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States Can Create Exceptions to the Dominant Mode of their Political Economies

Improving the Varieties of Capitalism Theory. Case US Boeing and EU Airbus

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Abstract

The *Varieties of Capitalism* theory is the exemplary citation for all studies of capitalist diversity. The theory arranges nation-states to one of two capitalism typologies. A nation-state is either a *Liberal Market Economy* or a *Coordinated Market Economy.* In this master thesis this dualist nature of the *Varieties of Capitalism* theory is questioned. Empirical evidence of US Boeing and EU Airbus is presented that shows that nation-states have characteristics of both typologies at the same time. States create exceptions to the dominant mode of their political economies with the help of targeted policies and laws. These policies and laws have a neo-mercantilist nature. The exceptions are created in defense related sectors. These explanatory shortcomings of the *Varieties of Capitalism* theory are improved with the help of two new hypotheses: the analytical unit and the *complementarities* premises of the theory are improved and a hypothesis is added that explains the neo-mercantilist policies.

Preface

Politics and economics have always been highly interesting topics for me. Lately I am interested in the EU and the US state influence on firms. What are the differences between the two economic powers and what effect have these differences on firm strategies? These questions directed my attention to the comparative capitalism literature, especially to the *Varieties of Capitalism* theory. This literature provides many answers to these sorts of questions. However, after studying this literature I experienced that not all of my questions were answered. I found out that the theories have explanatory shortcomings with respect to certain economic sectors of the EU and the US. These shortcomings created my ambition to study the *Varieties of Capitalism* theory thoroughly and eventually improve it.

Working on my master thesis was at moments really abstract and difficult to manage. Without the help of my supervisors this would not have been possible for me. I would like to express my gratitude towards Ph. D. Shawn Donnelly, my first supervisor from the *Universiteit Twente*, for the helpful conversations we had on explaining firm and state behavior using comparative capitalism theories. These conversations helped me understanding these theories and helped me structuring my research and my thesis. Furthermore, I would like to thank Professor Ph. D. Doris Fuchs, my second supervisor from the *Westfälische Wilhelms-Universität Münster*, for her helpful recommendations and comments with respect to the object of inquiry and the used literature.

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1 Introduction

The idea of different national varieties of capitalism has gained considerable attention in the last two decades. In the 1980s important differences were identified between the excellent economic performance of Germany and Japan and the industrial decline of the United Kingdom (UK) and the United States (US). Many scholars attributed these differences to the distinct institutional arrangements of the German and Japanese economies. Opposed to neo-classical economics, the literature on institutional economics was coming to understand that successful political economies came in more than one variety (Jackson and Deeg 2004). The collection of studies edited by Hall and Soskice (2001) under the name *Varieties of Capitalism* represents the most ambitious and significant contribution to this body of literature. According to Crouch (2005) their book has become the exemplary citation for all studies of capitalist diversity.

Hall and Soskice (2001) state that the *Varieties of Capitalism* approach is able to explain the kind of institutional arrangements and practices that occur in different nation-states. Furthermore, the approach sheds light on questions like: What determines the difference between nation-states?, What will states and companies do in the face of economic change and, what defines their capacities to meet such challenges?

To answer the questions above the *Varieties of Capitalism* theory identifies five institutions that determine the functioning and the nature of nation-states, namely: *industrial relations, vocational training and education, corporate governance, inter firm relations and employees* (Hall and Soskice 2001, 6–7). They formulate these institutions in dichotomous terms (liberal institutions and coordinated institutions) with the help of empirical evidence from the US and Germany. In addition, they state that these institutions are *complementary* to each other (Hall and Soskice 2001, 17–21). This means that when one of these institutions has a liberal nature the other institutions will also have a liberal nature. Consequently, Hall and Soskice (2001, 8-9) formulate two ideal-type political economies, the *Liberal Market Economy* (LME) and the *Coordinated Market Economy* (CME). Nation-states can be arranged to one of these two ideal-types. However, because of the *complementarities* premise a nation-state can not have characteristics of both typologies at the same time.

In LMEs such as the US, the UK, or Canada, the market plays the dominant role and the state remains an arm's-length enforcer of contracts. LME states do not actively cooperate with firms. LMEs share the characteristics of short-term orientated firm finance, deregulated labor-markets, general education, and strong inter-company competition. CMEs such as Germany, Sweden, or Switzerland, are to a larger extent organized by non-market mechanisms. CMEs are characterized by long-term industrial finance, cooperative industrial relations, high levels of vocational training, and cooperation in technology and standard setting across companies (Hall and Soskice 2001, 21-33).

Building on the assumptions above Hall and Soskice (2001, 36-44) formulate a concept of institutionally determined *comparative advantage*. According to them nation-states will specialize in the production of certain kind of products and services due to the institutional arrangement of their political economy. Hall and Soskice (2001, 38-39) argue that LMEs give rise to *radical* innovation and CMEs give rise to *incremental* innovation. They associate *radical* innovation with the new-technology sectors of the economy such as telecommunication, computers, internet and the service sector; and *incremental* innovation with the old sectors of the economy, such as the steel, chemistry, defense and transportation sectors (Hall and Soskice 2001, 42-43).

In sum, the *Varieties of Capitalism* theory is a dualist approach. The theory makes a distinction between liberal and coordinated market economies and arranges nation-states to one of these two typologies. However, is it really possible to explain the functioning of nation-states in dichotomous terms, either CME or LME, and consequently in terms of *radica*l innovation or *incremental* innovation; or do nation-states have characteristics of LMEs and CMEs at the same time?

Several firms situated in the US (the ideal-type LME) are successful in the production and development of innovative airplanes and defense products (for example Boeing and Lockheed-Martin). A fundamental characteristic of the US political economy in this respect, that is central to much of its innovative capacity, is the close relationship between the US government departments and this scientifically orientated defense sector. Boeing, for example, is known for its strong relationship with US government departments. The European Union (EU) even filed a complaint against the US in which they accuse the US of giving World Trade Organization (WTO) inconsistent subsidies to Boeing, totaling 23.2 billion US

dollars (European Communities 2007). Crouch (2005) states that the operation of such a scientific orientated defense sector has nothing to do with the principles of either neo-classical economics or neo-liberal politics that can be associated with the LME typology of the *Varieties of Capitalism* theory. In addition, Campbell and Pederson (2001) have already argued that at the practical level neo-liberalism has not been the monolith that both its advocates and opponents set it up to be. Within neo-liberal nation-states a wide diversity of practices that are sometimes not coherent with each other can be identified. Furthermore, the defense related sector in CME countries is also strongly influenced by states. The German state (a typical CME), for example, is a large shareholder of Airbus Germany. In this case the US filled a complaint against the EU and its member states in which the US accused the EU of giving WTO inconsistent subsidies to Airbus (The United States of America 2007). The fact that states actively participate and support and protect companies, as can be seen in these examples, has implications for the innovative capacities of these companies.

The US defense related sector is strongly supported and protected by the US state. This support and protection has implications for the characteristics of this sector of the US economy in terms of the *Varieties of Capitalism* theory. According to the theory, companies situated in LMEs, such as the US, should not be able to produce *incremental* innovation because these companies are not able to secure finance for long-term projects (Hall and Soskice 2001, 27-29). However, because of state support through patient capital and purchasing arrangements (contracts, subsidies, tax incentives and R&D cooperation), companies situated in the defense related sector of the US economy are able to secure finance for long-term projects and are able to produce *incremental* innovation. According to Hall and Soskice (2001, 21-33) LME states do not cooperate with companies to produce *incremental* innovation, CME states do this. It seems that the US defense related sector has characteristics of a CME when it comes to its innovative capacities. This also signifies that the US political economy has features of a LME and a CME at the same time.

Because of the *complementarities* premise of the *Varieties of Capitalism* theory the US can only have characteristics of a LME. Therefore, the theory fails to explain the *incremental* innovation that the US defense related sector produces. Crouch (2005) has already pointed to this shortcoming of the *Varieties of Capitalism* theory and states that although a dualist approach is parsimonious, a dualist approach fails to explain a lot of nuances that occur within a nation-states economy. Therefore he suggests that nation-states should be studied, not to

determine to which type, LME or CME, they should each be allocated, but to determine which of these forms can be found within them and roughly in what proportions. If the US could be a LME and a CME at the same time, the *incremental* innovation that the US defense related sector produces could be explained.

However, this has large implications for the *Varieties of Capitalism* theory. Hall and Soskice argue that the five institutions, which they formulate on nation-state level, are *complementary* to each other. Because of this premise a nation-state can only be a LME or a CME and not both at the same time. Nonetheless, if the analytical unit of the *Varieties of Capitalism* theory, the 'nation-state', would be replaced with 'sectors of a nation-state' the theory would be able to explain that LME and CME characteristics can be present within one nation-state depending on the sector of the economy. This also implies that LME and CME institutions influence different sectors of the economy, and that only the institutions that influence specific sectors are *complementary* to each other. Nevertheless, if the analytical focus shifts from the nation-states economy as a whole to sectors of a nation-states economy the question remains: what determines the difference between sectors of a nation-states economy?

The case US Boeing shows that the US state enables the *incremental* innovation of that company. Crouch (2005) also argues that it is the US state that influences the functioning of the US defense sector significantly and therefore alters the functioning of it. In general, states define the laws and policies on which the functioning of the institutions of political economies is centered and states have the power to define different laws and policies for different sectors of the economy. In the case of democratic countries the formulation of these laws and policies is based on political support. It is the state that determines the difference between the functioning of sectors of the political economy.

I argue in this master thesis that states can create exceptions to the dominant mode of their political economies with targeted policies and laws. Consequently, the dualist approach of Hall and Soskice, who argue that a nation-state is either a LME or a CME due to the *complementary* institutions, is challenged. Furthermore an improved *Varieties of Capitalism* theory is presented in which the analytical focus is shifted from the nation-state to sectors of a nation-states economy and in which the state is brought back into the analytical model as has already been stated by Radice (2001). It is not my objective to replace the *Varieties of Capitalism* theory by

presenting a new theory. I am presenting new hypotheses that improve the existing *Varieties of Capitalism* theory.

In the next paragraphs of this chapter the following is presented:

- In paragraph 1.1 a hypothesis and a comparative case study are described with the help of which I will show that states are able to create exceptions to the dominant mode of their political economies.
- In paragraph 1.2 hypotheses are presented that improve the explanatory power of the *Varieties of Capitalism* theory.
- In paragraph 1.3 the motivation for this master thesis is explained.
- Finally, in paragraph 1.4 an outlook with respect to the chapters of this master thesis is presented.

1.1 States can Create Exceptions

In this paragraph a hypothesis and a comparative case study are presented with the help of which I will show that states are able to create exceptions to the dominant mode of their political economies.

If it is shown that states are able to create exceptions to the dominant mode of their political economies (LME within CME and CME within LME) the *Varieties of Capitalism* theory is falsified; since, the *Varieties of Capitalism* theory does not allow that both typologies can be present within one nation-state (see the Introduction). To show that states are able do this, the hypothesis below is verified in this master thesis, with respect to the comparative case study US Boeing and EU Airbus:

Hypothesis 1: States can create exceptions to the functioning of the dominant mode of their political economies with the help of targeted policies and laws.

In chapters 4 empirical evidence is presented that illustrates that Boeing does produce *incremental* innovation within the US LME with the help of the US state. This implies that the US has characteristics of a CME when it comes to Boeing's innovation. Therefore, it can not be stated that the US is solely a LME and it can not be stated that the institutions of the

entire US economy are *complementary* to each other, since this would imply the same. Furthermore, it is shown that Airbus does deviate from the CME paradigm in the EU. However, the EU CMEs do not create a LME within their political economies when it comes to Airbus. Nevertheless, the falsification of the *Varieties of Capitalism* theory in the case US Boeing points towards explanatory shortcomings of the theory. In the next section two new hypotheses are presented that improve these explanatory shortcomings.

1.2 Improving the *Varieties of Capitalism* Theory

In this paragraph an improvement of the *Varieties of Capitalism* theory is presented. First a hypothesis is presented that enables the theory to explain that a nation-state can be a LME and a CME at the same time. Second, a hypothesis is presented that explains what indicator determines which sector of a nation-states economy has LME characteristics and what sector has CME characteristics.

It is already explained that because of the analytical unit and the *complementarities* premises of the *Varieties of Capitalism* theory the theory is not able to explain that a nation-state can be a LME and a CME at the same time. Below a new hypothesis is presented that changes the *complementarities* premise and shifts the analytical focus of the *Varieties of Capitalism* theory from the nation-state to sectors of a nation-states economy:

Hypothesis 2: Institutions that determine the functioning of a sector of a political economy are *complementary* to each other.

Nevertheless, if the US is a LME and a CME at the same time the question remains: what indicator determines what sector of a nation-states economy has a LME nature and what sector has a CME nature?

The functioning of the institutions of a nation-state is influenced by the laws and policies that govern the nation-state. Within democratic countries these laws and policies are dependent upon political support. In the case of US Boeing and EU Airbus it is the laws and policies of the US and EU states (contracts, tax incentives, subsidies) that enable the companies to produce *incremental* innovation (Crouch 2005). However, why do the US and the EU states have different policies and laws for Boeing and Airbus?

According to realist assumptions states are rational actors that have a national interest. The dominant national interest of each state is its national security and survival and in pursuit of this, states strive to amass resources and defense technology. In realist terms, relations between states are determined by their comparative level of power derived primarily from their military and economic capabilities. In addition, realists believe that states are aggressive (offensive realism) and obsessed with security (defensive realism); and that territorial expansion is only constrained by opposing powers. This aggressive build-up leads to a security dilemma where increasing one's own security can bring along greater instability as the opponents build up their own arms. Security is a zero-sum game where only relative gains can be made by states (Morgenthau and Thompson 1985, 4).

Furthermore, neo-mercantilists assume that states have a clear conception of a national interest (just like realists). In addition, the theory is based on the assumption that states try to control capital movements and discourage domestic consumption as a means of increasing foreign reserves and promoting capital development. This involves protectionism on a large number of levels: protection of domestic producers, discouraging of consumer imports, structural blockades to prevent entry of foreign companies into the national markets, manipulation of the currency value against foreign currencies and limitations on foreign ownership of national companies and the support of national companies. While states engage in these activities to one degree or another, neo-mercantilism makes them the focus of policy. In sum: neo-mercantilism predicts that states have a national interest just like realism and assumes that states protect and support their domestic producers (O'Brien and Clesse 2002).

Using neo-mercantilist assumptions I argue in this master thesis that a state has an interest in the defense related sector of its economy and therefore supports and protects this sector. Because of this support and protection the defense related sector is able to produce *incremental* innovation and consequently has CME characteristics. This leads to the hypothesis below:

Hypothesis 3: If a sector of an economy is of significant importance for the national security, a state supports and protects this sector of its economy.

The two hypotheses above are tested on the comparative case study US Boeing and EU Airbus. With the help of these two hypotheses the *Varieties of Capitalism* theory is able to explain why the US state supports Boeing's long-term investments and therefore its *incremental* innovation and explains why the German state had large shares in Airbus Germany. This improved *Varieties of Capitalism* theory shows that within nation-states different varieties of capitalism are present, depending on the sector of the economy; and that it is the state that actively determines the nature of these sectors of the economy with the help of targeted policies and laws.

1.3 Motivation

In this paragraph the motivation for this master thesis is described. I will explain what empirical and theoretical benefits result from this master thesis.

First, by demonstrating that the *Varieties of Capitalism* theory is not able to explain the *incremental* innovation that US Boeing produces, an important shortcoming of the theory is illustrated that has already been identified by Crouch (2005). In addition, in the case of EU Airbus it is shown that Airbus has a special position within the EU CMEs. This special position is not explained by the *Varieties of Capitalism* theory and also points towards a shortcoming of its explanatory power.

Second, by presenting new hypotheses that remove the explanatory shortcomings of the *Varieties of Capitalism* theory an advancement of the comparative capitalism literature is made. With the help of these new hypotheses the theory is able to explain why Boeing produces *incremental* innovation and why Airbus has a special position within the EU CMEs. Furthermore, the most important criticisms presented in paragraph 2.3 on the *Varieties of Capitalism* theory are tackled with the help of these new hypotheses.

Third, with the help of the comparative case study the relationships between the US and Boeing and the EU and Airbus are explained and compared. It is shown with the help of what kind of laws and policies the US and the EU states create exceptions to the dominant mode of their political economies. Furthermore, it is shown what the influence of these policies and laws is on the production of Boeing and Airbus.

1.4 Outlook

In this paragraph an outlook is presented. This master thesis consists of the following four chapters:

- In chapter 2 the literature study is presented. First it is explained what the advantages are of the *Varieties of Capitalism* theory in comparison to other comparative capitalism theories. Second, the main premises of the theory are explained. Third, the criticism on the *Varieties of Capitalism* is described, drawing on topical comparative capitalism literature. Finally, it is illustrated that the improvement hypotheses tackle the criticism and improve the explanatory power of the *Varieties of Capitalism* theory.

- In chapter 3 the methodology of this master thesis is explained. First, the research method is presented: a comparative case study. Second, the cases US Boeing and EU airbus are described. Third, the operationalization of the hypotheses is illustrated and the required data and the data collection method are elaborated. Finally, the data quality is described by drawing on the reliability and the validity of the data and the generalization of the findings of this master thesis.

- In chapter 4 the comparative case study is presented. First, empirical evidence for the case US Boeing is illustrated. Second, this evidence is analyzed. Third, empirical evidence for the case EU Airbus is demonstrated. Fourth, this evidence is analyzed.

- Finally, in chapter 5 the conclusions of this master thesis are presented. First, I will show that states are able to create exceptions to the dominant mode of their political economies. Second, I will discuss the shortcomings and the improvements of the *Varieties of Capitalism* theory. Finally, the criticism on the *Varieties of Capitalism* theory is discussed after the improvements have been made.

2 Literature Study

In this chapter the *Varieties of Capitalism* theory is analyzed and the theoretical framework for this master thesis is constructed. With the help of this chapter I will show why I choose to analyze and improve the *Varieties of Capitalism* theory; clearly define the core concepts of the theory; explain the shortcomings of the theory and elaborate on the improvement of these shortcomings.

- In paragraph 2.1 the advantages of the *Varieties of Capitalism* theory in comparison to other comparative capitalism theories are analyzed.
- In paragraph 2.2 the main premises of the theory are described.
- In paragraph 2.3 three important criticisms on the theory are presented.
- In paragraph 2.4 it is shown that the new hypotheses presented in this master thesis tackle the criticisms on the theory.

2.1 Advantages of the *Varieties of Capitalism* Theory

As mentioned in the introduction the collection of studies edited by Peter Hall and David Soskice (2001) under the name *Varieties of Capitalism* represents the most ambitious and significant contribution to the comparative capitalism literature. According to Crouch (2005) their book has become the exemplary citation for all studies of capitalist diversity. The *Varieties of Capitalism* theory goes beyond three perspectives that have dominated the study of comparative capitalism in the last thirty years: the *Modernization Approach, Neo-Corporatism* and *Social Systems of Production* (Hall and Soskice 2001, 2-3). Below the relationship between these approaches and the *Varieties of Capitalism* theory is explained. It is also explained why the theory goes beyond these approaches.

2.1.1 The Modernization Approach

The *Modernization Approach* was popular in the post-war decades. This approach saw the main challenge of economies to modernize the pre-war industries. Analysts of this approach tried to discover actors with the capacity to make plans for the industry and impress them on specific industrial sectors. It was often said that this capacity was located within banks but

even more within public organizations. Consequently, analysts of this approach focused on the institutional structures that gave states influence on the private sector. This approach categorized countries into 'strong' states (France and Japan) and 'weak' states (UK) (Cohen 1979; Estrin and Holmes 1983; Zysman 1983; Cox 1986). However, according to Hall and Soskice (2001, 2-3) this approach overstates what states can accomplish, particularly in open economies where changes in the economy are often influenced by firms.

2.1.2 Neo-Corporatism

The second approach, *Neo-Corporatism*, became popular during the 1970s. In this period inflation became the primary problem which developed nation-states faced. The approach was usually associated with the capacity of states to negotiate durable bargains with employer organizations and trade-unions with respect to wages, working conditions and social and economic policies. This approach categorized nation-states on the basis of the organization of their trade-union system. Especially the northern European economies were able to create durable bargains between the state and the trade-unions (Cameron 1983; Calmfors and Driffill 1988). Nevertheless, according to Soskice (1990) the emphasis on the trade-union movement underestimates the influence that firms and employer organizations have on economies. The *Varieties of Capitalism* theory brings the firm back into the centre of the analysis of comparative capitalism, without underplaying the role of trade-unions and employer organizations (Hall and Soskice 2001, 2-3).

2.1.3 Social Systems of Production

The third rubric of approaches, the *Social Systems of Production*, became popular in the 1980s and 1990s. Analysts of this approach center on sectoral governance, national innovation systems and flexible production regimes that are diverse but united in key analytic aspects. These works give attention to the behavior of firms responding to technological changes. Some analysts of this approach are influenced by the French regulation school and emphasis the movement of firms away from mass production towards new production regimes at the sectoral level. These works bring a wide range of institutions into the analysis, adopting a more sociological approach (Hall and Soskice 2001, 2-3). These approaches often resist national categories of analysis in favor of regional successes that can be found in, for example, Baden-Württemberg and the Third Italy (Piore and Sabel 1984; Dore 1986; Dosi

1988; Lazonick 1991; Nelson 1993; Herrigel 1996; Hollingsworth and Boyer 1997; Edquist 1997; Whitley 1999).

A *Social Systems of Production* approach can be associated with a series of publications from the mid-1990s by Hollingsworth, Schmitter and Streeck (1994); Hollingsworth and Boyer (1997a) and Crouch and Streeck (1997). Their approach includes markets, hierarchies, communities, the state, networks, and associations. According to them these six governance mechanisms differ along two underlying dimensions: the degree of self-interest or obligations for actors, and the degree to which power is spread horizontally or exercised vertically. Each of these governance mechanisms has its own organizational structure, rules and enforcement, and typical strengths and failures (Hollingsworth and Boyer 1997b). In sum, these governance mechanisms are the independent variables of the governance approaches and influence actors (Jackson and Deeg 2004). In contrast to Hall and Soskice, who emphasize rational, strategic actor behavior within a set of fixed institutions, the *Social Systems of Production* approach directs attention to social norms and a logic of appropriateness in shaping actor behavior. In their first book, the analysts use industrial sectors as a basic unit of comparative analysis (Hollingsworth, Schmitter and Streeck 1994). In the eight countries they studied, the analysts found significant differences in governance mechanisms across sectors within countries. The analysts conclude that:

> ‘‘just as sectoral differences in technology and market conditions give rise to differences in industrial order within countries, national differences produce different governance regimes within sectors … Differences in governance within sectors are often recognizable as national differences in that they follow a similar logic across sectors’’ (Hollingsworth and Streeck 1994, 272).

Furthermore, Whitley (1999, 33) developed a *Social Systems of Production* approach for the comparison of business systems, defined as ‘‘distinctive patterns of economic organization that differ in their degree and mode of authoritative coordination of economic activities, and in the organization of, and interconnections between, owners, managers, experts, and other employees’’. He described activities as being coordinated by private property rights or by other sorts of association that do not involve unified ownership. In total, Whitely compares eight aspects:

- The means of owner control (direct, alliance, or market).

- The extent of integration of production chains by ownership (low, medium, high).
- The extent of integration of industrial sectors through ownership.
- The extent of alliance coordination of production chains.
- The extent of collaboration between competitors.
- The extent of alliance coordination of sectors.
- The extent of employer-employee interdependence.
- The extent of delegation to and trust of employees.

This approach gives six basic ideal-types of business systems: fragmented, coordinated industrial district, compartmentalized, state-organized, collaborative, and highly coordinated (Jackson and Deeg, 2004).

Nevertheless, the *Varieties of Capitalism* theory focuses on the variation between economies on the national level in its analysis. Hall and Soskice (2001, 5) stress that many of the most important institutional settings, that influence firm behavior, can be found on the national level and not on the sectoral or regional level. Furthermore, the focus of the *Varieties of Capitalism* theory on differences between economies on national levels makes the theory more parsimonious than the *Social Systems of Production* approaches (Hall and Soskice 2001; Jackson and Deeg 2004).

According to Hall and Soskice (2001) all these approaches model the strategic interaction of economic actors, that is central to economies, too incompletely. The importance of strategic interaction is ignored in studies of comparative capitalism. Hall and Soskice (2001, 5) stress that ‘‘if interaction of this sort is essential for economic and political outcomes, the institutions distinguishing one political economy from another will be those conditioning such interaction’’. It is these institutions on which the *Varieties of Capitalism* theory focuses. Because firms are at the centre of the theory and the relationship of firms and institutions are created in game theoretic terms the theory builds bridges between business studies and comparative capitalism, two disciplines that are often disconnected (Hall and Soskice 2001, 5).

2.2 The *Varieties of Capitalism* Theory

Now that the advantages of the *Varieties of Capitalism* theory are elaborated the theory itself is analyzed. The main arguments and the main premises of the theory are summarized in this paragraph. First the objectives of the theory are explained. Second the dualist nature of the *Varieties of Capitalism* theory is described, drawing on the concepts*, institutions, complementarity* of the institutions*,* LME and CME. This description illuminates the core premises of the theory. On the basis of these core premises Hall and Soskice formulate the ideas: *comparative advantages* and *dual convergence.* Third, these two ideas are described. Finally, the view of Hall and Soskice on public policy making is explained.

2.2.1 Comparative Capitalism Theory

The *Varieties of Capitalism* theory sheds light on the functioning of nation-states and on the differences between them. Hall and Soskice state that their approach is able to explain the kind of institutional arrangements and practices that occur in nation-states. The theory provides answers about essential non-negotiable economic practices that result from the coordination between actors in nation-states. It illustrates the kind of institutions and practices that can be expected in a nation-state and sheds light on the national public policy preferences of states. The approach sheds light on questions like: What determines the difference between nation-states?, What will states and companies do in the face of economic change and, what defines their capacities to meet such challenges? (Hall and Soskice 2001).

2.2.2 The Core Premises

The *Varieties of Capitalism* theory sees nation-states as production regimes and focuses on micro agents such as firms, employees, and shareholders and how they organize their production. However at the centre of their analysis is the firm.

According to Hall and Soskice (2001) firms are rooted in a context with five institutional domains that define their incentives and constraints, namely: *industrial relations, vocational training and education, corporate governance, inter firm relations* and *employees*. These are the main institutions of a nation-state that determine what firms can do and what the nature of the state is. Furthermore, these institutions can have two different natures: a liberal nature or a

coordinated nature. In addition, these institutions are *complementary* to each other. This means that when one of the institutions in a political economy has a liberal nature the other institutions will also have a liberal nature and the same is true for nation-states with coordinated institutions. This c*omplementarities* premise makes the *Varieties of Capitalism* theory a dualist approach. Because, on the basis of this premise only two types of political economies can exist: LMEs and CMEs. The US is the exemplary LME and Germany is the exemplary CME (Hall and Soskice 2001). Now that the underlying logic of the *Varieties of Capitalism* theory is clear I will explain in more detail how the different institutions function in LMEs and in CMEs.

In LMEs such as the US, the UK, or Canada, the market has the dominant role in coordinating economic behavior, and the state remains an arm's-length enforcer of contracts. LMEs share the following characteristics: short-term orientated firm finance, deregulated labor-markets, general education, and strong inter-company competition. According to Hall and Soskice (2001) in LMEs, economically actors coordinate their activities via hierarchies and competitive market arrangements. These forms of coordination are described by Williamson (1985). Hall and Soskice state the following:

> ''market relationships are characterized by the arm's-length exchange of goods and services in a context of competition and formal contracting. In response to the price signals generated by such markets, the actors adjust their willingness to supply and demand goods or services, often on the basis of marginal calculations stressed by neoclassical economics'' (Hall and Soskice 2001, 8).

Below in table 1 the assumptions of the *Varieties of Capitalism* theory with respect to the institutions of LMEs are described.

LME Institutions	**Assumptions**
Industrial Relations	Firms in LMEs rely on market relations between individuals and employers to organize relations with the employees. From this follows that top management has unilateral control and can therefore easily hire and fire employees. Furthermore, firms are not obliged to establish representative bodies for employees and in LMEs trade-unions are not as powerful as in CMEs. All this results in a fluid labor-market influencing the strategies of firms

	and individuals. Hall and Soskice (2001, 29-30) assume that it is easier for firms to invest in short-term projects than in long-term projects and that employees invest in general skills.
Vocational Training and Education	In LMEs vocational training is offered by institutions that focus on general skills. Hall and Soskice (2001, 30) assume that firms are unwilling to invest in industry specific skills because they are afraid that other firms profit from this. Firms and individuals invest in general skills due to the fluid labor-markets.
Corporate Governance	For financing firms in LMEs are more attentive to current earnings and the price of their shares because financing and preventing a hostile take over are based on these indicators. Hall and Soskice make some exceptions for firms that operate in high-technology markets. These firms can secure money from venture capital organizations that have tools to control the balance sheet and public assessable information that these firms can provide in LMEs. Nevertheless, the lack of insider information that is common for firms in LMEs makes that firms focus on the publicly assessable balance-sheet indicators that affect their share price (Hall and Soskice 2001, 29).
Inter-Firm Relations	Inter-firm relationships in LMEs are based on standard market relationships and enforceable formal contracts. Relations are mediated by rigorous anti-trust regulations. Hall and Soskice (2001, 30-31) state that knowledge transfer between firms takes place through the movement of scientist (fluid labor-market), and the buying and selling of licenses and patents (licensing and patenting).
Employees	-

Table 1: LME Institutions

In CMEs such as Germany, Sweden, or Switzerland, economic behavior is strategically coordinated to a large extent by non-market mechanisms. CMEs are characterized by long-term industrial finance, cooperative industrial relations, high levels of vocational training, and

cooperation in technology and standard setting across companies. The results of this interaction are the non-negotiable public policies (Jackson and Deeg 2004, 5).

> ‘‘These non-market modes of coordination generally entail more extensive relational and incomplete contracting, network monitoring based on the exchange of private information inside networks, and more reliance on collaborative, as opposed to competitive, relationships to build the competencies of the firm’’ (Hall and Soskice 2001, 8).

In contrast to LMEs where outcomes of firm behavior are given by demand and supply conditions in competitive markets, coordination in CMEs is often the result of strategic interaction between firms. In table 2 the assumptions of the CME institutions are described.

CME Institutions	Assumptions
Industrial Relations	The relationship between firms and employees in CMEs are managed in industry-level bargains between labor-unions and employer associations. In these industry level bargains labor-unions and employer associations secure their needs. Because these bargains focus on long-term agreements it is easier for firms and employees to invest in industry and firm specific skills (Hall and Soskice 2001, 24-25).
Vocational Training and Education	According to Hall and Soskice (2001, 25-26) firms located in CMEs rely more heavily on industry and firm specific skills. In CMEs public organizations and firms create organizations where employees are trained in industry and firm specific skills. For example, Germany has an industry wide employer organizations in which firms articulate their skill need and employees are trained in these skills.
Corporate Governance	In CMEs firms have more access to patient capital because investors have insider information which is realized by extensive networks, where investors and firms are deliberated. The reputation of a company is important. Therefore CMEs have systems for network reputational monitoring. Because firms have more access to patient capital firms can more easily invest in long-term projects that have no short-term profitability (Hall and

	Soskice 2001, 22-23).
Inter-Firm Relations	In CMEs firms and public organizations have established organizations for knowledge and technology transfer. For example, in Germany firms work together with public officials to cultivate knowledge and transfer it between firms. Furthermore, public organizations provide firms with subsidies and a lot of firms cooperate in joint ventures. Germany enables firms to do this with their contract law that encourages relational contracting and German courts permit open contracts (Hall and Soskice 2001, 26-27).
Employees	This institution can be seen as the internal-structure of the firm. Top managers in CMEs rarely have capacities for unilateral control over employees. Managers must secure agreements for major decision from supervisory boards, which include employee representatives as well as major shareholders, and from managers with entrenched position as well as major suppliers and customers. This internal structure leads to consensus decision making and encourages the sharing of information and thereby facilitates network monitoring (Hall and Soskice 2001, 24).

Table 2: CME Institutions

2.2.3 Comparative Advantage and Dual Convergence

On the basis of the assumptions above Hall and Soskice (2001) formulate a theory of institutionally determined *comparative advantage*. That theory explains why specific nations specialize in specific types of products and production. ‘‘The basic idea of the *Varieties of Capitalism* theory is that the institutional structure of an economy provides firms with advantages for engaging in specific types of activities’’ (Hall and Soskice 2001, 37). On the basis of this assumption Hall and Soskice argue that the institutions of LMEs provide companies with capacities for *radical* innovation, while those of CMEs provide support for *incremental* innovation. Therefore, Hall and Soskice state:

> ‘‘that to the extent allowed by transport costs and the efficiency of international markets, there should be national patterns of specialization in activities and products; and these should reflect national responses to the institutional frameworks identified here rather than random geographic agglomeration’’ (Hall and Soskice 2001, 41).

Characteristic for firm innovation in LMEs is that states do not directly influence or support firms but create optimal market conditions and improve the competition between companies; therefore companies have more capacities for *radical* innovation. However, in CMEs the states have a much stronger influence on the innovative capacities of companies which enables firms to innovate more *incrementally*.

Furthermore, Hall and Soskice (2001, 61-63) formulate a *dual convergence* hypothesis. Instead of seeing a global convergence they predict that we will see a *dual convergence*, namely the convergence of LMEs and the convergence of CMEs.

2.2.4 Public Policy Making

According to the *Varieties of Capitalism* theory public policies have to be compatible with the nature of the political economy. This is called *incentive compatible.* According to Hall and Soskice economic policies

> ‘‘will only be effective if they are incentive compatible, namely compatible to the coordination capacities embedded in the existing political economy… In liberal market economies where coordination is secured primarily through market mechanisms, better economic performance may demand policies that sharpen market competition… While coordinated market economies may benefit more from policies that reinforce the capacities of actors for non-market coordination’’ (Hall and Soskice 2001, 47).

Furthermore they define two types of public policies namely: *market incentive* policies, that rely on market based incentives and *coordination incentive* policies (Hall and Soskice 2001, 47-48).

2.3 Criticism on the *Varieties of Capitalism* Theory

The *Varieties of Capitalism* theory is not without criticism. In this paragraph three important criticisms on the theory are described. First, it is stated that the theory does not explain the

diversity between national economies sufficiently because of the dualist nature of the approach. Second, it is argued and I will argue that the diversity within the economy of nation-states remains hidden because the theory focuses only on the nation-state and because of the *complementarities* hypothesis. Third, the theory is criticized for not being able to explain the change of national economies over time.

2.3.1 Diversity Between Nation-States Remains Hidden

The *Varieties of Capitalism* theory categorizes nation-states into LMEs and CMEs. Hall and Soskice (2001) argue that the use of two typologies makes their theory parsimonious. However, Allen (2004) and Crouch (2005) state that if the comparison is limited to two typologies much diversity between nation-states remains hidden. Hall and Soskice shortly consider diversity within the CME typology. Apart from Germany, they also see Japan, Switzerland, the Netherlands, Belgium, Sweden, Norway, Denmark, Finland and Austria as CMEs. However, differences between what Hall and Soskice call 'industry-based' coordination within Germany and 'group-based' coordination in Japan and Korea are identified (Soskice 1998). However, not much is made of this distinction in the *Varieties of Capitalism* theory. A Mediterranean group (France, Italy, Spain, Portugal, Greece and Turkey) is also given consideration. Hall and Soskice (2001, 35) accept that France is a bit different from the CME typology and consider that a so-called southern European group probably constitutes a third, 'post-agrarian model'. Because Hall and Soskice state that this 'post-agrarian model' is empirically situated between the LME and CME model they insist that LMEs and CMEs remain the only points which require theoretical definition. However, elsewhere these Mediterranean states are treated as examples of CMEs; Thelen (1997) treats Italy as a CME. However, by explaining that France, Italy and Japan are CMEs a lot of the characteristics of these countries remain hidden (Crouch 2005, 442).

Also when it comes to LMEs a lot of diversity remains concealed. Campbell and Pedersen (2001) argue that neo-liberalism has not been the monolith that both its advocates and opponents set it up to be. LMEs contain a diversity of practices, some not particularly coherent with others. King and Wood have, for example, demonstrated significant distinctions between the neo-liberalisms of the UK and the US in the 1980s, two cases normally seen as similar paradigms (Crouch 2005).

2.3.2 Diversity Within Nation-States Remains Hidden

The *Varieties of Capitalism* theory focuses on the nation-state level and does not consider differences between sectors of the economy. Crouch (2005) argues that a lot of diversity that exist within nation-states is therefore not explained by the theory.

For example: the fact that a sector like the US defense and aeronautics sector is strongly influenced by the US government has implications for the characteristics of this sector, in *Varieties of Capitalism* terms. According to the theory companies situated in LMEs, such as the US, should not be able to produce *incremental* innovation because these companies are not able to secure finance for long-term projects (Hall and Soskice 2001, 27-29). However, due to government support through patient capital and purchasing arrangements, companies situated in this sector of the US economy are able to secure finance for long-term projects and are able to produce *incremental* innovation, a competence of companies that, according to Hall and Soskice (2001, 38-39), is to be expected primarily in CMEs. Therefore, it seems that if the US is purely seen as a LME the assumptions of the *Varieties of Capitalism* theory can not be applied to this sector of the US economy. Since according to the approach a nation-state is either a LME or a CME, this also means that the explanatory power of the approach is limited to this sector of the US economy. Crouch (2005) has already pointed to this shortcoming of the *Varieties of Capitalism* theory and states that although a dualist approach is parsimonious, a dualist approach misses to explain a lot of nuances that occur within a nation-states economy. Therefore he suggests that nation-states should be studied, not to determine to which type, LME or CME, they should each be allocated, but to determine which of these forms can be found within them and in what proportions.

2.3.3 The Theory Does Not Explain Institutional Change Over Time

Hall and Soskice (2001) present two typologies of capitalism and stress that each of these two forms has its *comparative advantages*. Economies such as the German economy (CME typology) should prevail at producing products for which *incremental* innovation is needed and economies such as the US economy (LME typology) should produce products for which *radical* innovation is needed. Because these different typologies of capitalism are considered to be the product of historical growth, this also means that the German economy never was radically innovative in the past. Crouch (2005, 443) argues that this requires explaining away

many past events in the economic history of German industries such as chemicals, machinery, steel and motor vehicles when these sectors were at the head of technological development.

Crouch (2005), Zeitlin (2002) and Bertoldi (2003) criticize the *Varieties of Capitalism* theory and argue that the two typologies LME and CME are fixed over time. The typologies make no provision for changes. Zeitlin and Windolf (2002, 85) argue that approaches like that of Hall and Soskice make learning almost impossible. And Bertoldi (2003) states that Hall and Soskice ignore any impact of change in the world economy and make no allowance for development. Crouch (2005) argues that it is not necessary for neo-institutionalist analysis to be as inflexible as this.

Furthermore, Blyth (2003) questions if the LME and CME typologies which Hall and Soskice base on an analysis of the US and German state are really stable typologies. Blyth points towards empirical evidence of Hassel (1999), who analyzed change in the German governance system, to make his point. Hassel (1999) concludes that in Germany ‘‘today, at the end of the 1990s… the pressures on the system to change are overwhelming. Employees increasingly resign from employers confederations, or undercut, often illegally, the terms and conditions provided for in collective agreements’’. Thus, the institutions that are central to the *Varieties of Capitalism* theory are disappearing. Furthermore, Blyth argues that the US seems to intervene in labor-markets just as much as European governments and this seems to improve unemployment performance. However, going by this example, Blyth argues, none of this has much to do with the institutions that make the US a LME.

Nevertheless, Hall and Thelen respond to these arguments and state that they see the political economy as an institutional ecology in which the strategies of the actors are simultaneously conditioned by multiple institutions. They see the process of institutional change as one of ‘‘mutual adjustment, inflected by distributive concerns, with incremental impacts on the strategies of firms and other actors’’ (Hall and Thelen 2006, 26). As a result they predict that

> ‘‘cataclysmic institutional change in the political economy is likely to be rare, even though the long-term effects of incremental change can be profound. Underlining a distinction between institutions and the modes of coordination they support, they suggest that the capacities of firms for coordination are sometimes though by no means always resilient in the face of institutional change’’ (Hall and Thelen 2006, 26).

2.4 Improvement of the *Varieties of Capitalism* Theory

In this paragraph the three criticisms on the *Varieties of Capitalism* theory presented above are analyzed. Furthermore, the improvement of the theory is described shortly by drawing on the new hypotheses described in the introduction and on the analyzed criticism.

2.4.1 Explaining Diversity Between Nation-States

According to Allen (2004) and Crouch (2005) a lot of diversity between nation-states remains hidden because of the dualist approach of Hall and Soskice (2001). Hall and Soskice also recognize this, by pointing towards the differences that exist between the German CME, the Japanese CME and the French political economy. However, they do not use this knowledge to add a new typology to their theory or alter their theory in that it allows differences within one typology. Rather they argue that these cases are situated between the LME and the CME typology and therefore insist that LMEs and CMEs remain the only points which require theoretical definition (Thelen 1997; Soskice 1998; Hall and Soskice 2001). However, because of the *complementarities* premise of their theory the theory fails to explain cases that are situated between the LME and the CME typology, because nation-states can only be categorized to one of these two typologies and not to both at the same time. Thus, the argument of Hall and Soskice does not tackle the criticism of Allen and Crouch.

The hypotheses that are presented in the introduction do embark upon this criticism. By moving the analytical focus of the *Varieties of Capitalism* theory from the nation-state to sectors of a nation-state the theory is able to explain that differences do exist between nation-states. After this improvement the theory is able to explain that one nation-state tends more to the CME typology and another nation-state tends less to this typology. This is possible to say after an analysis of the different sectors of the economies of the analyzed nation-states.

2.4.2 Explaining Diversity Within Nation-States

Hall and Soskice (2001) do not tackle the second criticism, namely that the diversity in nation-states remains hidden. This diversity remains hidden because of two premises of the *Varieties of Capitalism* theory. First, the theory states that the institutions that are central to nation-states are *complementary* to each other. This means that when one institution of a

nation-state has a liberal nature the other institutions will also have a liberal nature. Thus, within a nation-state the LME and CME typology can not be present at the same time. Second, since the *Varieties of Capitalism* theory its analytical units are nation-states the difference between sectors of the economy remains hidden. This also explains why the theory is not able to explain the *incremental* innovation that Boeing produces within the US.

The hypotheses that are presented in the introduction do also remove this criticism. By moving the analytical focus of the *Varieties of Capitalism* theory from the nation-state to sectors of a nation-state the theory is able to explain that differences do exist between sectors of a nation-state's economy. After this improvement the theory is able to explain that sectors within one nation-state can have a different nature, CME or LME.

2.4.3 Explaining Institutional Change

The third criticism on the *Varieties of Capitalism* theory is the argument that the theory is not able to explain institutional change over time. However, I think that Hall and Thelen (2006) tackle this criticism by pointing out that they see the process of institutional change as one of ''mutual adjustment, inflected by distributive concerns, with incremental impacts on the strategies of firms and other actors''. And predict that ''cataclysmic institutional change in the political economy is likely to be rare, even though the long-term effects of incremental change can be profound'' (Hall and Thelen 2006, 26).

3 Methodology

In the previous chapters the research goal, the hypotheses and the *Varieties of Capitalism* theory have been described and analyzed. In this chapter I present the methodology of this master thesis. This methodology explains and justifies the empirical evidence that is presented in chapter 4. With the help of this methodology I will show that states can create exceptions to the dominant mode of their political economies and verify the new hypotheses (improvement of the *Varieties of Capitalism* theory). This chapter consists of the following four paragraphs:

- In paragraph 3.1 a research method is chosen, explained and justified.
- In paragraph 3.2 two cases for the comparative case study are chosen, explained and justified.
- In Paragraph 3.3 the hypotheses presented in chapter 1 are operationalized, the needed data are described and the data collection method is illustrated.
- In paragraph 3.4 the data quality is discussed by drawing on the reliability, the validity and on the generalization of the findings of this master thesis.

3.1 Research Method

In this paragraph a research method is chosen that results from the research goal of this master thesis. First, criteria for the justification of the research method are formulated that result from the research goal in chapter 1. Second, a research method is presented.

3.1.1 Criteria for the Research Method

In this master thesis the *Varieties of Capitalism* theory is falsified and improved. This is done by showing that 'states can create exceptions to the functioning of the dominant mode of their political economies with the help of targeted policies and laws' (Hypothesis 1). Because the *Varieties of Capitalism* theory presents two comparative capitalism typologies (LMEs and CMEs) empirical evidence is needed that shows:

- That a LME state can create a sector within its political economy that has a CME nature with the help of targeted policies and laws.

Or/and:

- That a CME state can create a sector within its political economy that has a LME nature with the help of targeted policies and laws.

In addition, according to the third hypothesis, presented in the introduction, these targeted policies and laws have a neo-mercantilist nature. More specific, the targeted policies and laws support and protect the sector of the political economy that deviates from the dominant mode of the political economy. Thus:

- The CME sector that exists within a LME state is protected and supported by the state with targeted policies and laws.

Or/and:

- The LME sector that exists within a CME state is protected and supported by the state with targeted policies and laws.

Thus, two states are needed, one LME state and one CME state. Furthermore, the governments of these states should support and protect the sectors of their economies that deviate from the dominant mode of their political economies.

3.1.2 Comparative Case Study

From the criteria above it follows that ideally two nation-states are needed: a LME state and a CME state. Furthermore, it has to be shown that within each of these two nation-states a sector exists that deviates from the dominant mode of the political economies (CME within LME and LME within CME). Furthermore, it has to be shown that the policies and laws that make this deviation possible have a neo-mercantilist nature. To do this: a comparative case study is done. The influence (policies and laws) that a LME and a CME state have on a similar economic sector is compared.

3.2 Choosing Case Studies

In this paragraph the two cases for the comparative case study are selected. First, criteria are formulated with respect to the case choice. Second, a LME case is chosen. Third, a CME case is chosen.

3.2.1 Criteria

Two states have to be chosen. These two states are the analytical units. According to Hall and Soskice the US is the ideal-type LME and the EU (Germany) is the ideal-type CME. To present a strong argument within this master thesis these two ideal-type states are used for the case study. Thus:

- The two states, analytical units, have to be the US and the EU (Germany).

In addition, as described in the introduction Crouch (2005) argues that a fundamental characteristic of the US, that is central to much of its innovative capacity, is the close relationship between the US government departments and the scientifically orientated defense sector. According to Crouch a lot of the innovative capacity of the US defense sector depends upon the government support. Furthermore, Campbell and Pederson (2001) state that the functioning of this sector has nothing to do with the neo-liberal principles that can be associated with the US LME. In this sector a deviation is expected. I expect that a deviation from the *Varieties of Capitalism* theory is also present in the case of the EU defense sector. Based on the argument of Crouch and Campbell Pederson it is expected that the US and EU defense related sectors deviate from the dominant mode of the US and the EU political economies. Thus:

- The sector that deviates from the LME and CME dominant mode of political economy has to relate to the defense sector.

Furthermore, the cases have to be comparable based on the size of the sector (Economic activity in turnover). Thus:

- The sectors have to be comparable.

3.2.2 Choosing a Case

Boeing and Airbus are two high-technology aeronautic and defense companies. Boeing is situated in the US and Airbus is situated in the EU (Germany, France, the UK and Spain). In *Varieties of Capitalism* terms Boeing is situated in a LME and Airbus is situated especially in

a CME. Furthermore, the companies produce comparable products, have a comparable size and have a comparable turn-over. Furthermore, the large civil aircraft sector is a duo-poly consisting of Boeing and Airbus. Thus, the two companies represent the total large civil aircraft sector of the US and the EU. Below the companies are described in more detail:

3.2.2.1 Case US Boeing

With total annual revenues of $54.8 billion and more than 153,000 employees, Boeing is the largest producer of large civil aircraft and military aircraft and the largest US exporter by sales. Boeing is organized into three business units: Boeing Commercial Airplanes, Boeing Capital Corporation, and Boeing Integrated Defense Systems. In addition the firm has a R&D unit, called Boeing Phantom Works, which conducts R&D. The Boeing Commercial Airplanes unit develops and manufactures Boeing's large civil aircraft products, including the 717, 737NG, 747, 767, 777, and 787 planes. Boeing Capital Corporation is a subsidiary of the Boeing Company and provides lending and leasing to support other Boeing business units by arranging, structuring, and providing financing to assist in the sale and delivery of Boeing products. Furthermore, Boeing is the second largest defense firm in the world. The Integrated Defense Systems business unit focuses on defense, intelligence, communications, and space. The firm is a major US defense contractor, developing and producing military aircraft and defense-system products and programmes for the armed forces of the US and foreign governments. The US Government is Boeing's largest customer. Finally, Boeing Phantom Works conducts R&D for all units of Boeing. The business unit has about 4,000 employees working across the US on about 500 advanced technology projects that focus on providing innovative breakthrough in performance for all Boeing products (European Commission 2007, 15-18).

3.2.2.2 Case EU Airbus

Airbus is the European producer of large civil aircraft. Airbus relies on a network of 1,500 suppliers in about 30 countries. The firm employs about 55,000 people of more than 80 nationalities. Headed in Toulouse, France, Airbus operates on over 160 international locations, including 16 development and manufacturing sites in France, Germany, the UK and Spain, and three subsidiaries in China, Japan, and the US. The firm also sustains field service offices in more than 130 locations around the world. Airbus is active in research, design,

development, certification, engineering, procurement, manufacture, assembly, testing, flight testing, customization, sales and marketing, financing, leasing, product support, spares provision, and any other secondary services relating primarily to large civil aircraft, military transport aircraft and military tanker aircraft (European Commission 2007, 13-15). Although the total turnover of Boeing and Airbus diver the turnover with respect to the large civil aircraft unit of both companies is similar.

However, there is one difficultly in studying the case EU Airbus. Since Airbus is a European project the company is situated in a number of EU member states (Germany, France, the UK and Spain). The nature of the political economies of these member states differ from each other. Germany is the ideal-type CME, and France and Spain more or less tend to the CME typology. Nevertheless, the UK is a typical LME. Thus, Airbus is influenced by CME and LME states at the same time. To tackle this problem the influence on Airbus of the different member states and the EU is analyzed separately. This separate analyzes enables a more solid testing of the hypotheses presented in the introduction.

3.3 Operationalization

Now that the case study is clear in this paragraph the hypotheses presented in the introduction are linked to the cases US Boeing and EU Airbus. First, the variables of the hypotheses are operationalized and the necessary and sufficient indicators are described (Babbie 1998, 138). Second the needed information is illustrated. Third, the data collection method is explained.

3.3.1 Operationalization and Necessary and Sufficient Indicators

The first hypothesis presented in the introduction falsifies and improves the *Varieties of Capitalism* theory. The second and third hypotheses improve the *Varieties of Capitalism* theory. In this section these hypotheses are operationalized.

3.3.1.1 Case US Boeing

Hypothesis 1: States can create exceptions to the functioning of the dominant mode of their political economies with the help of targeted policies and laws.

In the case of US Boeing it is expected that the US stimulates Boeing's innovation with financial and material support and protection (independent variable). This support and protection creates a positive cash-flow level for Boeing. This positive cash-flow level enables Boeing to produce products for which *incremental* innovation is needed (dependent variable). The support and protection has to be a necessary cause for the development of Boeing's *incremental* innovation products (Babbie 1998, 76). The relationship between these variables is illustrated below in illustration 1:

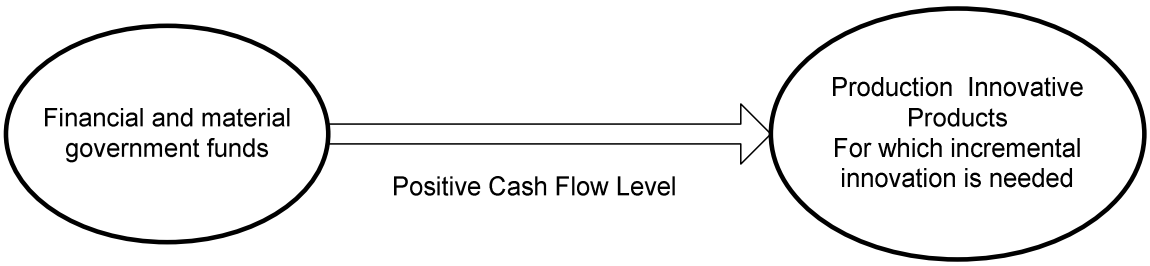

Illustration 1. Independent and Dependent Variable

If it is true that the US government support and protection is a necessary cause that enables Boeing to produce *incremental* innovation the first hypothesis presented in the introduction is verified.

If it is shown that a sector of the US political economy is able to produce *incremental* innovation the *Varieties of Capitalism* theory is falsified.

If it is true that sectors of the US economy are able to produce *incremental* innovation the improvement hypothesis below has to be added to the *Varieties of Capitalism* theory:

Hypothesis 2: Institutions that determine the functioning of a sector of a political economy are complementary to each other.

Based on neo-mercantilist arguments it is argued in the introduction that states protect and support sectors of their economy that are of significant importance for their national security. In the introduction this leads to the hypothesis below:

Hypothesis 3: If a sector of an economy is of significant importance for the national security, a state supports and protects this sector of its economy.

In the case of US Boeing this hypothesis is operationalized as follows:

First, if Boeing is of significant importance for the US state the state provides financial and material support and protection to Boeing for the production of products from which other companies are excluded. It is expected that this specific financial and material support is a necessary condition for Boeing to develop aeronautics. Second, if Boeing is of significant importance for the US state US representatives make clear in public statements that Boeing is protected and supported because Boeing is of significant importance for the national security. Below the expected relationship is illustrated, in Illustration 2.

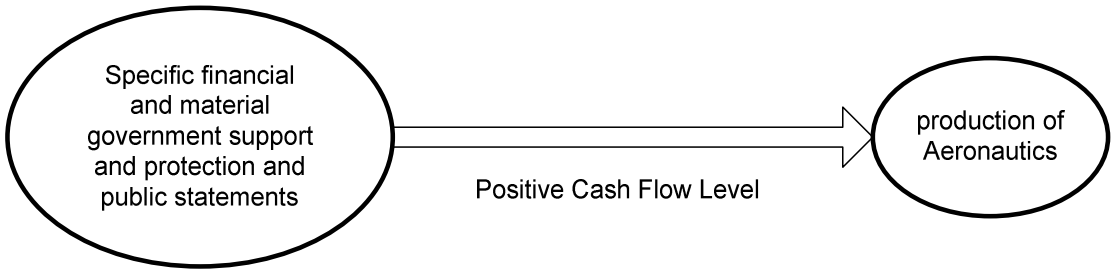

Illustration 2. Independent and Dependent Variable

3.3.1.2 Case EU Airbus

Hypothesis 1: States can create exceptions to the functioning of the dominant mode of their political economies with the help of targeted policies and laws.

In the case of EU Airbus it is expected that the EU stimulates Airbus its innovation with financial and material support and protection (independent variable). This support and protection creates a positive cash-flow level for Airbus. This positive cash-flow level enables Airbus to produce products for which *radical* innovation is needed (dependent variable). The support and protection has to be a necessary cause for the development of Airbus its *radical* innovation products (Babbie 1998, 76). The relationship between these variables is illustrated below:

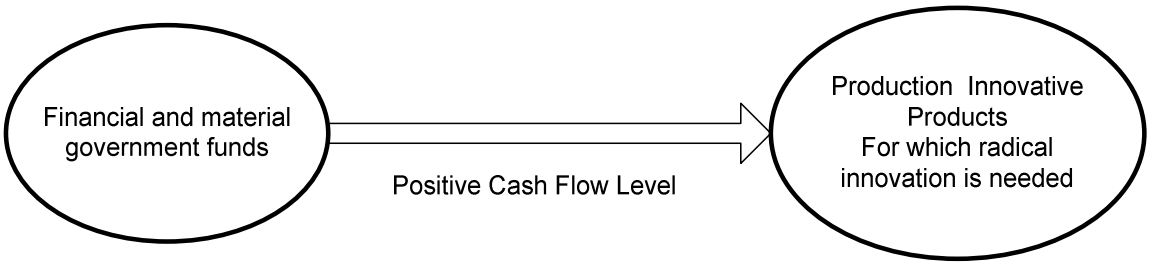

Illustration 3. Independent and Dependent Variable

If it is true that the EU government support is a necessary cause that enables Airbus to produce *radical* innovation the first hypothesis presented in the introduction is verified.

If it is shown that a sector of the EU political economy is able to produce *radical* innovation the *Varieties of Capitalism* theory is falsified.

If it is true that sectors of the EU economy are able to produce *radical* innovation the improvement hypothesis below has to be added to the *Varieties of Capitalism* theory.

Hypothesis 2: Institutions that determine the functioning of a sector of a political economy are complementary to each other.

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Hypothesis 3: If a sector of an economy is of significant importance for the national security, a state supports and protects this sector of its economy.

In the case of EU Airbus this hypothesis is operationalized as follows:

First, if Airbus is of significant importance for the EU states these states provide financial and material support and protection to Airbus for the production of products from which other companies are excluded. It is expected that this specific financial and material support are a necessary condition for Airbus to develop aeronautics. Second, if Airbus is of significant importance for the EU states EU representatives make clear in public statements that Airbus is

protected and supported because Airbus is of significant importance for the national security. Below the expected relationship is illustrated, in Illustration 4.

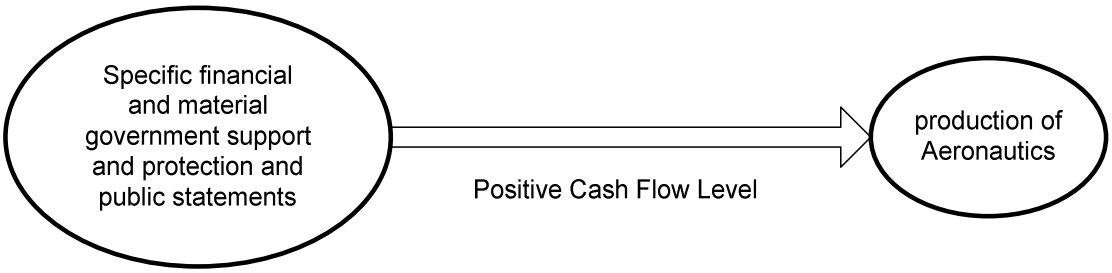

Illustration 4. Independent and Dependent Variable

3.3.2 Needed Information

Three different types of information are needed. First, it is necessary for this thesis to find information that shows how much financial and material support and protection flows from the US and EU states to Boeing and Airbus. Second, information is needed that shows what the impact of this financial and material support is on the innovative capacities of Boeing and Airbus. Third, information is needed that explains with what intent this state support and protection was provided to Boeing and Airbus. Was it given to Boeing and Airbus with the intent to protect both companies, due to the significant importance of both companies to the US and EU national security? This can reveal if Boeing and Airbus have a special position within the US and the EU economies when it comes to state support and protection.

It is expected that the necessary information is available in official publications of the US and EU governments, the companies Boeing and Airbus and the WTO. Official publications of the WTO are taken into account because the US and the EU are accusing each other of giving WTO inconsistent subsidies to Boeing and Airbus. It is expected that a lot of useful information can be found within these documents. In addition, it is expected that these WTO reports encapsulate the domestic policies and laws with respect to Boeing and Airbus. The documents below are taken into account:

- European Communities. 2007. United States – Measures Affecting Trade In Large Civil Aircraft (DS353). European Communities.

- The United States of America. 2007. European Communities And Certain Member States – Measures Affecting Trade In Large Civil Aircraft. The United States of America.

- Annual Reports of Boeing and Airbus between 2000 and 2008.

The first two documents are reports consisting of about 1000 pages of information concerning the relationship between Boeing and the US government departments and the relationship between Airbus and the EU states. These documents give a lot of information about the US and EU influence on the innovative capacities of Boeing and Airbus. Furthermore, the Annual Reports of Boeing and Airbus are analyzed. It is expected that these reports give an impression of the financial support that both companies obtain.

3.3.3 Data Collection Method

Since a lot of diverse information is needed a qualitative approach is used to gather useful information. It is expected that this qualitative approach results in highly valid outcomes. However, a disadvantage of this approach is that the findings can not be generalized to other companies in LMEs and CMEs that are not comparable to Boeing and Airbus. However, since the large civil aircraft sector is a duopoly consisting of Boeing and Airbus it is possible to say that the conclusions of this master thesis do apply to this sector of the US and EU political economies.

3.4 Data Quality

In this paragraph I discuss issues of reliability, validity and generalization. First, the reliability of the findings is described. Second, the validity of the findings is explained. Finally, it is explained to what other cases the findings of this thesis can be generalized.

3.4.1 Reliability

According to Babbie (1998) ‘‘in the abstract reliability is a matter of whether a particular technique, applied repeatedly to the same object, would yield the same results each time’’. This means that another researcher that would use the same research method as I did would

come to the same results. For the information gathering a qualitative documentary analysis is done. Qualitative means that the content and the arguments are interpreted by the researcher. This interpretation depends on the background and on the knowledge of the interpreter. Thus, different interpreters with different backgrounds and knowledge can come to different results. It can be said that the research method has not a high reliability. However, within the documents necessary facts are searched that verify the hypotheses presented in the introduction. This means that the outcomes are useful although they are not highly reliable.

3.4.2 Validity

Since this is a qualitative analysis the necessary indicators that are needed for the verification of the hypotheses and for the falsification of the *Varieties of Capitalism* theory are considered and interpreted from different perspectives. I think that this approach leads to valid outcomes and that the ‘‘empirical measure adequately reflects the real meaning of the concept under consideration’’ (Babbie 1998, 133).

3.4.3 Generalizations

In section 3.3.1 of this master thesis it is explained that the findings of this master thesis apply to the large civil aircraft sector. However, the products which are produced for the large civil aircraft sector are very similar to high-tech defense and defense related products. Therefore it is argued in this master thesis that the findings can be generalized to the defense related sectors of the US and the EU.

4 Comparative Case Study

Goal of this master thesis is to show that states can create exceptions to the functioning of the dominant mode of their political economies with the help of targeted policies and laws.
In this chapter I present empirical evidence that shows that the US enables Boeing to produce *incremental* innovation with the help of neo-mercantilist support and protection. And, I analyze if the EU enables Airbus to produce *radical* innovation with the help of neo-mercantilist support and protection. This chapter consists of the following four paragraphs:

- In paragraph 4.1 the US support and protection for Boeing is described.
- In paragraph 4.2 this empirical evidence is analyzed with the help of the operationalized hypotheses of section 3.3.1.1.
- In paragraph 4.3 the EU support and protection for Airbus is described.
- In paragraph 4.4 this empirical evidence is analyzed with the help of the operationalized hypotheses of section 3.3.1.2.

4.1 US Support and Protection for Boeing

In this paragraph information is presented that illustrates the support and protection that Boeing received from the US. Information is presented that shows:

- How much financial and material support and protection Boeing received from the US state.
- What the impact was of this support and protection on Boeing's innovation and Boeing's production.
- With what intent this support and protection was provided to Boeing by the US.

This information is presented by drawing on WTO publications of the EU and Annual Reports of Boeing. First I will present information that shows the US state-level support and protection for Boeing. Second, information is illustrated that describes the US federal-level support and protection for Boeing.

4.1.1 State-Level Support and Protection

In this section empirical evidence is presented on US state-level.

According to the WTO report of the EU ‘‘the States of Washington, Kansas, and Illinois, and various localities therein, have provided over $800 million in benefits for Boeing, and have committed to provide over $4 billion in additional benefits beginning in 2007’’ (European Commission 2007, 2). More precisely:

> ‘‘the State of Washington has committed to provide almost $3.5 billion in tax breaks of benefit to Boeing over the next 20 years through House Bill 2294 (HB 2294), as well as almost $500 million in other incentives, including training facilities and infrastructure improvements, in connection with production of the 787’’ (European Commission 2007, 2).

Theses benefits are provided to Boeing as export contingent tax incentives tied to the production of Boeing’s large civil aircraft. In the words of Washington state governor Gary Locke, these benefits are designed to help ‘‘Boeing beat Airbus’’ and ‘‘give Airbus executives many sleepless nights for years to come’’ (European Commission 2007, 2). These benefits are financial contributions that confer specific benefits to Boeing, particularly with respect to the production of the Boeing 787, from which other companies are excluded. The EU argues: ‘‘the specificity of each element of this package is beyond doubt’’ (European Commission 2007, 116-17). Furthermore:

> ‘‘the City of Wichita, Kansas, has provided property and sales tax abatements associated with almost $4 billion in industrial revenue bonds (IRBs) issued on behalf of the Wichita facilities used to produce parts for Boeing. Through a complicated legal scheme, the sole intention and consequence of these IRBs has been to provide property and sales tax breaks benefiting Boeing. The State of Kansas, through the Kansas Development Finance Authority (KDFA), has also issued $80 million in bonds related to the production of a portion of the 787 fuselage in Wichita. These bonds are a means to the end of providing twenty years of semi-annual grants benefiting Boeing’s 787 project’’ (European Commission 2007, 2).

On page 140 of the EU WTO report the EU shows, with respect to these benefits, that Boeing has been the dominant beneficiary of IRB related tax breaks, and has received large amounts of this benefit, since this benefit has been specifically adapted to Boeing (European

Commission 2007, 140). And, with respect to the KDFA bonds: the state of Kansas called them ‘‘Boeing Bonds’’ (European Commission 2007, 2).

> ‘‘In Illinois, the state and municipalities therein have provided Boeing with a generous and long-term incentive package in connection with its decision to relocate its corporate headquarters to Chicago, Illinois, in 2001… the City of Chicago even wrote a check to the landlord of Boeing’s headquarters building, to help ensure that Boeing could have the building of its choice, at the time of its choosing, without having to pay a premium’’ (European Commission 2007, 2).

On the pages 159, 165, 173 and 128 of the EU WTO report it is described that all benefits, bonds, tax- breaks and other financial and material support and protection has been specifically designed for Boeing and that other companies are not able to profit from them.

4.1.2 Federal-Level Support and Protection

Boeing has obtained almost 17 billion US dollars since 1989 in benefits from the National Aeronautics and Space Agency (NASA), the Department of Defense (DOD), the Department of Commerce (DOC), and the Department of Labor (DOL). Most of this funding is provided by NASA and DOD, primarily by their aeronautics R&D subsidies. Furthermore, NASA and DOD also granted intellectual property rights and valuable research results, like: patents, trade secrets, and data rights to Boeing. In addition, these agencies compensated Boeing for certain R&D costs not being subject to the terms of a contract. Finally these agencies provided facilities, equipment, and employees for large civil aircraft related R&D (European Commission 2007, 3).

According to the EU the US Government and Boeing have a very close and long-standing relationship that helps Boeing succeed in the large civil aircraft sector. The US Government and Boeing often admit in public statements that this sector is unique and benefits from generous government funding. The federal R&D funding and support greatly reduces the need for Boeing to finance its own R&D for developing new and improved products and shifts the risk of new product development to the US state. In sum, federal R&D funding and support lead to the development of valuable technologies for Boeing, this technology remains with Boeing through intellectual property rights and other technology transfer restrictions

(European Commission 2007, 3). Therefore, other companies can not profit from these policies and laws.

The EU states that ‘‘the US large civil aircraft industry is ‘unique’ among US manufacturing industries in having received extensive federal government support for R&D since its creation’’ (European Commission 2007, 3). Robert Spitzer, the former vice president at Boeing, has acknowledged that NASA’s unique cooperation with Boeing ‘‘is evident in every U.S.-made aircraft’’ (European Commission 2007, 3). NASA’s contributions to Boeing will proceed in the future, as ‘‘the revolutionary technologies developed by NASA within the next decade are the basis for a new generation of environmentally friendly aircraft and will enhance U.S. competitiveness 20 years from now’’ (European Commission 2007, 3). According to Daniel Goldin, the former administrator of NASA, the effects of the longstanding relationship between Boeing and NASA can be best described as follows:

> ‘‘We have been talking to Boeing and working with Boeing ... They don’t want us to do the near-term things that will impact the next five years. The die is cast for the next five years. The things we have already done are into their products and we’re now looking, what can we do now for a decade from now. If you look to NASA to impact the sales of Boeing planes … in the next five-seven years, the die is cast. What we’re talking about is moving out, aggressively, in a real partnership’’ (European Commission 2007, 3).

Amongst the aeronautics R&D subsidies that NASA provides to Boeing are the following:

> ‘‘NASA’s Advanced Subsonic Technology (AST) Program and High Speed Research (HSR) Program, which provided over $2.3 billion for research that was deemed by NASA, itself, as ‘vital to the future of the nation’s civil aircraft industry.’ Much of this funding benefited Boeing, and benefits from this funding continue today. One of the policies of these programmes was to restrict the transfer of valuable information outside of the United States because, in NASA’s own words, “it is critical for the U.S. to maintain its lead over foreign competition in aerospace technology.’ These R&D subsidies were not designed for the benefit of the flying public, but instead for the benefit of the US large civil aircraft industry’’ (European Commission 2007, 4).

Furthermore, these programmes have continued in other multi-billion dollar NASA programmes that have subsidized Boeing’s research, such as the High Performance Computing and Communications (HPCC) Program, Aviation Safety Program, Quiet Aircraft Technology (QAT) Program, Vehicle Systems Program, and Research & Technology Base

(R&T Base) Program (European Commission 2007, 5). The WTO report of the EU concludes that:

> ‘‘Boeing and NASA employees have worked together in integrated teams to create technologies for Boeing, with the personnel costs for highly skilled NASA and Boeing employees being paid by the US Government. To express its gratitude for the contribution of NASA employees to its products, Boeing, in fact, named a composite development centre after a former NASA Langley employee’’ (European Commission 2007, 5).

In addition to the NASA subsidies billions of dollars in DOD R&D contracts have also directly benefited Boeing, without any requirement that Boeing has to repay any amount of the commercial benefits to the US state. The EU demonstrates that Boeing uses military technologies developed together with DOD support on its products, predominantly the 787. Furthermore, DOD not only funds the development of technology for the US large civil aircraft sector, but also pays Boeing awards and incentive fees (European Commission 2007, 6).

> ‘‘NASA and DOD have transferred billions of dollars in valuable patent and other intellectual property rights to Boeing, without any demand for payment or license fees. Boeing is free to use the patented technologies for itself, or to license them to others for profit’’ (European Commission 2007, 6).

Furthermore, billions of dollars in Independent Research and Development (IR&D) and Bid and Proposal (B&P) funding provided by NASA and DOD have served as a source of funding allowing Boeing to develop its products at government costs. The DOD has explained that primary control of IR&D activities ‘‘rests with the contractors, who are free to determine both the amount and focus of their IR&D activities’’ (European Commission 2007, 7). A study conducted for the DOD found that firms can be compensated for IR&D expenses for ‘‘work on technologies that were potentially of no interest to the DOD’’ (European Commission 2007, 7). The EU concludes that:

> ‘‘The United States has carefully designed these subsidies for the US large civil aircraft industry particularly to enhance Boeing’s competitiveness and, in turn, cause harm to its only remaining competitor in the market, the European Communities' Airbus. For example, Boeing has admitted that ‘every U.S.-made aircraft’ incorporates technologies developed by federally-funded R&D, and that it has in fact ‘leveraged’ federal R&D contracts for the benefit of its large civil aircraft. This includes ‘infusing’ into its technology that it developed through federally-funded research on military aircraft. Federal

> government agencies have even sanctioned studies to evaluate the market impact of federally-funded aeronautics R&D, and have measured the success of these R&D subsidies by 'how well they contribute to an increased market share for U.S. civil aircraft and aircraft component producers'' (First Submission EU in WTO case DS 353 2007, 8).

On page 182 of its WTO report the EU states that: ''Intellectual property protections, limited access to government-supported research results, and export control restrictions operate to ensure that the benefits from the R&D subsidies at issue flow principally to Boeing'' (European Commission 2007, 182). The US agencies do not receive anything of value in return for the R&D benefits which they provide to Boeing. It is clear that the US state is not manufacturing large civil aircraft or its parts. Instead, Boeing is the only beneficiary of the elements of the R&D programmes that develop new aeronautics technology (European Commission 2007, 182). In addition, with regard to limited access rights, a myriad of contractual provisions helps to ensure that Boeing can benefit from certain US state-supported technologies to the exclusion of Airbus (European Commission 2007, 183). On the pages, 212, 222, 232, 245, 251, 256, 264, 316, 332, 353, 367, 374, 378, 397 of the EU WTO report the EU demonstrates that the subsidies that are provided by the US state and government agencies are specific, meaning that competing firms can not profit from them.

4.1.3 Summary of Main Points

> ''Working together, we will give Airbus executives many sleepless nights for years to come'' (Locke 2003).

> ''The reason that there is a NASA Langley and the other aeronautics centers is to contribute technology to assure the preeminence of US aeronautics. When Boeing brings out a flagship product like the 777, that uses as many products of NASA technology as are on this plane, it reaffirms the reason that we exist and it is very gratifying to us'' (Creedon 1998) .

In the WTO report of the EU the EU states that the US state and federal governments have granted 23 billion US dollars in specific financial and material support and protection to Boeing. In addition the EU shows that these are: forbidden subsidies contingent upon export performance; and actionable subsidies that cause serious prejudice, and therefore undesirable effects, to the interests of the EU and Airbus (European Commission 2007).

According to the EU, Boeing and the US state and federal governments have cooperated closely to improve the condition of US aeronautics technology, and to improve the competitive position of Boeing. This relationship goes on, as valuable support transfers to Boeing on an annual basis from multiple agencies of the US state. ‘‘With Boeing surpassing Airbus in orders by a large margin in 2006, and at the same time continuing to drive down prices, the direct results of this support have never been clearer’’ (European Commission 2007, 1). In table 3 the financial and material support that the US government agencies granted to Boeing are summarized:

Government(s) or Government Agency	Subsidy Programmes	Total Benefits
State of Washington and Municipalities Therein	Boeing Incentive Package enacted pursuant to HB 2294, Everett Ordinance 2759-04, and Project Olympus Master Site Agreement	$3,920 mn
State of Kansas and Municipalities Therein	Wichita Industrial Revenue Bonds; State KDFA Bonds	$906 mn
State of Illinois and Municipalities Therein	Corporate Headquarters Relocation Incentives	$25 mn
NASA/DOD/DOC/DOL	Aeronautics R&D Programmes; Intellectual Property Right Transfers; IR&D/B&P Reimbursements; Facilities, Equipment, and Employees; Training Grants	$16,626 mn
US Federal Government	FSC/ETI and Successor Legislation	$2,199 mn
TOTAL		$23,676 mn

Table 3. US subsidies to Boeing (European Commission 2007, 9).

4.2 Analysis Case US Boeing

Now that the empirical evidence is presented the evidence is analyzed with the help of the operationalized hypotheses presented in section 3.3.1.1. First it is analyzed if the US LME does create an exception to its dominant mode of political economy with the help of targeted policies and laws, in the case of US Boeing. Second, it is analyzed if these policies have a neo-mercantilist nature.

4.2.1 Does the US Create an Exception?

It is stated in section 3.3.1.1 that in the case of US Boeing it is expected that the US stimulates Boeing’s innovation with financial and material support and protection (independent variable). This support and protection creates a positive cash-flow level for Boeing. This positive cash-flow level enables Boeing to produce products for which *incremental* innovation

is needed (dependent variable). The support and protection has to be a necessary cause for the development of Boeing's *incremental* innovation products (Babbie 1998, 76).

The states Washington, Kansas and Illinois have transferred 4,851 million US dollars to Boeing. This support was provided to Boeing in tax-breaks, subsidies and material support. According to the EU this support was necessary for the production of the Boeing 787. It was also necessary support to build new factories in the state of Washington and a new head-quarter in Chicago, Illinois. In addition, NASA, DOD, DOC, DOL and the US federal government have provided 18,825 million US dollars to Boeing. This money was transferred to Boeing to support Boeing to produce large civil aircraft and military products. The money was transferred as aeronautics R&D, intellectual property rights transfers, reimbursements, facilities, equipment and employees and training grants. According to the EU this financial and material support was necessary for the production of the Boeing 737, 777 and 787. In addition, this material support was necessary to give Boeing a competitive advantage over Airbus (European Commission 2007).

In sum, it can be concluded that the US state and federal financial and material support and protection were a necessary condition for Boeing to produce innovative aeronautic products. This support and protection created a positive cash-flow level for Boeing. This enabled Boeing to plan and produce long-term oriented *incremental* aeronautics innovation. Since *incremental* innovation is a characteristic of CMEs Boeing has characteristics of this typology. It can be concluded that the US did create a CME within its LME by enabling Boeing to produce long-term oriented *incremental* innovation.

4.2.2 Neo-Mercantilist Policies

In the introduction it is described that Boeing is protected and supported by the US state with neo-mercantilist policies and laws because Boeing is important for the US national security. In section 3.3.1.1 this is operationalized as follows: first, if Boeing is of significant importance for the US state the state provides financial and material support and protection to Boeing for the production of products from which other companies are excluded. It is expected that this specific financial and material support is a necessary condition for Boeing to develop aeronautics. Second, if Boeing is of significant importance for the US state, US

representatives make clear in public statements that Boeing is protected and supported because Boeing is of significant importance for the national security.

First, the US state does not receive anything of value in return for the support and protection which it provides to Boeing. It is clear that the US state is not manufacturing large civil aircraft or their parts. Instead, Boeing is the only beneficiary of the elements of the programmes that develop new aeronautic technologies (European Commission 2007, 182). In addition, with regard to limited access rights, a myriad of contractual provisions helps to ensure that Boeing can exploit certain US Government-supported technologies to the exclusion of Airbus (European Commission 2007, 183). On the pages, 212, 222, 232, 245, 251, 256, 264, 316, 332, 353, 367, 374, 378, 397 of the EU WTO report the EU demonstrates that the benefits that are provided by the US state and government agencies are specific, meaning that competing large civil aircraft producing firms can not profit from them. It is obvious that these are neo-mercantilist policies and laws that support and protect Boeing.

Second, it is also obvious from the intent that the support and protection is specifically designed for Boeing and has a neo-mercantilist nature:

> ‘‘Working together, we will give Airbus executives many sleepless nights for years to come’’ (Locke 2003).
>
> ‘‘The reason that there is a NASA Langley and the other aeronautics centers is to contribute technology to assure the preeminence of US aeronautics. When Boeing brings out a flagship product like the 777, that uses as many products of NASA technology as are on this plane, it reaffirms the reason that we exist and it is very gratifying to us’’ (Creedon 1998).
>
> The state of Kansas called the subsidies ‘‘Boeing Bonds’’ (European Commission 2007, 2).
>
> ‘‘We have been talking to Boeing and working with Boeing …. They don’t want us to do the near-term things that will impact the next five years. The die is cast for the next five years. The things we have already done are into their products and we’re now looking, what can we do now for a decade from now [sic]. If you look to NASA to impact the sales of Boeing planes … in the next five-seven years, the die is cast. What we’re talking about is moving out, aggressively, in a real partnership’’ (European Commission 2007, 3).

4.3 EU Support and Protection for Airbus

In this paragraph information is presented that illustrates the financial and material support and protection that Airbus received from the EU. Information is presented that shows:

- How much financial and material support and protection Airbus received from the EU states.
- What the impact was of this support and protection on Airbus its innovation and Airbus its production.
- With what intent this support and protection was provided to Airbus by the EU states.

This information is presented by drawing on a WTO report of the US and on Annual Reports of Airbus. First I will provide information that shows EU member state support and protection for Airbus. Second, information is illustrated that gives an impression of the EU-level support and protection for Airbus.

4.3.1 Member State Support and Protection

In their WTO report the US summarize the following EU member state benefits provided to Airbus that are not compatible with WTO agreements: ‘‘The governments of France, Germany, the United Kingdom, and Spain (the Airbus governments) have provided Airbus with $15,000,000,000 in Launch Aid since 1969, enabling Airbus to launch each new model of large civil aircraft and each major derivative’’ (The United States of America 2007, 1).

The US argues that this launch aid takes the form of financial contributions repayable by a tariff on each delivery of the financed aircraft, with lower tariffs imposed on earlier deliveries than on later deliveries. Furthermore, launch aid for the A380, A340-500/600, and A330-200 was provided on state forecasts of substantial exports and in consideration for Airbus its commitment to a level of sales performance that it could meet only with exportation. Additionally, in their WTO report the US demonstrates that these launch aid programmes as well as individual provisions of launch aid to Airbus are financial contributions that provide benefits to Airbus that are not consistent with WTO agreements and shows that these are specific financial and material benefits (The United States of America 2007, 22). This means that other companies are excluded from these benefits. Furthermore, ‘‘the government of

Germany, in 1998, settled a DM 9,400,000,000 debt owed to it by Deutsche Airbus by allowing the company to make a one-time payment of DM 1,735,000,000'' (The United States of America 2007, 1). The US states that Deutsche Airbus owed the German state approximately 9,400 million DM. In that same year, Deutsche Airbus and the German government agreed that Deutsche Airbus should make a one-time payment of 1,735 million DM, for which the state extinguished the leftovers of the debt. As a result, Deutsche Airbus was not obliged to repay the 7,700 million DM difference between the primary amount of the debt and the amount of payment to the government (The United States of America 2007, 1). Furthermore, the French equity infusions to Aérospatiale totaling 7,150 million FF over the period 1987 to 1993 and its transfer to Aérospatiale in 1998 of shares in Dassault worth approximately 5,280 million FF also transferred benefits to Airbus (The United States of America 2007, 2).

In the US WTO report, the US shows that Airbus benefits from financial infusions provided by the German and French governments at moments when a market oriented investor would not have made such investments. The US shows that financial infusions made under such conditions constitute WTO inconsistent benefits and the US shows that the German and French financial infusions at issue are specific, meaning that Airbus is the only beneficiary (The United States of America 2007, 2).

4.3.2 EU Support and Protection

According to the US:

> ''The European Investment Bank (EIB) has provided loans to Airbus totaling approximately Euro 1,600,000,000. The Airbus governments (including regional authorities) have created industrial sites – such as the site created by transforming wetlands at the Mühlenberger Loch in Hamburg and the Aéroconstellation site created by transforming agricultural land in Toulouse – undertaking investments that Airbus itself otherwise would have had to make, which the governments then leased or sold to Airbus without charging for the considerable expense associated with the creation of the sites'' (The United States of America 2007, 1).

The EIB has loaned money to Airbus. According to the US this financing includes a 700 million euro loan for the A380 in 2002, and an additional 1,060 million euro loan provided from 1988 to 1993 for the development of various Airbus models. In its WTO report the US

demonstrates that the EIB loans confer a benefit to Airbus that is not consistent with WTO agreements. More specific, the loans constitute financial contributions to Airbus provided on terms more favorable than those available on the EU market. Furthermore, the US shows that these benefits are specific. It shows that the EIB does not provide the loans automatically, but rather on a individually basis, that each loan is separately negotiated directly with the relevant Airbus Company, and that the amounts of EIB loans Airbus has received are disproportionately large in comparison to the loans other companies received (The United States of America 2007, 76). ‘‘The EC, the Airbus governments, and various regional governments have provided grants to Airbus totalling approximately Euro 3 billion to support research and development’’ (The United States of America 2007, 2).

In its WTO report the US explains that the European Commission and the Airbus states support and protect Airbus by helping to fund its R&D efforts through the provision of grants. More specific: the US demonstrates that financial contributions made according to EU Framework Programs and member state and sub-national R&D subsidy programs established for the specific purpose of funding aeronautic research are WTO inconsistent subsidies and are specific subsidies, meaning that only Airbus can profit from them. Under the Framework Programmes, the EU distributes grants from budgets established specifically for aeronautics research. These grants serve to improve the competitiveness of the European aeronautics industry (The United States of America 2007, 150).

Based on the arguments above the US concludes the following:

> ‘‘If Airbus had been required to fund its aircraft launches without Launch Aid or the other EC and Airbus government subsidies, it would not have been able to launch any of the … models that it has introduced, sold, and delivered to date’. In its almost 40-year history, Airbus has increased its share of the market from zero to 57 percent and has built and delivered more large civil aircraft than Boeing in each year since 2003. Airbus has taken numerous major sales from Boeing in recent years, often through the use of aggressive pricing, which continues to depress large civil aircraft prices despite two years of record demand’’ (The United States of America 2007, 1).

4.3.3 Summary of Main Points

In its WTO report the US argues that the financial contributions that the EU and EU states provided and provide to Airbus are benefits that are not compatible with WTO agreements. It

are specific benefits that are made particularly for Airbus and have adverse effects on the interest of US Boeing. Furthermore, the US regards these subsidies provided to Airbus, as subsidies solely made for Airbus and its competitive advantage. The EU has provided approximately 15 billion euro to Airbus. The US argues in its WTO report:

> ‘‘Looking at the same indisputable facts, the EC attempts to tell a very different story. That story is exemplified by the EC’s explanation that it looks at this dispute through the lens of the ‘specific characteristics’ of the large civil aircraft industry, including its status as ‘one of the last mass employment industries in economically developed countries, with a highly skilled workforce’ and ‘an industry in which a lot of pride is invested, which is considered strategic and is closely interwoven with defense industries.’ In the EC’s view, the massive subsidies provided to Airbus … development and production are justified by these ‘specific characteristics’ of the … industry’’ (The United States of America 2007, 3).

4.4 Analysis Case EU Airbus

Now that the empirical evidence is presented the evidence is analyzed with the help of the operationalized hypotheses presented in section 3.3.1.2. First it is analyzed if the EU does create an exception to its dominant mode of political economy with the help of targeted policies and laws, in the case of EU Airbus. Second, it is analyzed if these policies have a neo-mercantilist nature.

4.4.1 Does the EU Create an Exception?

In the case of EU Airbus it is expected that the EU CME states stimulate Airbus its innovation with financial and material support and protection (independent variable). This support and protection creates a positive cash-flow level for Airbus. This positive cash-flow level enables Airbus to produce products for which *radical* innovation is needed (dependent variable). The support and protection has to be a necessary cause for the development of Airbus its *radical* innovation products (Babbie 1998, 76).

It is evident from the empirical evidence above that Airbus received financial a material support from various CME EU states. However, the products of Airbus which are supported with this financial and material support need *incremental* innovation and not *radical* innovation. In the case of the CME EU member states influence on Airbus it can be concluded that the EU did not create a LME within its CME by enabling Airbus to produce *radical*

innovation. However, the support and protection which Airbus received from the EU states are not CME related but have a neo-mercantilist character. This is elaborated in the next section.

4.4.2 Neo-Mercantilist Policies

In the introduction it is described that Airbus is protected and supported by the EU states with neo-mercantilist policies and laws because Airbus is important for the EU national security. In section 3.3.1.2 it is described that: first, if Airbus is of significant importance for the EU states these states provide financial and material support and protection to Airbus for the production of products from which other companies are excluded. It is expected that this specific financial and material support is a necessary condition for Airbus to develop aeronautics. Second, if Airbus is of significant importance for the EU states EU representatives make clear in public statements that Airbus is protected and supported because Airbus is of significant importance for the national security.

In their first written submission the US demonstrates that the launch aid programmes as well as individual provisions of launch aid to Airbus are financial contributions that confer benefits to Airbus that are not consistent with WTO agreements and shows that these subsidies are specific, only made for Airbus (The United States of America 2007, 22). In addition the US shows that Airbus benefits from equity infusions provided by the German and French governments at moments when a market oriented investor would not have made such investments. It is obvious that these laws and policies protect and support Airbus. Furthermore, according to the US this support and protection was a necessary cause for Airbus to produce several large civil airplanes.

It is also obvious from public statements that the EU states provided support and protection to airbus: the US argues that story is exemplified by the EUs explanation that it looks at this WTO dispute through the lens of the ‘specific characteristics’ of the aeronautics industry, including its status as ‘‘one of the last mass employment industries in economically developed countries, with a highly skilled workforce’’ and ‘‘an industry in which a lot of pride is invested, which is considered strategic and is closely interwoven with defense industries’’. In the EC’s view, the massive subsidies provided to Airbus its development and production are

justified by these ‘specific characteristics’ of the industry (The United States of America 2007, 3).

It can be concluded drawing on the intent of the EU and on the specific support and protection for Airbus, that the EU enabled Airbus to produce large civil aircraft with the help of financial and material support and protection. And that this support was driven by the fact that the EU considers Airbus as a company that is important for the EU national security.

5 Conclusion

Drawing on the content of the previous chapters I present the conclusions of this master thesis. The question: can states create exceptions to the dominant mode of their political economies with the help of targeted policies and laws? is answered. Furthermore, the improvements and the shortcomings of the *Varieties of Capitalism* theory are analyzed and discussed. This chapter consists of the following three paragraphs:

- In paragraph 5.1 it is described that states can create exceptions to the dominant mode of their political economies.
- In Paragraph 5.2 the shortcomings and improvements of the *Varieties of Capitalism* theory are elaborated.
- Finally, in paragraph 5.3, the improvement of the *Varieties of Capitalism* theory and the criticisms with respect to the theory presented in paragraph 2.3 are discussed.

5.1 States Can Create Exceptions

First, the main premises of the *Varieties of Capitalism* theory are summarized. Second, the empirical evidence presented in chapter 4, case US Boeing and case EU Airbus, is described. Third, it is shown that states can create exceptions to the dominant mode of their political economies.

According to Hall and Soskice (2001, 17-21) the political economy is determined by five institutions. These institutions have a liberal or a coordinated nature. These institutions are *complementary* to each other. If one institution has a liberal nature the other institution will also have a liberal nature. Because of this premise the *Varieties of Capitalism* theory is a dualist theory that arranges nation-states either to the LME or to the CME typology. In addition, because of the focus of the theory on the nation-state (this is the analytical unit of the *Varieties of Capitalism* theory) and the *complementarities* premise a nation-state can not be a LME and a CME at the same time (see paragraph 2.2) (Hall and Soskice 2001).

In this master thesis this dualist nature of the *Varieties of Capitalism* theory is questioned. I argue like Crouch (2005, 442) that states can create exceptions to the dominant mode of their

political economies with the help of targeted policies and laws. And, that states create these exceptions in the defense related sectors of their political economies with the help of neo-mercantilist policies and laws (Campbell and Pederson 2001; Crouch 2004). To show this the cases US Boeing and EU Airbus are analyzed in this master thesis.

It is obvious from the empirical evidence presented in chapter 4 that the US is supporting and protecting Boeing and that the EU does the same for Airbus. Both states have specifically designed policies and laws that stimulate the production of large civil aircraft and defense related products of Boeing and Airbus. These policies and laws do not create benefits for other companies. Boeing is the only beneficiary of the US policies and laws and Airbus is the only firm benefitting from the EU policies and laws. It is without doubt that these policies and laws protect and support both companies and have a neo-mercantilist nature:

- Both, the US and the EU make clear in public statements that Boeing and Airbus are vital for their national security and that the companies have to be supported and protected therefore.

- Furthermore, Boeing benefits from specifically US laws and policies from which no other company can benefit and Airbus benefits from the same kind of policies and laws designed by the EU states.

Does the US create an exception to its LME?

According to Hall and Soskice (2001, 47) LME public policies have to be *incentive compatible*. Public policies have to improve the functioning of the market (section 2.2.4). The policies and laws described above are not LME *incentive compatible.* They do not improve the functioning of the market but harm the functioning of the market. A LME government would not do this. Therefore, the policies and laws above are not explained by the *Varieties of Capitalism* theory. Furthermore, it is clear that the patient capital and purchasing arrangements provided by the US state creates a positive cash-flow level for Boeing. This positive cash-flow level, combined with material support of US NASA, enables Boeing to plan long-term productions. Long-term production planning enables Boeing to produce *incremental* innovation. This is a clear characteristic of a CME and not of a LME (Hall and Soskice 2001, 41). The US state enables this *incremental* innovation and thus the CME

characteristics of Boeing. Therefore: it can be concluded that the US does create an exception to its LME. The *Varieties of Capitalism* theory does not explain this exception.

Does the EU create an exception to its CME?

According to Hall and Soskice (2001, 47) CME public policies have to be *incentive compatible*. The policies should enable cooperation between companies, labor-unions and public organizations. However, CME *incentive compatible* policies should not transfer benefits to one company while other companies are excluded. In the case of EU Airbus it is clear that this is happening. This is not explained by the *Varieties of Capitalism* theory. However, these unexpected neo-mercantilist policies and laws do not create the possibility for Airbus to produce *radical* innovation, the innovation associated with the LME typology (Hall and Soskice 2001, 41). Thus, in the case of the EU CME states influence on Airbus it is not evident that the EU creates a LME within its CME. It can be concluded that the EU CME states do not create an exception to their CMEs. Although, the neo-mercantilist policies and laws are not explained by the *Varieties of Capitalism* theory.

5.2 Improvement of the *Varieties of Capitalism* Theory

First, the shortcomings of the *Varieties of Capitalism* theory are elaborated. Second, I will show that these shortcomings are improved with the help of the new hypotheses presented in paragraph 1.2.

The empirical evidence above shows that the US, which is the ideal-type LME, has characteristics of a CME. These CME characteristics are not explained by the *Varieties of Capitalism* theory because of its dualist nature. The two premises of Hall and Soskice below cause this dualist nature of the theory:

- The analytical unit of the *Varieties of Capitalism* theory are nation-states.

- The five institutions that determine the functioning of nation-states are *complementary* to each other.

To improve the *Varieties of Capitalism* theory it is stated in paragraph 1.2 that these two premises of the theory have to be changed. By adding the two hypotheses below to the *Varieties of Capitalism* theory the theory is improved:

Hypothesis 1: Institutions that determine the functioning of a sector of a political economy are *complementary* to each other.

Hypothesis 2: If a sector of an economy is of significant importance for the national security, a state supports and protects this sector of its economy.

The first hypothesis changes the analytical unit of the *Varieties of Capitalism* theory and its *complementarities* premise. With the help of this hypothesis the theory is able to explain that different sectors of a nation-state can have different characteristics. This hypothesis enables the theory to explain that one sector within a nation-state can have a LME nature and another can have a CME nature. This hypothesis also realizes the suggestion of Crouch (2005) who suggests that nation-states should be studied, not to determine to which type, LME or CME, they should each be allocated, but to determine which of these forms can be found within them and in roughly what proportions. In the case of US Boeing the *Varieties of Capitalism* theory is now able, after the improvements, to explain that the large civil aircraft sector has characteristics of a CME.

It is obvious in the case of US Boeing that it is the supportive and protective neo-mercantilist policies and laws that create a CME within the US. The second hypothesis explains why the US uses these policies and laws and explains in what sector of the political economy these kinds of policies and laws are to be expected. With the help of the second hypothesis it can be predicted what sector will tend to the CME typology.

5.3 Discussion of Improvement

In this section it is explained that the two main criticisms presented in paragraph 2.3 and 2.4 are removed from the *Varieties of Capitalism* theory with the help of the two new hypotheses.

According to Allen (2004) and Crouch (2005) a lot of diversity between nation-states remains hidden because of the dualist theory of Hall and Soskice (section 2.3.1). This is the first

criticism. Hall and Soskice also recognize this by pointing towards the differences that exist between the German CME, the Japanese CME and the French political economy. However, they do not use this knowledge to add a new typology to their theory or alter their theory in that it allows differences within one typology. Rather they argue that these cases are situated between the LME and the CME typology and therefore insist that LMEs and CMEs remain the only points which require theoretical definition (Thelen 1997; Soskice 1998; Hall and Soskice 2001). However, because of the *complementarities* premise of their theory their theory fails to explain cases that are situated between the LME and the CME typology, because nation-states can only be categorized to one of these typologies and not to both at the same time. Thus, the argument of Hall and Soskice does not tackle the criticism of Allen and Crouch.

The hypotheses that are presented in the introduction do remove this criticism. By moving the analytical focus of the *Varieties of Capitalism* theory from the nation-state to sectors of a nation-state the theory is able to explain that differences do exist between nation-states. After this improvement the theory is able to explain that one nation-state tends more to the CME typology and another nation-state tends less to this typology. This is possible to determine after the economic sectors of the nation-state under consideration have been analyzed.

Furthermore, Crouch (2005) argues that the diversity within nation-sates remains hidden (section 2.3.2). This is the second criticism on the theory. The diversity remains hidden because of two premises of the *Varieties of Capitalism* theory: the *complementarities* premise and the nation-state as the analytical unit.

The hypotheses that are presented in the introduction remove this second criticism. By moving the analytical focus of the *Varieties of Capitalism* theory from the nation-state to sectors of a nation-state, the theory is able to explain that differences do exist between sectors of a nation-states economy.

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7. Statement of the Author

I declare that, apart from properly referenced quotations, this master thesis is my own work and contains no plagiarism; it has not been submitted previously for any other assessed unit on this or other degree courses.

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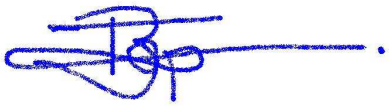

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