years with a slow and stable rise. The Tertiary stage however has shown a great rise from 18% to 65%.



The French constitution makes it a duty of the state to provide free, compulsory, secular education at all levels. The state finances public education and appoints inspectors to control the structural and teaching quality etc.

During the 1980s, priority education zones and vocational training provided greater support to schools and educational activities. The 1989 Framework Law increased the democratic response to education, reduced children’s workload and contributed to the notable increase in trend since 1989. A sign of the overall increased standards of the literacy can be seen from the coinciding primary and secondary enrollment rates from 2004. A new Framework Law passed in 2005 stated that education is a national priority, and the system should guarantee equal level and opportunity of



knowledge and skills to all. In 2013, minimum level education for the teachers was raised.

These developments increase the efficiency and productivity of human resource. Higher enrollment in tertiary education, results in more 'worth' of people (increasing human capital), translating into a higher employment in this sector. In France, large service sector industries like Tourism, Energy etc. exist and are continuously growing. Therefore, $\uparrow H$ in (1)

B. INCREASING THE LEVEL OF TECHNICAL KNOWLEDGE ($\uparrow E$ I.E. PRODUCTIVITY): BY

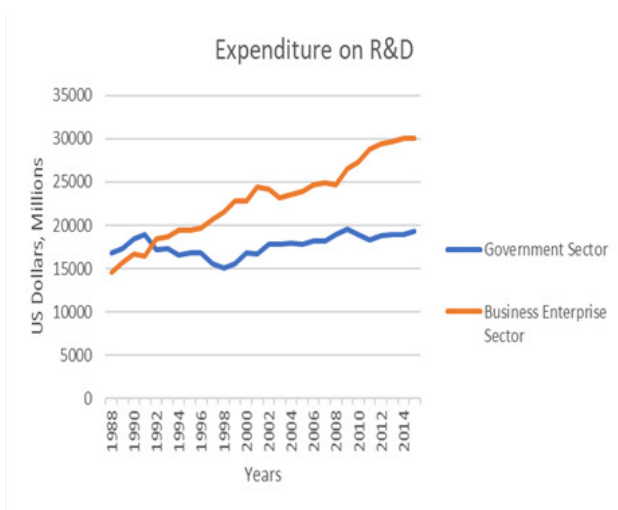
Investing more in R&D, i.e. $\frac{(t+1) - E(t)}{E(t)}$

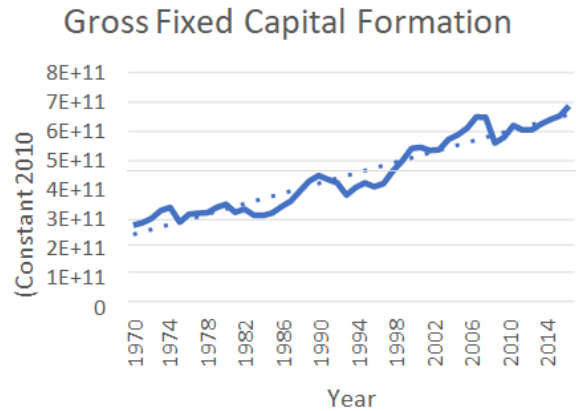
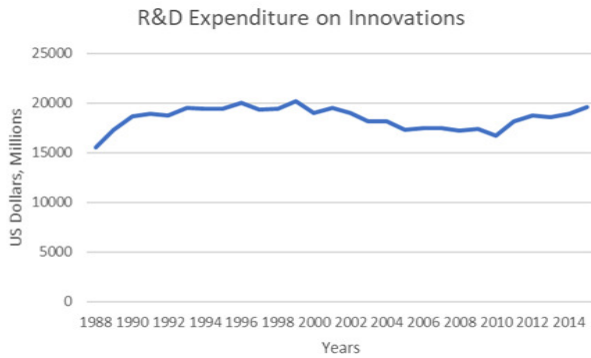
$a(1-u)H$, or $F(R\&D \text{ expenditure})$. Policies ensuring a greater amount of R&D will ensure economic growth in long run.

Innovation: France is considered an innovation powerhouse and is a haven for innovators and businesses.

Innovation is recognized to one of the driving forces in France by business decision makers. It has a large number of business incubators and accelerators providing opportunities, advice and guidance to the companies. The Act of 10th August 2007 on the Liberties and Responsibilities of Universities allows cooperative partnerships with companies, commercial subsidiaries allowing incubation and tapping of universities into private funding for collaborative projects. The French tax system actively encourages R&D through research tax credit. Since 2008, it has become the main public financing source for innovation spending and also incentivizes public-private research.

The graph below shows that the R&D Expenditure of France on Innovation has remained high over the years. It is ranked second in Europe and fourth in the world for the number of patents filed, with 7,664 international patents in 2011. France stands 3rd in the world among the 100 most innovative organizations.





Therefore, $\uparrow E(t)$ in (1).

C. **INCREASING AVERAGE CAPITAL ($\uparrow K^*$):**

$$y(t) = ak^*(t)^{\beta}k(t)^{\alpha}[P(t)]^{1-\alpha} \dots(2)$$

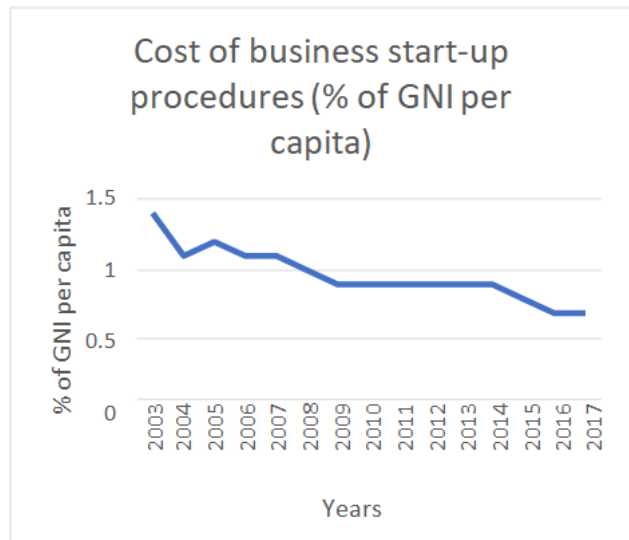
{Where $K^* = K_t + K_i$ }

1) **Tangible Capital (K_t):** Policies ensuring greater amount of $K^*(\uparrow K_t)$, such as better infrastructure, greater amount of investment by all the firms would lead to economic growth.

$$K_t = F(\text{infrastructure}, GFCF)$$

Gross Fixed Capital Formation is the aggregate investment in the economy which has an upward increasing trend. Post war push for France (heavy investment by the government) has proved to be of immense importance. GFCF then on has had a cyclical trend. Patents, copyrights, trademarks, government effectiveness, etc, have played a role in a high GFCF.

Cost of starting up a business is a proxy to infrastructure that shows that the better is the infrastructure; lower is the cost of starting up a business. Because of an increasing GFCF, existing incubators and infrastructure, the cost of starting up a business is less. Therefore, $\uparrow K^*$.



howitzer cannons into the system, molded the way we perceive modern warfare today. The French Civil Code which was formulated by Napoleon in 1804 is applicable even today in French Republic and have influenced laws around the world. Although the code has been changed to fit modern standards, it still has the basic foundations of the revolution. For e.g.: the core provisions of the French civil code concerning contract and torts have remained essentially unchanged over the years. The principles of democracy, liberty, merit, equality and sovereignty have been an enduring aspect of

the French Revolution and the very ideas of rights, citizenship, secular society, free speech and rule of law were shaped by French revolution.

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