Before GNP:

The debate that shaped the most important national statistic of the 20th century

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Abstract

Gross National Product (GNP), it is one of the most common abbreviations in economics and has become a mainstay in discussions of political economics. Gross National Product is the means by which we measure national income. It is an aggregate statistic that represents the value of national production and has become one of the primary indicators of the development of a national economy. As much as it is present in contemporary economics and political economics, the definition and method of compiling national income and GDP are only 70 years old making it a fairly modern construct. In recent years, GNP has become one of the most criticised statistical figures in contemporary society and we can wonder to what extent the criticisms towards GNP today were already familiar to the people who inverted and standardised the concept. This thesis sets out to look at GNP and national income from a historical perspective prior to the standardisation of these concepts. It will discuss the debate between three of the most prominent scholars in the field of national income between the 1930s and 1950s: Simon Kuznets, Richard Stone and Milton Gilbert, about the definitions of national income and the method of national accounting. In doing so it seeks find out how the standardised definitions and concepts for the measurement of Gross National Product and national income came about?

Preface

Seeing the daylight again after being buried under a pile of paper for 5 months, forces me to reminisce on why I bothered tackling the subject of national income in the first place. My love hate relationship with national income and economic growth started approximately 5 years ago during my undergraduate in history, when one of my teachers told me to write about a subject that is close to your own ideals and interests. Being appalled by political rhetoric that seemed to deify economic growth (keep in mind that this was in 2012 when effects of the financial crisis and subsequent recession were still the political talk of the day in the Netherlands) I decided to focus on economic growth and national income. Being a historian, the best way I knew how to study economic growth was looking at the history of the concept which soon introduced me to the history of national income. After cultivating these interests for several modules under the supervision of many wonderful teachers at the University of Utrecht, when time came to choose a subject for my Masters thesis, the choice was actually rather easy.

Customary to most of the bigger essay's and projects I've worked on, the project to write a thesis has hardly been a walk in the park. Halfway through, I honestly regretted ever having the audacity to tackle a subject from a field of science I can't even call my own. And even as my writing is coming to a close, the fear still haunts me that I might have bitten off more than I can chew. In spite of this I can count my self lucky that my thesis supervisor professor Jan Luiten van Zanden expressed the confidence that my efforts were not all bad.

Other than professor van Zanden, I owe a debt of gratitude to my parents, brothers and girlfriend for their continued support, and to the friends that were willing to listen to me going on about 'costs that offset the disadvantages of living in an industrial society', or any other such theory, when it could hardly have been considered the right time nor place. I also need to express my gratitude to my fellow students for both their feedback as well as the many coffee-breaks that kept me going midway through the day. I want to thank Hans Rodenburg in particular for reading my thesis in its entirety and helping me 'kill my darlings'. Finally, I should apologise to all the people I have systematically ignored over the past six months, rest assured that your contribution has been invaluable.

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Abbreviations

AEA:	American Economics Association
BEA:	Bureau of Economic Analysis
DAE:	Cambridge Department of Applied Economics
DoC:	US Department of Commerce
ERP:	European Recovery Plan
GDP:	Gross Domestic Product
GNP:	Gross National Product
NBER:	National Bureau of Economic Research
OECD:	Organisation for Economic Cooperation and Development
OEEC:	Organisation for European Economic Cooperation (predecessor to the OECD)
OPA:	Office of Price Administration
OPACS:	Office of Price Administration and Civilian Supply
SNA:	System of National Accounts
SSNA:	Simplified System of National Accounts
UN:	United Nations
WPB:	US War Production Board

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Introduction

In a 1948 review of the new version of national income statistics presented by the American Department of Commerce, Simon Kuznets, an economist who is often heralded as one of the intellectual fathers of the modern national income concept, warned that this new version of national income was '*destined to become one of the most used and misused sources of economic information.*'[1] Over the last decades, critique towards Gross National Product and Gross Domestic Product (GNP/GDP), the standard measure for national income, has increased manifold to the extent that fellow Nobel laureate Joseph Stiglitz wrote: '*If we have poor measures, what we strive to do (say, increase GDP) may actually contribute to a worsening of living standards.*'[2] It seems that the GNP/GDP concept to measure national income, has fulfilled the prophecy made by Kuznets all those years ago.

From a historical standpoint, discussing the problems surrounding the current GNP/GDP concept of national income cannot overlook the debate that preceded its inception. On several occasions between 1930 and 1953, Simon Kuznets, Richard Stone and Milton Gilbert debated the definitions and concepts of national income, as well as the methods by which it should be estimated. Although in the end, the GNP/GDP concept of national income was standardised, one cannot simply assume that its inventors were ignorant of its many defects. What's more, many of the critiques towards GNP/GDP that are held to be true to today were already known to Kuznets, Stone and Gilbert. Therefore, this thesis will delve into the history of national income. It will discuss the debate between Kuznets, Stone and Gilbert to explain why economists ended up using the Gross National Product and Gross Domestic Product (GNP/GDP) concepts to measure and value the economy.

Prior to delving into this subject, however, this introduction will elaborate on what GNP/GDP actually is and how it is criticised today. This will be followed by a summary of the research that has already been done on the history of national income, in order to explain how this thesis will contributes to the state of the art. After this, an outline of the thesis will be presented to explain how the arguments built into this thesis are made. Finally, this introduction will be closed off by some notes on source material and methodology.

The problem of measurement in our current economy

One could wonder why a thesis in history would seek to discuss a tool used in contemporary economics. To answer this, I will first have to discuss what the concepts of National Income and

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[1] Simon Kuznets, 'National Income: A New Version', *The Review of Economics and Statistics* 30-3 (1948) 151-179. 151.

[2] Joseph E. Stiglitz, 'The great GDP swindle: Chasing GDP growth results in lower living standards. Better indicators are needed to capture well-being and sustainability', *The Guardian* 13 september 2009.

Gross National Product are, why they present a problem for contemporary society and lastly, explain why it so important to look at the history of this concept.

According to the New Palgrave Dictionary of Economics, '*national income corresponds basically to the income accruing to a nation by virtue of its productive activity*'[3]. As there are different ideas about the definition of 'productive', the most common approaches to measuring national income are Gross National Product and Gross Domestic Product or GNP/GDP. Although they are very similar, there is a subtle difference between GNP and GDP: Gross National Product is a measure of economic production by normal residents. Normal residents are considered to be citizens and residents of a nation, even those who live or earn their money beyond the national borders for a year or less. Gross Domestic Product, on the other hand, is a measure of economic activity within a state's boundary. As the Ngram shows, nowadays, GDP has become the most common aggregate, although until the 1990s GNP was more common.[4] For the duration of this thesis, I will refer mainly to GNP as this term is used during the Kuznets, Stone, Gilbert debate and the problems relating to both are similar.

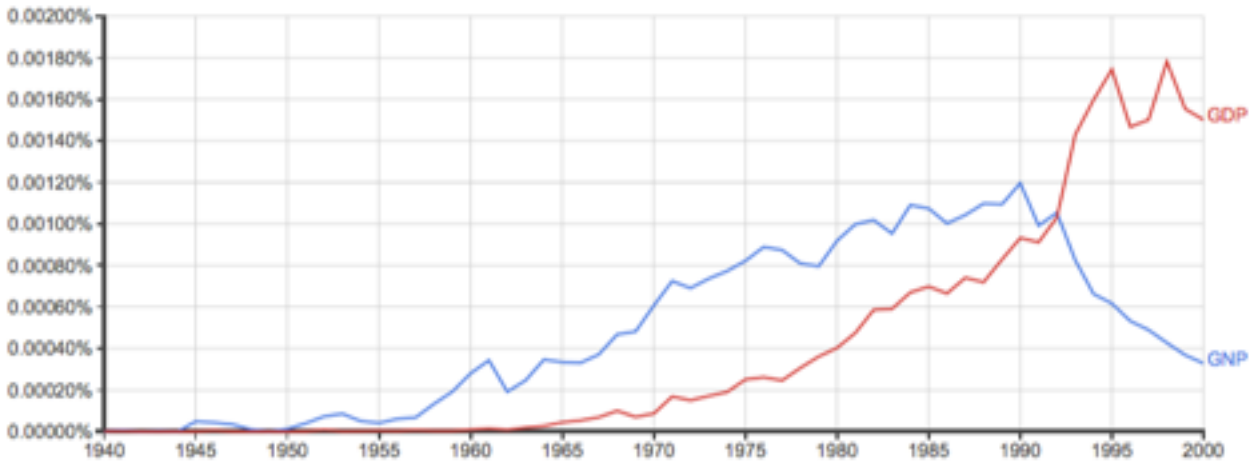

Figure 1: Google Ngram on the use of GNP and GDP between 1940 and 2000.[5]

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[3] Wilfred Beckerman, 'National Income', In: John Eatwell et al. (eds.), *The new Palgrave: a dictionary of economics*, volume 3 (London 1998) 590-592, 590.

[4] There are multiple reasons why GDP became preferred over GNP during the 1990s. The most commonly accepted explanation is that domestic measures include the income produced by multinationals in specific countries, allowing countries to incorporate the parts of the income produced by multinationals within their borders into national income, rather than to the country where the multinationals' headquarters are based. See: Philipp Lepenies, *The Power of a Single Number: A Political History of GDP* (New York 2016) 3.

[5] Google Ngram Viewer, 'GNP,GDP' (version 14 July 2017) https://books.google.com/ngrams/graph?content=GNP%2CGDP&year_start=1940&year_end=2000&corpus=15&smoothing=0&share=&direct_url=t1%3B%2CGNP%3B%2Cc0%3B.t1%3B%2CGDP%3B%2Cc0 (14 July 2017).

GNP can be measured in three different ways which, if measured correctly and accounted for time lags, should all be equal to each other. We will delve deeper into why they should be equal in chapter 3. The first method is measuring *output*: GNP measures all economic output or production by adding the value of all gross sales less intermediate sales. Intermediate sales are the sales related to the input of other companies, these are excluded to prevent duplication. For example: a farmer can sell its grain to a baker and the baker sells his bread to customers. However, if the aggregate of both of their sales are added, the value of grain sold to the baker would be counted twice: once paid by the baker and once by the customer; as such, intermediate sales are deducted from GNP. The second method of measuring GNP, is adding all different types of *income* by normal residents, i.e. the sum of labour income, rents, profits, taxes on production and import (less subsidies), interest, and the consumption of capital (otherwise known as depreciation). The third and last way to measure GNP is by looking at *expenditures*. Which are equal to: household consumption of final goods and services at *factor cost*, private investments, government expenditures on goods and services at factor cost, and net exports which is exports minus imports.

I. Value-added (or production) approach		*2005 share (percent)*
Gross Output (gross sales less change in inventories)		183.5
Less: Intermediate inputs		83.5
Equals: **Value added for each industry**		**100.0**
II. Income (by type) approach		
Sum of:	Compensation	56.6
	Rental income	0.3
	Profits and proprietors' income	17.6
	Taxes on production & imports	7.4
	Less: Subsidies	0.5
	Interest, miscellaneous payments	5.5
	Depreciation	12.9
Equals:	**Total domestic incomes earned**	**100.0**
III. Final demand (or expenditures) approach		
Sum of:	Consumption of final goods and services by households	70.0
	Investment in plant, equipment, and software	16.7
	Government expenditures on goods and services	19.0
	Net exports of goods and services (exports − imports)	−5.7
Equals:	**Final sales of domestic product to purchasers**	**100.0**

Table 1: Three Ways to Measure GNP [6]

As stated in the introduction, GNP has become an often-criticised metric, and for good reasons. The critiques deal mostly with what is not incorporated in the metric. The first major critique towards GNP lies with the division between productive and unproductive labour, this so-called production boundary will be elaborated further in Chapter 1. For now, it suffices to say that productive labour is included in the aggregate but unproductive labour is not, hence it is not valued. In the current metric, domestic or household labour is not considered productive labour. For example: the food cooked and sold in a restaurant is included in GNP, whereas a similar effort of home cooking is not considered productive. As the brunt of household labour is still performed by women, it is said that the distinction between productive and household labour under appreciates labour performed by women. According to scholars, this distinction has strengthened the gendered division of labour, and has held back gender equality.[7]

A second strand of criticism holds that GNP is not an accurate gauge for societal welfare and development. First, GNP does not correctly represent the average income within a nation and even distorts the representation of social inequality. In calculating GNP per capita (the average income per person living in a country) high incomes outweigh the lower incomes which leads to a skewed representation of income inequality. Even in a country with fairly low income inequality such as the Netherlands the median income is lower than the per capita GNP income, which lies between the 6th and the 7th decile.[8] Second, GNP is a measure of monetary value which does not correspond well with sectors like education and healthcare, both of which are important for societal development and welfare. Only the monetary value of investment and payments in healthcare and education are incorporated in GNP, whereas their added value for welfare and human capital are not. On the other hand, spending related to commodities and services that are not deemed beneficial for society are incorporated into GNP. One of the most disconcerting examples of this is the fact that since 2014, in accordance with new standards by Eurostat, the production boundary has shifted to include the unofficial, informal or shadow economy. This means that production related to illegal activities such as drug sales, prostitution, and illegal moonlighting have been included into GNP.[9] One can hardly argue that these forms of production add to the welfare and well-being of society.

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[6] From: J. Steven Landefeld, Eugene P. Seskin and Barbara M. Fraumeni, 'Taking Pulse of the economy: Measuring the Economy', *Journal of Economic Perspectives*, 22-2 (2008) 193-216, 197.

[7] Marilyn Waring, *Counting for Nothing: What Men Value and What women are Worth* (Toronto 1999) 35-36.

[8] Centraal Bureau voor de Statistiek, *Welvaart in Nederland 2016: Inkomen bestedingen en vermogen van huishoudens en personen* (The Hague 2016) 135.

[9] Diane Coyle, *GDP: A brief but affectionate history* (Princeton 2014) 110-111.

Third, on an environmental note, negative externalities associated with GNP growth are not accounted for in the metric. Cutting down forests for wood production at an unsustainable rate can lead to short-term GNP growth. Such depletion, however, is not sustainable, let alone an addition to welfare in the long run. The same can be said for the extraction of many other fossil fuels and minerals which leads to the degradation of the environments in which they are found. In all, GNP is a terrible measure for sustainable development.[10]

Finally, national income measurements in GNP are a terrible marker for increased welfare due to technological advances in society. Although the value of each sold computer is incorporated into GNP, the value of the internet, modern means of communication and a rapid access to information for the increase of societal welfare is not included. Moreover, the value of a current computer with its processing speed far beyond that of a model built only several years ago can be considered much higher than that of its predecessor. Yet GNP only incorporates the value selling prices, which are still comparable.[11] It is extremely difficult to measure to what extent society has developed due to new information technologies. Yet one can hardly argue that welfare hasn't increased due to the communications revolution and the increased capabilities of computer technology.

The fact that our current measurements of national income in GNP or GDP are so flawed leaves one to wonder two things. The most practical and seemingly urgent one of all is the question: are we able to find a measure that does accurately represent economic and societal development and appreciates all of the criticisms mentioned above. This has led to the development of the 'beyond GDP' debate, in which scholars argue over measures that can replace or add to GNP/GDP.[12] From a historical point of view, however, answering such a profoundly difficult question would require answering: how did we come to measure 'the economy' in this apparently defunct manner? Therefore, instead of commenting on the 'beyond GDP' debate, this thesis will ask the latter kind of question and comment on the debate 'before GNP'.

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[10] R. Costanza et al, 'Beyond GDP: The Need for New Measures of Progress', *The Paradee Papers* 4 (2009) 1-37, 9.

[11] Coyle, *GDP*, 83-86.

[12] Early examples in this work are: H.E. Daly and J.B. Cobb Jr., *For the Common Good: Redirecting the Economy toward Community the Environment, and a Sustainable Future Second Edition* (Boston 1994). More recent examples are the better life initiative by the OECD: Martine Durand, 'The OECD Better Life Initiative: How's Life and the Measurement of Wellbeing', *Review of Income and Wealth* 61-1 (2015) 4-17. More separate examples include national projects like: Institutions for Open Societies (Utrecht University) and Rabobank Economic Research, 'Netherlands beyond GDP: A Wellbeing Index' (December 21 2016) https://economics.rabobank.com/PageFiles/22399/Rabobank-UU-2016-Netherlands-beyond-GDP-A-Wellbeing-Index-draft.pdf (viewed 31 January 2017).
Or: Costanza et al, 'Beyond GDP.

Historiography

In recent years, increased attention has been paid to the history of national income. Interestingly, relatively few historians have tackled the subject, leaving it open for mostly social scientists, political scientists and economists. Arguably, the technicality of the subject has led historians to shy away from getting involved with issues surrounding national income. Nevertheless, several histories and strands of history have engaged with national income. According to Benjamin Mitra-Kahn until the beginning of the 21st century most of these histories fell under one of two different categories.[13] The first of which are histories that have aimed to make reconstructions of historical national income time series. This work naturally followed from the increased collection of national income data during and after the Second World War. During the late 1950s, Phyllis Deane started using older historical source material to estimate the size and development of national income during most of the 19th century.[14] A similar but much more elaborate project was led by Angus Maddison, in cooperation with the Organisation for Economic Cooperation and Development (OECD), to make time series of historical national income statistics from all over the world.[15] Although not restricted to national income, this reconstruction of historical statistics is currently still refined and elaborated in the CLIO INFRA project.[16]

The second means by which historians have been involved with national income has been the effort to show how complex and 'more accurate' national income accounting has become over the years. Most notably, Paul Studenski's effort in the late 1950s and early 1960s to create an all-encompassing history of national income in his monumental 'The Income of Nations' (1958) traced back the history of national accounting to its origins with William Petty in the 17th century.[17] This narrative of constantly improving quality and theory of national income has been elaborated by several authors, such as John Kendrick (1970),[18] Carol Carson (1972),[19] Andre Vanoli (2005),[20]

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[13] Benjamin Mitra-Kahn, Redefining the Economy: How the 'economy' was invented in 1620, and has been redefined ever since (PhD dissertation, London school of Economics, London 2011) 277-278.

[14] Phyllis Deane, 'Estimates of National Income in the First Half of the Nineteenth Century' *Economic History Review* 8, 3 (1956) 339-354; Phyllis Deane, 'Estimates of National Income in the Second Half of the Nineteenth Century' *Economic History Review* 9, 3 (1957) 451-461.

[15] Martine Durand and Mario Pezzini 'Foreword', in: J.L. van Zanden et al. (eds.), *How was Life: Global Well-being Since 1820* (OECD publishing 2014) 3-4.

[16] Jan Luiten van Zanden, et al. 'preface' In: J.L. van Zanden et al. (eds.), *How was Life: Global Well-being Since 1820* (OECD publishing 2014) 13-14.

[17] Paul Studenski, *The Income of Nations: Theory, Measurement, and Analysis: Past and Present; a Study in Applied Economics and Statistics* (New York 1958).

[18] John W. Kendrick, 'Historical Development of National Income Accounts', *History of Political Economy* 2-2 (1970).

[19] Carson S. Carol, 'The History of the United States National Income and Product Accounts: The Development of an Analytic Tool', *Review of income and Wealth* 21-2 (1975).

[20] André Vanoli, *A History of National Accounting* (Amsterdam 2005).

and Frits Bos (2009),[21] each adding fresh source material and information on the ongoing development of concepts and tools for the improvement of national income statistics in specific countries and statistical offices.

From a historical perspective, it can be argued that both strands of history suffer from intrinsic flaws. The former project of reconstructing historical time series of national income has not always appreciated that, over the course of history, different concepts and definitions of 'the economy' were in use. Thus, using modern concepts of GNP and national income to study and value historical economic development can be accused for being anachronistic. As for the second strand of history, studying national income estimation as an ongoing linear process, where concepts, theories and thereby the measurement of national income becomes increasingly accurate and complex, can be considered teleological. As it should not be assumed that the current mode of measurement and definition of 'the economy' was the end goal of national income collection throughout history.[22]

Outside of both these strands of history, around the turn of the century, historians of economic thought started questioning who actually invented GNP/GDP. Flavio Comim (2001) argued that it was the cooperation between Meade and Stone that led to the invention of this system of accounting.[23] Unsurprisingly, scholars who work and worked at the Bureau of Economic Analysis (based in the United States) trace the origins of GNP not to England but to the United States and to Simon Kuznets.[24] Geoff Tily (2009) on the other hand argues that Meade and Stone did invent GNP but were strongly influenced and motivated by Keynes.[25] Each of these histories highlighted the developments of individual scholars or at specific institutions but showed less attention to the interaction between these scholars and institutions.

In the past decade or, so a growing number of historians have approached the history of national income differently. This is mainly due to the increased criticism towards the concept of GNP/GDP in the wake of the 2007/2008 financial and economic crisis. After the outbreak of the crisis, president Nicolas Sarkosy convened a panel existing of Nobel laureates Joseph Stiglitz, and Amartya Sen as well as the French economist Jean Paul Fitoussi to discuss moving 'beyond

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[21] Frits Bos, *The National accouts as a Tool for Analysis and Policy: In View of History, Economic Theory and Data Compilation Issues* (Saarbrücken 2009).

[22] Mitra-Kahn, Redefining the Economy, 277-278.

[23] Flavio Comim, 'Richard Stone and Measurement Criteria for National Accounts', *History of Political Economy* 33, 1 (2001) 213-234.

[24] Landefeld, 'Taking Pulse of the economy: Measuring the Economy', 196-195.

[25] Geoff Tily, 'John Maynard Keynes and the Development of National Accounts in Britain 1895-1941', *Review of Income and Wealth* 55, 2 (2009) 331-359.

GDP'.[26] Their report 'Mis-Measuring our Lives' (2010)[27] was a major catalyst for the debate about the contemporary gathering of national income and other statistics, but equally proved to be a catalyst for new histories of national income. Since then, Mitra-Kahn (2011) has written his highly influential doctoral thesis, where he used the changing national income concepts to show how definitions of 'the economy' have changed throughout history.[28] Lorenzo Fioramonti (2013) wrote in a polemical manner about the history of growing discontent with the un-sustainability of GDP.[29] Moreover, Diane Coyle (2014) has written a brief but excellent history of GDP highlighting its evolution and public perception since in the latter half of the 20th century.[30] Aside from these histories about public perception, Philipp Lepenies (2016) has highlighted the use of GDP as a political tool and how political decision-making led to the institutionalisation of GDP in international organisations.[31]

Contribution and research questions

The debate into the history of national income is still relatively young and undeveloped due to its fragmentation over different fields: the reconstruction of historical national accounts, scholarship on the ongoing development of national accounts, history of economic thought, and finally, a public more political history of the concepts and definitions. Although this thesis will by no means unify this debate, I will try to go back to the heart of the matter: namely how the modern national income concepts of GNP was invented and standardised between the 1930s and 1950s. In contrast to the debate on 'who invented GNP', this thesis will not merely try to answer which individual invented GNP, but rather study the debate that led to the standardisation of national income definitions. This will be done by studying the works from and interaction between the most prominent participants of this debate: Simon Kuznets, who is often mentioned as the leading scholar in the theoretical development of national income concepts in America; Richard Stone, who was awarded with the Nobel memorial prize for his fundamental contributions to the development of systems of national accounting; and Milton Gilbert, who was head of the national income unit at the United States Department of Commerce (DoC) and became director of Economics and Statistics at the Organisation of European Economic Cooperation (OEEC). These three scholars should be

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[26] Nicolas Sarkozy, preface to: Joseph E. Stiglitz, Amartya Sen and Jean-Paul Fitoussi, *Mis-Measuring our Lives: Why GDP Doesn't Add Up* (New York 2010).

[27] Joseph E. Stiglitz, Amartya Sen and Jean-Paul Fitoussi, *Mis-Measuring our Lives: Why GDP Doesn't Add Up* (New York 2010).

[28] Mitra-Kahn, Redefining the Economy.

[29] Lorenzo Fioramonti, *Gross Domestic Problem: The Politics Behind the Worlds Most Powerful Number* (London 2013).

[30] Diane Coyle, *GDP A Brief but Affectionate History* (Princeton 2014).

[31] Philipp Lepenies, *The Power of a Single Number: A Political History of GDP* (New York 2016).

regarded as the three most important scholars prior to and during the standardisation of GNP/GDP. Although, for example, Keynes profoundly influenced Richard Stone, he did not specifically outline the means by which national income should be constructed and, maybe in part to his early death, never got involved with the debate on the standardisation of national income concepts. Moreover, Although Meade and Stone published their fist outline of national income together, it was Stone who further developed it's international standardisation whereas from 1941 onward Meade became more involved with countercyclical fiscal policy, international trade and the founding of the International Monetary Fund after the Bretton Woods accords.[32] Therefore, this thesis will mainly focus on Kuznets, Stone and Gilbert, as they were the most prominent scholars involved with the debate on the standardisation of national income concepts.

Although the debate between these three scholars is only scantly mentioned in the literature as the Kuznets, Stone, Gilbert debate.[33] It is highly relevant from a historical standpoint to find out why GNP/GDP has become the dominant measure to value the economy. As the debates between these scholars revolved around these questions of how to value and measure 'the economy and national income'. For contemporary uses studying this debate is of equal relevance as in much of the literature regarding the origins of GNP/GDP Kuznets' ideas and theories of national income are portrayed as 'welfare oriented'.[34] In light of the current debate on the shortcomings of GNP/GDP – especially concerning welfare – it is of importance to find out why the concepts used by Stone and Gilbert came to be preferred over Kuznets' so-called 'welfare based approach'.

To tackle all of this, the central question for this thesis is: how did the standardised definitions and concepts for the measurement of Gross National Product and national income come about? To answer this question meaningfully it has been divided it into two more specific sub-questions. First, it is necessary to understand which different concepts, ideas and theories on national income were debated over. We should therefore ask: what were the different versions and concepts of national income promoted by Simon Kuznets, Richard Stone and Milton Gilbert prior to the standardisation of national income? Second, this thesis aims to explain the reasons that one set of concepts was preferred over another. Therefore, the second sub-question is: why were Richard Stone's and Milton Gilbert's concepts and definitions chosen as the templates for the standardisation of national income over Simon Kuznets' more 'welfare based approach'?

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[32] David Vines and Martin Weale, 'James Meade', *The Economic Journal* 119 vol 541 (F432-F429), F424.

[33] Mitra-Kahn, Redefining the Economy, 263-268.

[34] See for instance: Diane Coyle, *GDP A Brief but Affectionate History* (Princeton 2014) 13-14.
Mitra-Kahn, Redefining the Economy, 239-240
Dirk Philipsen, *The Little Big Number: How GDP Came to Rule The World and What to Do about It* (Princeton 2015) 94.

Chapter outline

Each of the four chapters of this thesis will examine an aspect relating to the questions posed above. The first chapter will deal with the theory surrounding the formation of national statistics and national income in particular. Moreover, it will use the longer history of national income as an introduction to gain insight into the development of theories and concepts of national income. These insights will prove relevant when discussing the Kuznets, Stone, Gilbert debate in chapters 3 and 4. This history will emphasise that 'the economy' is a constructed entity that is subject to change over periods of time. Secondly, by reflecting on the longer history of national income, this chapter will show how national incomes are inherently connected to processes of war, tax and state building. Although the formation of a grand theory on the relationship between state-building and national incomes is beyond the scope of this thesis, it is important to keep this relationship in mind when discussing the evolution and development of national income. It should be noted that the contents of this chapter mainly serve as background knowledge to understand the development of the national income concept prior to the debate that is central to this thesis.

After having assessed the theories and history relevant to discussing the debate on the standardisation of national income, the second chapter will be devoted to extensive introductions of the three scholars central to the debate. This chapter will highlight how each individual scholar was drawn to the field of national income as well as which scholars influenced their theories. Examining their broader academic and personal background as well as achievements outside of the field of national income, will contribute to understanding each's perspective on 'the economy' in general and national income in particular.

The latter two chapters, which are the most extensive part of this thesis, will examine and discuss the three different versions of national income and how they developed over time. Chapter 3 will give a separate analysis of each version of national income, and show whether and how each of these versions developed and changed before and during most of the Second World War. The chapter will show that each of the authors had their own specific views and ideas about national income prior to the standardisation process that occurred after the Second World War. It will also show to what purpose each of these concepts were designed, and which considerations were important in defining their concept of national income.

The final chapter, chapter 4, discusses the standardisation of concepts after the Second World War in depth by looking at the debate waged by Kuznets, Stone and Gilbert over the concepts that were elaborated on in the previous chapter. It will discuss the steps that were taken between the first meeting on the standardisation of concepts in late 1944 until the formation and formalisation of the System of National Accounts by the United Nations in 1953. This chapter will highlight Kuznets' critiques on the concepts that were used and standardised under the leadership of Stone and Gilbert, as well as how Stone and Gilbert responded and reflected on these criticisms. It will provide a nuanced account of what considerations went into the standardisation

process and explain why certain choices were made to continue the efforts towards creating an international template for the collection of national income figures.

When combining these discussions in my conclusion I will reiterate the differences between the concepts used by Kuznets, Stone and Gilbert to answer the first sub-question. The conclusion will further provide not one single explanation for the second sub-question, after all, this history has proven too complex for simple explanations. Rather, I will provide three interrelated answers to understand the complex dynamic that led to the standardisation of the GNP/GDP concepts we know today. These relate to: the relationship between war and the development of national income theory and data; the high positions occupied by Stone and Gilbert in national and international institutions; and finally, the suitability of the different measures as a template for international comparison. Together these will provide more insight into the way in which the standardised definitions of national income came about.

Note on the source material

The theoretical background and biographical discussions of chapters 1 and 2 will predominantly be based on secondary source material due to practical reasons. Where possible more primary material was used in the form of interviews, but also academic work by Kuznets, Stone and Gilbert outside of national incomes in order to elaborate on several key topics, such as Kuznets' seminal paper on 'Economic Growth and Income Inequality' (1955).[35]

The vast majority of primary source material, that was used predominantly in chapters 3 and 4, that form the heart of the discussion about the standardisation of national income, consists of articles in academic journals, research reports, policy reports and chapters in books published by Kuznets, Stone and Gilbert during the 1930s up to the formation of the United Nations System of National accounts in 1953. However, the sheer amount of work published during this time is too vast to handle. Therefore, a selection was made based on several criteria. First, the articles that are deemed most revolutionary and central to each's contribution to the subject matter were included. Secondly, in order to get proper insight into the debate, the works in which the authors comment on each other were given preference. Thirdly, the articles that are mentioned most often when Kuznets, Stone and Gilbert refer to each other were examined. For example: when Gilbert refers to Kuznets' ideas about national income he often cites a more obscure 1937 report of the National Bureau of Economic Research (NBER)[36] rather than the more elaborate discussions in 'National Income and Capital Formation 1919-1938' (1941).[37]

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[35] Simon Kuznets, 'Economic growth and income inequality', *The American Economic Review* 45-1 (1955) 1-28.

[36] Milton Gilbert And R.B. Bangs, 'Preliminary Estimates of Gross National Product 1929-41', *Survey of Current Business* 22-5 (1942) 9-13.

[37] Kuznets, Simon, *National Income and Its Composition, 1919-1938*, Volume 1 (National Bureau of Economic Research 1941).

It can be argued that these academic works and research reports provide a fairly coherent and accurate depiction of the ideas concepts and theories used by each of the authors. Indeed, academic publications should naturally serve this purpose. Nevertheless, several precautions must be taken to fully appreciate and analyse this source material. First of all, it is important to note that, especially when it comes to academic journals, each author chose a specific medium to publish their ideas and thoughts. For example: it should be taken into account that 'the Economic Journal' where Meade and Stone published their first national accounting structure was based in England and edited by John Maynard Keynes. This does not only explain why Stone sometimes uses a vocabulary with 'us' and 'our economy' in his publications in 'the Economic Journal' but without a doubt this journal had a preference for the British method of social accounting. On the other hand, authors could have been asked to draft a certain report by national or international organisations. This must be taken into account as they influence the purpose and tone in which the article, paper or report is written.

A second obvious, but nevertheless important, factor that should be kept in mind is that several of the publications used for this thesis were not written by just one author. The aforementioned article in 'the Economic Journal' was written both by Meade and Stone. Although naturally neither Stone nor any of the other authors would publish something they fundamentally disagreed with, we cannot assume that all the ideas in such articles represent just only one of their authors. As such we must keep in mind whether someone writes on their own or in collaboration with fellow authors. When referring to these works and what they discuss we must refer to the collective that the author was a part of. Lastly, only the ideas and concepts that comply to what the authors wrote on their own should be included in their position in the debate.

Finally, we have to account for the fact that the papers submitted to academic journals were meant to be read by peers and academic economists. On the other hand, the research reports and manuals for the creation of national accounts were meant for policy makers and statisticians working for government institutions. Especially the latter does not necessarily leave space for debate on ontological definitions and as a consequence can be a bit more rigid in tone.

1 National income, war and the state

The national accounts and national incomes we know and use today were not developed in a vacuum. Although they are a modern construct, national incomes have a history that goes back at least as far as 17th century England. Prior to discussing the theory, purposes and discussions on national income in the 20th century, this chapter will elaborate on the longer history of national income starting in the 17th century. This discussion will serve three different purposes. First, it will provide a historical background to the discussions on national income in the following chapters and explain the concepts, theories and breakthroughs prior to the debate between Kuznets, Stone and Gilbert. Second, it will instil the idea that the way in which we value production and income is contextually bound. As a consequence what is defined as 'the economy' changes over time. This realisation is essential to understanding not only the discussions in this thesis but also the problems relating to GNP. Third, this discussion of the history of national income will highlight two structural relationships that characterise the development of national income These include: the relationship between war and national income figures, and the reciprocal relationship between national income and tax development.

To serve these purposes, this chapter will start with a brief summary of several theories from history and political science on national statistics and their relationship with society, policy and governance. This discussion will close with some provisional thoughts on the relationship between war and national income, that will serve as a backdrop for the summary of the development of national income prior to the 1930s. Furthermore, throughout the summary of the history of national income prior to 1930 the three purposes mentioned above will be highlighted and illustrated to provide insight into the development of national income.

1.1 The origins of national accounts

1.1.1 Theories on the origins and development of national income

Several theories and insights from political science and the history of economics can prove useful in understanding the development and uses of national income figures. For some time now, scholars have been interested in the ongoing quantification of the social sciences and in its wake public policy. Both developments are often seen as processes of modernisation. An important insight from this debate can be found in Theodore Porter's 'Trust in Numbers' (1995)[38]. Porter revokes the notion that quantification in social sciences and public policy was merely the result of its success in the natural sciences at the onset of the 19th century. He claims that mathematics is first and foremost a technology designed to deal with distance: distance between scientists across

[38] Theodore Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (New Jersey 1995).

the globe as well as distance from intimate knowledge.[39] Secondly, Porter argues that the objectivity derived from mathematics and numbers is used to combat the notion of subjectivity. Especially 'weak' elites rely on the support of 'objective numbers' when they are challenged: '*Quantification is a way of making decisions without seeming to decide. Objectivity lends authority to officials who have very little of their own.*'[40]

Building on these premises James C. Scott has used the notion of 'governmentality' to show that the desire to govern from a distance has not only led to the use of mathematics and quantification, but has equally changed the way we structure reality. Rather than just use quantification to administrate and govern from a distance, Scott argues that the use of quantification techniques actively shapes the subject of measurement to fit the method of measurement.[41] As such theories became more prevalent in political science and history, the rise of constructivism in the study of international political economy, most prominently echoed by Mark Blyth (2002)[42], argued that ideas about economic theory shape the institutions made to govern them. In essence, constructivists argue that ideas are the prime movers of economic structures and transformations in international political economy, these include ideas of economic value and how this should be measured.

All these theories show the value of national statistics and why they are cultivated and developed over time. Yet despite their value towards understanding how national statistics are used in a more political sense, they do not provide an explanation as to why early modern scholars, predominantly in England, began compiling national incomes.[43] To understand this we might have to look further back towards theories of state building in the Early Modern Period and especially the role of war. Most historians agree that the first national income statistics were made by sir William Petty in his 1665 essay '*Verbum Sapienti*' (word of the wise)[44] which he elaborated on in 'Political Arithmetick' written in 1676. (Both works were published posthumously in 1691 and

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[39] Porter, *Trust in Numbers,* preface ix.

[40] Ibidem, 8

[41] James C. Scott, *Seeing Like a State: How Certain Schemes to improve the Human Condition Have Failed* (London 1998) 1-8.

[42] Mark Blyth, *Great Transformation: Economic Ideas and Institutional Change in the Twentieth century* (Cambridge 2002).

[43] Although it is not peculiar that national incomes were first designed during the early modern period, it is peculiar that this development is so specific to England. I have yet to come across and explanation why it was specifically in England that national incomes were first designed. One can imagine, however, that due to this initial design a tradition was established which led to the further development of such concepts in the Anglo Saxon World. This could explain why Anglo Saxon scholars have been so dominant in this field across the centuries.

[44] Paul Studenski, *The Income Of Nations,* 26.

1690.[45]) It is not a coincidence that these works were drafted halfway through the 17th century in England.

Ever since Michael Roberts coined the idea of the 'Military Revolution'[46] there has been a heated debate on the possible connection between military innovations and state building. Although by now, historiographical books can be written about extent to which a 'Military Revolution' did or did not occur, the idea that ongoing warfare between European states helped the development of state building has remained popular. In general, the theory states that intensive warfare, the rising costs for training and maintenance of standing armies and the other costs coinciding with warfare: fortifications, gunpowder, firearms and canons, necessitated a more central state that was able to collect the funds necessary for war.[47] In other words, state competition encouraged state building in order to pay for the ongoing costs of war.

Although the popularity of the term 'Military Revolution' has diminished somewhat, this theory still underlies many historical explanations dealing with global inequality and the Great Divergence debate. War is even central to Rosenthal and Wong's 'Before and Beyond divergence' (2011) as a causal factor for the differences of economic development between China and Europe.[48] Notwithstanding that big theories usually contain a tradeoff between nuance and explanatory power, the relationship between war and state-building has remained a central motive within historical scholarship. But how does this fit with the history of national income and how could it be justified to discuss debates such as the 'Great Divergence' and the 'Military Revolution' in combination with national income? One of the arguments presented in this chapter is that the development of national income by scholars is a part of the relationship between war and state building. The designers of national incomes consistently argue that their national incomes would allow governments to better asses where and how to tax their population in order to pay for war. One only needs to look at the two earliest examples of national incomes to see this relationship between war, tax and national income.

1.1.2 Petty and political Arithmetic:

William Petty, who is most often attributed as the inventor of national income, was a colourful figure. Petty made a career through academics as he was educated in medicine at the University of Leyden and became a professor of anatomy at Cambridge. Not interested in pursuing his academic career further, he became a physician in the Irish army under Cromwell, where he

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[45] Studenski, *The Income Of Nations,* 26.

[46] See: Geoffrey Parker, 'The "Military Revolution" 1560-1660 —a Myth?', Journal of Modern History 48-2 (1976), 195-214, 195-197.

[47] This theory is summarised more thoroughly and examined by: Parker, 'The "Military Revolution" 1560-1660 —a Myth?', 213-214.

[48] Jean-Laurent Rosenthal and R.Bin Wong, *Before and Beyond Divergence: The Politics of Economic Change in China and Europe* (Cambridge 2011).

amassed land and wealth. Petty was a key figure in establishing the British Royal Society for the Improving of Natural Knowledge, which promoted Francis Bacon's philosophy of natural empiricism.[49] After the demise of Cromwell he retained his stature to be elected into parliament and he was assigned as the chief land surveyor and tax collector of Ireland. His affinity with natural sciences and empiricism, as well as his work as a tax administrator left Petty well placed to design the first ever national income. One of Petty's motives for creating a national income of England was to disprove the 'popular' notion that England was ruined by the revolutions and wars during the tumultuous Cromwell era and had fallen behind Holland and France.[50] Petty set out to disprove the notion of England's decline by quantitative means. He did so by devising the method that he would name 'Political Arithmatick' which meant expressing ideas '*in terms of number, weigh or measure; to use only arguments of sense; and to consider such causes as have visible foundations in nature*…'[51] In other words, to use quantitative mean to study political economy.

Petty argued that the annual income of a nation should be equal to its annual expense. As such he sought to calculate what he would call national income through an estimation of the expenses of people for all basic necessities of life, and multiplying these by the amount of people in England and Wales. He also subdivided this national income into estimations of income generated from land and labour and further subdivided the income from labour according to six different classes. In 'Verbum Sapienti', he estimated the national income of England at £40 million. A figure he adjusted to £42 million in 'Political Arithmetick'.[52] Although Petty did not provide national accounts for France and Holland, he did show that the population of France although bigger than that of England did not match up to the combined population of England and its territories. According to Petty, France could therefore not be wealthier than the British territories combined.

Aside from trying to establish that England was not ruined by revolution, Petty made suggestions for tax reforms based off his estimations of the national income. After the restoration of Charles II the royal treasury was almost depleted. Moreover, the 'Chimney tax' levied per household (or per chimney) that was intended to refill the treasury was highly unpopular. Petty came with a solution by suggesting a universal proportionate tax on all income of 10% that would suffice for the peacetime needs of the country. Moreover, a 17,5% tax could be levied in times of distress of war.[53] Petty argued that such a tax would be more efficient and less burdensome than existing taxes which he deemed irregular.

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[49] Klein, Jürgen, 'Francis Bacon' *Stanford Encyclopedia of Philosophy*. (version Winter 2016) https://plato.stanford.edu/entries/francis-bacon/ (viewed 7 July 2017).

[50] Studenski, *The Income of Nations,* 27-28.

[51] Mitra-Kahn, Redefining the Economy, 57.

[52] See: Studenski, *The Income Of Nations,* 28
Or: Mitra-Kahn, Redefining the Economy, 58.

[53] Mitra-Kahn, Redefining the Economy, 56-59.

This is recurring principle throughout the history of national income. National incomes were often created by individuals to compare their nation's war capacity. Moreover, national incomes were often accompanied by suggestions for tax reform to pay for these wars. To be sure, states were not actively involved in creating and using national incomes until the early 19th century, and only became active collectors of national income statistics during the 20th century. However, to intellectuals such as Petty, war played an immense part in their motivation to collect national income figures. The prospect or existence of war and military conflict increased the need for standing armies and other materials that can be used for the armed conflict. As armies grew and technology became more expensive, states needed to increase funds to be able to pay for the war. Before the advent of well-informed statistical representations of the entire economy, however, it was increasingly difficult for states to: 1) assess how much funds can be extracted from the economy, 2) extract funds from the economy where it is most effective, and 3) assess to what extent a nation is able to wage war with one or multiple opponents.

1.1.3 Gregory King and the time series

The invention of national income can clearly be attributed to William Petty. Yet another innovation, several years after the publication of Political Arithmetick, is rightly labelled by Studenski as a 'neglected milestone'.[54] This milestone came from Gregory King, an unknown government official who worked as a surveyor and mapmaker in the heraldry office. Although King never specifically mentioned Petty in his work, their similarities suggests that King must have read Petty's work.[55] King was more modest than Petty in terms of the representativeness of his figures. '*the attaining thereof (how necessary & desirable so ever) is next to impossible, We must content our selves with such near approaches to it as the Grounds We have to go upon will enable us to make.*'[56] Yet the figures produced by King were far more elaborate that those of Petty. King based his estimations of the incomes of people on a wide variety of tax data such as the 'hearth tax' and temporary levies on land rents, houses and salaries of civil servants. Moreover, to calculate expenses King drew upon internal excises as well as elaborate data on the size and formation of families.

Besides being more elaborate, however, King's innovations were exceptionally ahead of his time. Instead of creating a single annual national income of England, King drafted a time series of the English national income between 1688 and 1695. To fully appreciate King's achievement, one has to imagine that no such time series was created (as far as we know of) until over a century later. But King was even more ahead of his time than this might suggest. He also made projections

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[54] Studenski, *The Income of Nations*, 30.

[55] Studenski shows that King discusses the same subjects and categories in similar terms as Petty. Even though the estimates between the two vary, they arrive at similar conclusions.
Ibidem, 30-31.

[56] Gregory King, cited in: Studenski, *The Income of Nations*, 31.

about the development of national income based on his time series for the years 1696 until 1698, preceding Jan Tinbergen and his model projections by almost two and a half century.[57] As if estimating a time series for the economy and making projections and predictions on their development was not enough, King also estimated the national incomes of both Holland and France in order to show which economy suffered more due to the Nine Years' War. In contrast to Petty, King assumed that the French national income was more than double that of England at the start of the war. However, King estimated that the English population had declined by 50,000 people since the onset of the war, whereas French population had declined by half a million. Consequentially, French national income declined by more than double the amount that English national income had declined according to King's estimates. He therefore concluded that France would sue for peace before England. This again exemplifies the use of national income for scholars to assess the war capacity of nations.

1.2 The production boundary

The first national incomes by Petty and King show that national incomes had a clear purpose: measuring a nation's ability to wage war. Yet one can still ask what is 'the economy' that is measured. For Petty and King this discussion does not seem to have been at the core of their argument. After all, most of their estimates were based on the idea that income is equal to expense and these could be estimated to a certain degree by measuring the size of population. However, one can ask if income and expense equals productivity. One of the most important debates throughout the history of national incomes concerns the productivity of certain types of income or labour. There are few examples throughout history that illustrate this more emphatically than the French physiocrats. Moreover, the physiocrats had a profound influence on Adam Smith who used ideas about the production boundary in his own theories.

1.2.1 Physiocrats and narrower visions of the economy

In spite of the clear English roots of the national income concept, innovations in the concept of what 'the economy' is or was, occurred mainly on the other side of the English Channel. During the 18th century the ideas from a group of French economists became highly influential. Ideas about 'the economy' among scholars within the circle surrounding François Quesnay would arguably influence the way in which people envisioned the economy up to the late 19th century. Although there is little doubt about the later influence of these so-called physiocrats, the dominance of their views in 18th century France has been disputed.[58] As such it might be wiser to study the physiocrats within the context of their debate with proponents of the so-called 'Merchants' system'.

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[57] Studenski, *The Income of Nations*, 33-37.

[58] Mitra-Kahn, Redefining the economy, 169-171.

Much like Petty, Quesnay was trained as a physician and Quesnay too was quite empirically minded. Quesnay's main contribution to economics was his "*tableau economique*" in which he stressed that the economy can be divided in three sectors: the productive or agricultural class, the proprietors, and the sterile class.[59] According to his tableau, the only sector to produce new value was the productive class or the agricultural sector. The sterile and proprietor classes merely reproduced the value of their own labour and hence did add value or wealth to the economy.[60] In order to stimulate the growth of wealth, which could only be achieved through agricultural production, Quesnay suggested a single tax on land rent which would fall on landowners and relieved agricultural producers. According to Quesnay this shift of tax from productive to the proprietary class would stimulate agricultural production and thereby wealth development.[61] Quesnay also supported free trade. In his eyes, free trade of agricultural goods would stimulate demand for French products which would increase production and the economic surplus generated by French farmers.

A second important innovation made by Quesnay in the tableau, was making transactions and the circular flow of these transactions between economic sectors central to his study.[62] Although Petty and King agreed on the principle that income equals expenses, neither of them sought to chart the transactions between one economic sector and another. This idea is vital to the development of sectoral analyses and was even referenced in Ragnar Frisch's earliest attempts to create a model for business cycles.[63] The idea to study transactions was equally central to Stone's conception of the economy as we will come to see in chapter 3.

Quesnay stressed that his theories departed from the so-called 'merchants' system' in France which should not be mistaken for what has come to be known as 'mercantilism' as is done by Pressman,[64] but the ideas of policy makers such as Vincent de Gournay. Contrary to Quesnay, de Gournay argued that there were two productive sectors in the economy: agriculture and industry.[65] Mitra-Kahn has shown that, in spite of the intellectual influence the physiocrats held in France, de Gournay and the proponents of the 'merchants' system' were far more influential in French policy making than the Physiocrats. This was mainly due to the fact that de Gournay was

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[59] Mitra-Kahn, Redefining the Economy, 169-171.

[60] Ronald L. Meek, 'Introduction to Physiocracy' in: Ronald L. Meek (ed), Economics of Physiocracy: Essays and Translations (London 2013) 15-34, 20-21.
Or: Mitra-Kahn, Redefining the Economy, 154-156.

[61] Meek, 'Introduction to Physiocracy', 25-27.

[62] Ibidem, 19.

[63] Ragnar Frish, 'Propagation and impulse problems in dynamic economics' In: *Economic Essays in Honour of Gustav Kessel* (London 1933) 171-205.

[64] Pressman, *Fifty Major Economists*, 25-26.

[65] Mitra-Kahn, Redefining the Economy, 159-161.

part of the Council of Commerce, which was central to the French economic and administrative policy.[66] Such high ranking positions influence the dominance of certain concepts of the economy even in the 20th century as we will come to see in chapter 4. Since both Quesnay and de Gournay were starch proponents of free trade, as well as the fact that they are both French and lived during the same age, explains why some academics have associated de Gournay with the physiocrats in spite of their obvious differences.[67] Moreover, both argued that a nation grew more wealthy when more people were engaged in productive professions rather than unproductive professions, yet they differed on what should be considered productive.

This central tenet, a division between productive and unproductive labour has become known as the production boundary and in terms of national income, it is the most important contribution of the physiocratic theory. However, in some literature, predominantly John Kendrick, a strange understanding of the production boundary and different types national income concepts has been suggested. Both Kendrick and Studenski have divided historical national incomes according to several categories. The comprehensive, material and restricted market production concepts.[68] In doing so they suggest that both Quesnay and de Gournay used a similar 'material concept' of national income. This label (material concept) is also used to describe the national income concept used by Adam Smith and Karl Marx. This simple division overlooks the nuances and differences between for example Quesnay and de Gounay. As such, I would argue it is more important to study the shifting and redrawing of the 'production boundary' for each author of national incomes, rather than dividing all historical national incomes into the three categories suggested by Kendrick and Studenski. This allows the historian to more thoroughly discuss the singularity and essence of national income concepts used by historic authors.

1.2.2 Modern economics?

In spite of all the theories and innovations that proceeded the late 18th century, for a long time historians of economic theory have not looked back at the longer history of economics but focussed on the founding of 'modern economics'. Many scholars, like Phyllis Deane, described the birth of modern economics as the '*systematic study of economics as a distinctive discipline, a specialized technique of analysis, a science or a quasi science.*'[69] This subject was 'definitively' established with the publication of Adam Smith's 'An inquiry into the Nature and Causes of Wealth

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[66] Mitra-Kahn, Redefining the Economy, 169-171.

[67] Ibidem, 161.

[68] Studenski, *The Income of nations*, 11-12.
or: Kendrick, 'Historical Development of National Income Accounts', 284-285.

[69] Phyllis Deane, *The Evolution of Economic Ideas* (New York 1978) 2.

of Nations' (1776)[70]. For a long time, most British economic theory preceding Smith has been referred to a certain extent disregarded as un-empirical 'mercantilism', unaware that it was Smith himself who coined the term mercantilism. Moreover, it has even been disputed that mercantilism, as an economic doctrine, was ever prevalent among 17th and 18th century scholars at all.[71]

All this does not mean that the 'Wealth of Nations' was not revolutionary. In fact, it provided economics with some necessary standardisation and elaboration of the concepts, ideas and jargon which continued to influence debates on productivity for a large part of the 19th century. One of the central features of this debate was the continued distinction between productive and unproductive labour.

'*There is one sort of labour which adds to the value upon which it is bestowed: there is another which has no such effect. (…) A man grows rich by employing a multitude of manufacturers; he grows poor by maintaining a multitude of menial servants.*'[72]

In other words, services do not add to the wealth of a nation but in an economic sense should be subtracted from national income. Smith acknowledges that such a distinction was made earlier by 'Some French authors'[73] but in book IV he argues that Colbert (whom he equates with the so-called 'agricultural system') was wrong to count only agriculture as a source of wealth and ignoring industry as a form of productive labour.[74] As such Smith's idea of material production would include both industry and agriculture more reminiscent of de Gournay's ideas.

A second (underrated) innovation by Smith was the distinction between gross and net wealth:

'*The gross revenue of all the inhabitants of a great country comprehends the whole annual produce of their land and labour; the net revenue, what remains free to them after deducting the expense of maintaining—first, their fixed, and secondly, their circulating capital…*'[75]

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[70] Adam Smith, *An inquiry into the Nature and Causes of Wealth of Nations* (Edinburg 1776) Volume 1 and 2 reprinted (New York 1977).

[71] In fact, the discussions about the existence of 'mercantilism' are at the heart of Mitra-Kahn's thesis. He provides ample convincing evidence that scholars associated with 'mercantilism': Edward Missleden and Thomas Mun. never adhered to the Smith's caricature or any form of bullionist thinking. He further shows how discussions in periodicals such as the 'Mercator' and 'British Merchant' were highly empirical. With authors like Charles Davenant who used, discussed and agued over empirical data. Justifiably, he names this period 'The real "Golden Age" of empirics and political arithmetick'
See: Mitra-Kahn, Redefining the Economy, 45-96.

[72] Smith, *An inquiry into the Nature and Causes of the Wealth of Nations*, (Volume 1) 295

[73] Ibidem, 294.

[74] Smith, *An inquiry into the Nature and Causes of the Wealth of Nations*, (Volume 2) 158-166.

[75] Smith, *An inquiry into the Nature and Causes of the Wealth of Nations*, (Volume 1) 251.

In other words, Smith argued that those expenses that are made to maintain the capital necessary for production should be subtracted from the gross measure of wealth. Production used to maintain the value of capital did not add to the value of production itself. Therefore, net wealth was a more realistic representation of the wealth of nations, '*real wealth, too, is in proportion, not to their gross, but to their net revenue.*'[76]

Clearly Smith's contributions to the theory of national income cannot be underestimated. Smithian ideas dominated the development of national income during most of the 19th century. Accordingly, 19th century economists' definition of the economy revolved around a division of the economy between a productive and an unproductive sector. The development of national incomes during the 19th century, according to Mitra-Kahn, was characterised by the gradual shift of the production boundary according to the changing economy of industrialising countries.[77] This should not be mistaken however as a gradual development to more complete measure of the economy. Rather it should be argued that these scholars measured a different definition of 'the economy'.

1.3 The reciprocity of tax and national incomes

With the theoretical innovations sparked by the physiocrats and the popularisation of some of these concepts by Adam Smith in hand, there was a remarkable boom in the creation of national income statistics during the 19th century. Despite all of his theoretical contributions, however, Smith did not publish any national income data himself leaving this task for the scholars that succeeded him. Although there is a clear relationship between Adam Smith's theories and several of the national incomes produced during these years, there is a different explanation for the increase in national incomes produced in 19th century England as well as the improvement of their quality. This explanation points towards a reciprocal relationship between national income and tax development.

1.3.1 Tax innovation and census data

As the French revolution and the revolutionary wars threatened traditional monarchies, England and France resumed their historical habit of waging war on each other. Much like Petty had suggested over one and a half century earlier, William Pitt the Younger introduced an income tax between 1799 and 1802 to pay for the growing cost of war. Pitt thought that increasing the state debt would burden following generations and sought to pay the war without increasing the national debt too much.[78] The income tax proposal led two different statisticians, the reverent Henry Beeke

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[76] Smith, *An inquiry into the Nature and Causes of the Wealth of Nations*, (Volume 1) 251.

[77] Mitra-Kahn, Redefining the Economy, 183-182.

[78] Ibidem, 186-187.

and Benjamin Bell to each produce national income figures.[79] The former tried to verify and correct the estimates used by Pitt to defend Pitt's income tax proposal. Beeke ended up having to adjust Pitt's estimates and in doing so he produced a very systematic national income reminiscent of King's approach.[80] Bell, however, set out to criticise Pitt's proposal because it exempted labourers with an income below £60,- per year. According to Bell, this would limit the proceeds of the income tax and as a consequence the estimated costs of war could not be met.[81]

The advent of the Napoleonic Wars, also sparked the 1800 'Act for taking an Account of the Population of Great Britain, and of the Increase or Diminution thereof', commonly known as the 'Population Act' or 'Census Act'.[82] Although it was mainly intended as an aid for military recruitment, this act sparked the tradition of decennial censuses in the United Kingdom which formed the basis for new national income estimates. Patrick Colquhoun was the first to use this data to create a national income estimate in 1814.[83] Around 10 years later, after the third census, Joseph Lowe elaborated on these estimates. Lowe also spearheaded a new innovation that would become vital for the comparison of national incomes of different years. He was able to estimate the ratio of tax receipts to national income and thereby create a rough price index. This enabled him to estimate constant prices and thereby deflate his estimates to made them more comparable over time.[84] This innovation is key to the development of 'real' national incomes, vital to measuring economic development and progress. The ideas of deflation and 'real' national income will return in chapters 3 and 4.

Tax changes and census changes during the 19th century were vital to the elaboration on national income data. But not only did tax reforms spark debates which led to the initial creation of national incomes, increasing tax returns and strenuously recording returns through receipts provided estimators with more accurate data for their national income estimates. Although Pitt the Younger's income tax was short lived, the repeal of the Corn Laws in 1846 led to a new introduction of a national income tax, which was made permanent in 1874. These national income tax data and their receipts provided estimators with a rich, but most of all accurate and recent,

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[79] For the sake of argument, these national incomes were not exponents of Smithian economic doctrine. Neither Beeke nor Bell divided the economy between productive and unproductive sectors, as can be seen from their inclusion of professions. They were however most likely familiar with Smith's work.
See: Studenski, *The Income of Nations*, 44, 49.

[80] Studenski, *The Income of Nations*, 43-46.

[81] Ibidem, 46-50.

[82] Parlaiment.uk, '1800 Population Act' (version unknown) http://www.parliament.uk/about/living-heritage/transformingsociety/private-lives/relationships/collections1/parliament-and-the-census/1800-population-act/ (viewed 7 July 2017).

[83] Studenski, The Income of Nations, 104.
or: Kendrick, 'Historical Development of National Income Accounts', 297-298

[84] Studenski, The Income of Nations, 107.
or: Kendrick, 'Historical Development of National Income Accounts', 298,

source for their estimates. William Smee was the first to base part of his national income estimate on such data.[85] Moreover, the rich source material allowed him to make an elaborate breakdown of the national income according to income classes.

All these innovations between Pitt and Smee show the profound reciprocal nature of tax data and national income that is key to understanding the rise of national incomes in the 19th century. Not only were national incomes useful to suggest tax reforms and provide information to enhance tax collection. Accurate records and receipts from tax data and censuses provided national income estimators with the means to create more thorough and elaborate estimates.

1.3.2 Towards the 20th century debate

In spite of all the technical innovations that enhanced the quality of national income estimates, theoretically, no comprehensive alternative to Smithian ideas about productive and unproductive labour was formulated until the late 19th century. Alfred Marshall paved the way for the 20th century debate on national incomes by reintroducing a more comprehensive notion of productivity and wealth.[86] He and his wife Mary Paley Marshall[87] argued that:

'*Wealth may then be said to consist of Material wealth and Personal or non-material wealth. Material Wealth consists of the material sources of enjoyment which are capable of being appropriated and therefore of being exchanged. (…) "Personal" or "non-material wealth" consists of those human energies faculties and habits physical mental and moral, which directly contribute to making men industrially efficient and which therefore increase their power of producing material wealth*'[88]

In other words, wealth and value should be considered more comprehensively, a concept of wealth which would include services.

Alfred Marshal would later elaborate these theories in his seminal 'Principles of Economics'. Much like Smith before him, Alfred Marshall did not produce any estimates of national income of his own. Rather his students, most notably Arthur Bowley, Albert Flux and Josiah Stamp dedicated themselves to estimating the national income according to Marshall's ideas in the United Kingdom. Bowley first devised a concept that he coined 'Whole National Income' which was a basic

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[85] Kendrick, 'Historical Development of National Income Accounts', 299.

[86] To be sure this concept lived on until the fall of the Soviet Union Because Marx copied Smith's distinction between productive and unproductive labour in his 'Theories of Surplus Value' to support his ideas that profits and interests were withheld from labourers by entrepreneurs. This 'material product conception' formed the basis for national income calculation in the communist world. However this debate was not waged alongside the debate between Kuznets, Stone and Gilbert which is why these discussions will not be included into the debate discussed in chapters 3 and 4.
See: Vanoli, *A History of National Accounting*, 100-102.

[87] Also his former student.

[88] Alfred Marshall and Mary Paley Marshall, *The Economics of industry* (London 1879) 6.

accumulation of all wage and non wage income, that he had calculated on the basis of income data from the census bureau.[89] Interestingly, Bowley commented that his total of 'Whole National Income' had no close relation to welfare.[90]

Between 1895 and 1929 these authors produced several national incomes all approaching national income from an income perspective, this means that their unit of measurement was an accumulation of incomes, rather than both income expenditures and production which would become more significant during the debate Kuznets, Stone and Gilbert. However, a significant development was the growing involvement of the census bureau and government in the formation of national income statistics. With the passing of the Census of Production Act in 1906, the British parliament intended to collect more thorough information on domestic production mainly to provide a basis for setting import and export tariffs.[91] Although it was ambitious at first, the act was watered down before passing it. This severely limited the amount of data the census bureau was allowed to collect. As a consequence, throughout the first decades of the 20th century British economists, most notably John Maynard Keynes and Colin Clark lamented 'the disgraceful condition of British official statistics'[92] as will be seen in the following chapter.

1.4 Summary

Despite much criticism towards the quality of national income statistics during the early decades of the 20th century, it should be clear that the concept of national income had a tremendous history before scholars were even able to imagine the international standardisation of national income statistics. By examining the history of national income prior to 1930, this chapter has not only attempted to explain several theoretical achievements in the history of national income to set the stage for the debate that will be studied more closely in chapters 3 and 4, it has equally aimed to show several structural processes that have shaped the development of national income concepts over the centuries. The relationship between war and national income is a profound one, which incentivised many of the developments of national income including its standardisation after the Second World War.

Multiple theories have shown that the way in which governments collect national statistics influences the way in which they govern. Moreover, when it comes to national income, its history suggests that war and international state competition incentivised individual scholars relatively close to power, be they part of parliaments or otherwise involved with governments, to accumulate

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[89] Tily, 'John Maynard Keynes and the Development of National Accounts in Britain 1895-1941', 334-336.

[90] Ibidem, 338-339.

[91] Paul Smith and Stephen Penneck, '100 years of the Census of Production in the UK' (version 2009) https://www.researchgate.net/publication/23536375_100_Years_of_the_Census_of_Production_in_the_UK (viewed 5 july 2017) 2.

[92] Tily, 'John Maynard Keynes and the Development of National Accounts in Britain 1895-1941', 343.

data on national income and national production. They did so for two reasons. First, to assess how much tax can be collected and suggest reforms to do so more efficiently. Second, to assess whether states were able to outlast their competitors economically while waging war. The examples of Petty and King clearly show these motives of war and state competition, and it this is equally reflected in the discussion of Pitt's income tax during the early 19th century. Another structural process became more apparent during the 19th century, when government and tax reform influenced and stimulated the creation of more thorough national income data. I would argue that the process of increasing the efficiency of taxes and the process whereby national income statistics become more elaborate reinforce each other. In short, more data from censuses and tax receipts increases the accuracy of national incomes. On the other hand more accurate national incomes can contribute to the creation of more effective tax schemes.

Finally, although it has already been mentioned during the introduction, this chapter illustrates how changing economic contexts change the definition of 'the economy' and thereby what is valued and measured. The discussion on the shifting production boundary from the French physiocrats, to Smith's ideas about unproductive and productive labour and Marshall's material and personal wealth, shows that definitions of economic value and productivity constantly change. As these ideas about value and productivity change so do national incomes, what they measure and how these commodities and services are valued. When discussing concepts such as national income, GNP and a definition of 'the economy' that has been dominant and solidified for 70 years, it is important to continuously emphasise that these concepts and definitions are bound to the ideas of productivity and economic value prevalent at the time they were invented. What this means for the current 'beyond GDP' debate will be elaborated on in the concluding paragraph of this thesis.

2 The backdrop of three national incomes

The effort in this thesis to understand the current concept of GNP/GDP and how it became the dominant internationally accepted standard to compile and present national income figures, requires that the alternative theories and concepts of national income between the 1930s and 1950s are examined. Most of the developments in national income over the course of history were individual efforts, in some cases linked to debates with other scholars. To a certain extent this could also be said about Kuznets, Stone and Gilbert. The ideas and efforts of each of these individuals exerted in larger institutional contexts were imperative to the standardisation of national income. Understanding the alternative concepts of national income, requires insight into the personal and academic background of the scholars responsible for the invention of GNP. By showing which scholars influenced Kuznets, Stone and Gilbert we can also put their ideas into more longstanding academic traditions. Thus, this chapter seeks to answer how the scholarly and personal backgrounds of each of these authors influenced their ideas about 'the economy' and national income? Moreover, it asks whether their work in other fields of economics both prior and after their work on national income can help explain their ideas about national income. By examining these questions, this chapter will set up a broad basis for the discussion of the different concepts of national income explained in chapter 3.

Because of the subject matter in this chapter, each section will contain a chronological oversight of the backgrounds of each author. Naturally, this chapter includes a discussion on the education of each of these scholars and the people who appeared to have influenced each of them most. Discussions on the national incomes of each author will be avoided as these are reserved for the final two chapters. However, this chapter will elaborate on some of the positions and institutional contexts in which their work on national income was produced.

2.1 Simon Kuznets, the careful empiricist

Image 1: Simon Kuznets (date unknown).[93]

For an economist as well known as Kuznets, it is surprising that fairly little attention has been paid to his background and the way in which his ideas were shaped. It is even more surprising as this little-known history seems quite a compelling narrative. Kuznets himself can largely be held accountable for the lack of knowledge of his background, youth and character. As E. Glen Weyl, explains in his introduction of the (until then) unpublished works of Simon Kuznets on the economic history of Jewish migrants, '*Kuznets laboured assiduously to maintain a wall of separation between*

[93] Robert Fogel, 'Simon Kuznets 30 April, 1901 - July 9, 1985', *The National Academy of Sciences Biographical Memoirs* 79 (Washington 2001) 203-231, 203.

the two facets of his life.'[94] He clearly separated his public/academic and his personal family life. For example: he devoted just one sentence to his youth and education in Russia in his Nobel Biography.[95] What's more, Kuznets appears to have separated different strands of his academic and personal life as strenuously as he separated his academic and private lives. Although he never made a secret of his Jewish decent, he built a secular cosmopolitan life for his family in the United States apart from his Russian Jewish background. He never taught his children Russian nor Yiddish and shared very little about his youth or his cultural heritage.[96] Finally, according to Weyl, Kuznets never expressed any strong political and political economic ideas other than views on open immigration and support for the existence of the Israeli State. Due to this mystery surrounding Kuznets' past and ideas, relatively little has been written about his life and ideas in spite of the major influence his work has had on 20th century economics. Obviously, this complicates any effort to connect his personal history to his economic thought. Though complicated, it does prove worthwhile to elaborate on Kuznets' life for some time.

2.1.1 A turbulent youth

Simon Kuznets[97] was born in Pinsk, in modern day Belarus, into a well-off Jewish Family of bankers and furriers in 1901. Prior to the Second World War, the vast majority of Pinsk's inhabitants were Jewish and it was a known hotbed for Zionist activism.[98] Probably, Kuznets was too young to have been exposed to these ideas directly. However, he retained a close personal relationship with this Jewish background which is especially visible in his work on the history of Jewish immigrants. In fact, it has even been suggested that this work primed his thoughts on the relationship between urbanisation, industrial transition and economic inequality. However, such claims remain relatively speculative.[99]

From a scholarly perspective it is best to pick up his history in Kharkiv where he was educated from 1916 until the gymnasium was closed down due to the Russian Revolution. He

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[94] Glen E. Weyl, 'Simon Kuznets, Cautious Empiricist of the Eastern European Jewish Diaspora', (version 2010) http://home.uchicago.edu/weyl/Kuznets_Final_11_10.pdf (viewed 21 february 2017) 2.

[95] Simon Kuznets, 'Simon Kuznets - Biographical' (1971) http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1971/kuznets-bio.html (viewed 28 March 2017).

[96] Weyl, 'Simon Kuznets, Cautious Empiricist of the Eastern European Jewish Diaspora', 44.

[97] The name Kuznets translates to 'blacksmith' however it is assumed that the family adopted the name of this profession in order to hide their Jewish background. Ibidem, 6.

[98] Ibidem, 6.

[99] Kuznets' works on jewish history has only recently been removed from obscurity. Most of it was not published during Kuznets' lifetime and several works were only published in Hebrew. They provide some insight into Kuznets' relationship with his heritage and how this could relate back to his work for instance his views on Human Capital or inequality. Glen E. Weyl Makes this in his introduction to the publication of Jewish histories:
For more see: Simon Kuznets, *Jewish Economies: Development Migration in America and Beyond,* Stephanie Lo and E. Glen Weyl (eds.) (New York 2011).

continued to live and educate himself at the Commercial Institute of Kharkiv and became a section head at the bureau of labour statistics in the Ukraine which introduced him to the collection and refinement of national economic statistics. In Kharkiv he was most likely exposed to the Bundist school, an anti-Zionist movement of Marxists within the Jewish community.[100] Radically different from regular scholarly Marxism, this school was strictly non-teleological and non-deterministic. According to economists Vibha Kapuria-Foreman and Mark Perlman the ideas Kuznets was confronted with during this time sparked his lifelong interest into the relationship between economic development and income distribution.[101]

While Kuznets was studying and working in Kharkiv, his father and brother moved to the United States. Simon remained in the Ukraine to take care of his sickly invalid mother and younger brother. In 1921 a large portion of Ukrainian Jews were deported/emigrated to Poland, as was Kuznets along with his family. During this journey his mother passed away, presumably of a disease resembling multiple sclerosis, after which he and the remainder of his family followed his father and brother in late 1921 and arrived in New York in 1922.[102] Upon his arrival in the United States he continued his education at Columbia University. Due to his talents, the fact that he had already received some higher education and had experience in labour statistics, he was able to obtain his BSc and MSc within two years (1923 and 1924) and it only took him another 2 years to obtain his PhD under the supervision of Wesley Clair Mitchel. Afterwards, he was hired by Mitchell to work at the *National Bureau of Economic Research* (NBER) in 1927.

The NBER was, and is to this day, a private non-profit organisation founded in 1920 with the specific aim of doing research into the quantitative side of economics. The organisation desires to remain impartial and non-partisan and therefore abstains from direct policy recommendations, restricting itself to empirical research.[103] The NBER made a first approximation of national income in the United States under the leadership of Mitchell, Willford I. King, Oswald W. Knauth, and Frederick R. Macauley based on production and limited tax data.[104] Eventually, these researchers even divided the national income according to state boundaries in 1925, a remarkable achievement for that time.[105] Kuznets did not immediately join this project. Rather, until the 1930s, he worked mainly on 'business cycles' and economic growth, Kuznets studied secular and

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[100] Vibha Kapuria-Foreman and Mark Perlman, 'An Economic Historians Economist: Remembering Simon Kuznets', *The Economic Journal* 105 (1995) 1524-1547, 1526.

[101] Ibidem.

[102] Weyl, 'Simon Kuznets, Cautious Empiricist of the Eastern European Jewish Diaspora', 7-8.

[103] Solomon Fabricant, 'Towards a firmer basis of economic policy: The founding of the National Bureau of Economic Research' (version 1984) http://www.nber.org/nberhistory/sfabricantrev.pdf (viewed: 17 march 2017) 2-3.

[104] Ibidem, 11-14.

[105] Carson, 'The History of the United States National Income and Product Accounts', 154-155.

seasonal cycles and patterns in business cycles to discover what '*long term changes can be observed in various national branches of production and trade.*'[106] One of his aims appears to have been to analyse data that could help create measures that reduce the effect of (seasonal) shocks in employment and income, predominantly in agriculture.[107]

During the entirety of his doctoral research and his first years at the NBER, Kuznets was profoundly influenced by Mitchell. In fact, Mitchell is the only scholar Kuznets mentioned during his Nobel autobiography in which he claims to '*owe a great intellectual debt*'[108] to him. Mitchell was one of the founding members of the NBER and was known amongst economists mainly for his work on statistics and business cycles. Moreover, Mitchell was keen to point out that economic theory however detailed should never lose sight of the whole of society and relate back to the societal context.[109] Furthermore Mitchell preferred testable hypotheses over deductive theorising. Although these hypotheses included quantitative data, Mitchell was wary of using too much mathematics and mathematic models to analyse society and economics. Without question Mitchell conveyed these ideas unto Kuznets during the period they worked together. In Kuznets' 1949 obituary of Mitchell he wrote:

'*It is important to recognise how strong today is the temptation to withdraw into the security of imaginary models, only distantly relevant to historical reality — regardless of how mathematically elaborate they may be. It is important to see how ever present how ever present is the opposite temptation — to elaborate and check details without concern as to their place in the broader framework.*'[110]

In 1931 Mitchell asked Kuznets to take charge of the national income project at the NBER. To which Kuznets hesitantly agreed. However, it was not until a few years later that Kuznets' work would really start to pick up steam. In June 1932 as a consequence of the economic crisis of the 1930s the senate of the United States approved a resolution assigning the Department of Commerce (DoC) to produce:

'*estimates of the total national income of the United States for each of the calendar years 1929, 1930, and 1931, including estimates of the portions of the national income originating from agriculture, manufacturing, mining, transportation, and other gainful industries and occupations,*

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[106] Kapuria-Foreman and Perlman, 'An Economic Historians Economist', 1528.

[107] Ibidem, 1529

[108] Simon Kuznets, 'Simon Kuznets - Biographical' (1971) http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1971/kuznets-bio.html (seen: 28 March 2017).

[109] Fogel, 'Simon Kuznets 30 April, 1901 - July 9, 1985', 208-209.

[110] Simon Kuznets, 'Wesley Clair Mitchell, 1874 - 1948: An Appreciation', *Journal of the American Statistical Association* 44 -245 (1949) 126-131, 131.

and estimates of the distribution of the national income in the form of wages, rents, royalties, dividends, profits, and other types of payments.'[111]

As the DoC lacked the expertise to lead such a project themselves, they turned to turned to Mitchell and the NBER who then assigned it to the man currently in charge of the national income estimates: Simon Kuznets.[112] Leading a handful of scholars, Kuznets produced a time series of the development of national income between 1929 and 1932 in 1934 in cooperation with the DoC. After 1934 he took a step back from the DoC and returned to the NBER, leaving Robert Nathan (his assistant on this project) in charge. At the NBER he elaborated on this work in 1937 when he estimated the national income between 1919 and 1935. And went even further in 1939 when he produced figures for 1919 until 1938. This work along with his contribution to the 'Encyclopaedia of the Social Sciences' on national income in 1935 were defining contributions to the study of national income in the United States. And until 1941/42 both the NBER and the DoC held on to the definitions and ideas set out by Kuznets during the early 1930s.[113]

After the war broke out, Kuznets, like many economists, was enrolled into government projects to advise on policy and help stimulate the war effort.[114] Kuznets started working at the planning committee of the 'War Production Board' (WPB) along with Nathan. At the planning committee, they were responsible for the understanding of the productive capacity of the United States and how adjustments could be made to increase wartime military production. Here they equally had the task of testing the feasibility of production aims set out by the White House, as well as explain why certain demands made by the president would be impossible.[115] Even though during and after the war Kuznets continued to be involved in the academic debate on national incomes, he ceased to be actively involved in the production of national income figures at the DoC. Moreover, it appears his attention began to shift back to questions nearer to his heart.

2.1.2 Human capital and income inequality

Two main subjects stand out among Kuznets' work after the war which illuminate his main research interests. Starting in the late 1930s, Kuznets collaborated with a young Milton Friedman at the NBER on the study of professional incomes. Two assumptions arising from this work show Kuznets' ideas about human capital. The first of which was the idea that occupational licensure decreased competition in the job market. The second was to see educational choices as an

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[111] Carson, 'The History of the United States National Income and Product Accounts', 156.

[112] Ibidem, 156-157.

[113] Mitra-Kahn, Redefining the Economy, 243.

[114] James G. Lacey, *Keep from all thoughtful men How U.S. Economists won World war II* (Annapolis 2011) 32-33.

[115] Kapuria Foreman and Perlman, 'An Economic Historians Economist', 1534-1535.

investment in human capital.[116] The second subject Kuznets eventually devoted most of his attention to, was the relationship between economic growth and inequality. The latter subject reveals a vastly more ambitious project compared to the rest of his work. This shows a more thorough interest of Kuznets'. Along with his earlier work on secular and seasonal shocks in employment and income, this characterises Kuznets' ideas about the relationship between economic growth and welfare.

One of the best examples of this work and his ideas came with his presidential address to the American Economic Association (AEA). At the beginning of his address he posed two significant questions. '*Does inequality in the distribution of income increase or decrease in the course of a country's economic growth?*'[117] and '*What factors determine the secular level and trends of income inequality?*'[118] Although usually, the aims of Kuznets' were fairly modest to guarantee the empirical soundness of his claims, the aims set out in 'Economic Growth and Income Inequality' (1955)[119] were extremely ambitious. He did not merely propose to look at income inequality as it is and how it shifts. He equally sought to find out whether people shift from one ordinal group, say deciles or quintiles, to another.[120] Moreover, he intended to look at the difference between migrants and residents and their socio economic mobility. Finally, he proposed to look at generational shifts in inequality i.e. discrepancies between the income of people from one generation compared to their decedents. Aware of the vast gaps in data and his claims, which were relatively unnatural when looking at Kuznets' earlier work, he referred to these tasks as '*a statistical economist's pipe dream*'[121] and he apologised for the '*meagreness of reliable information he presents*'.[122]

Despite the scantiness of his data, Kuznets proposed a theory of economic development and income inequality which is better known as the 'Kuznets U hypothesis' or the 'Kuznets curve'. In short, economic development in terms of industrialisation and urbanisation are characterised by an initial increase in inequality. This increase is caused by higher income inequality in urban areas in comparison to rural areas, even though incomes in general are higher in urbanised areas. Moreover, the inequality between the lowest income in rural areas and highest income in urban

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[116] Weyl, 'Simon Kuznets, Cautious Empiricist of the Eastern European Jewish Diaspora', 34-40.

[117] Kuznets, 'Economic Growth and Income Inequality', 1.

[118] Ibidem.

[119] Ibidem.

[120] In ordinal representations of data, the data is grouped along categories determined by the hight of one variable. For example, if one seeks to study income and income inequality, the data on income is grouped in deciles determined by the size of income. The bottom decile represents the 10% of people with the lowest incomes and the top decile (10%) represents the people with the highest incomes.

[121] Kuznets, 'Economic Growth and Income Inequality', 2

[122] Ibidem, 26.

areas increases the national gap. As economic development progresses, income inequality declines as a result of increasing wages and increasing real income due to higher productivity.[123] However, Kuznets remained critical of increasing income inequality to promote development for relatively underdeveloped countries. '*Can the political framework of the underdeveloped societies withstand the strain which further widening of income inequality is likely to generate?*'[124] It would seem fair to argue that Kuznets saw this increasing inequality as a necessary initial evil that would resolve itself. However, this evil should be continuously monitored to make sure that it does not do harm to the political development nor the population of developing countries during economic development.

2.2 Richard Stone, (Torchbearer of Keynesianism)

Image 2: Richard Stone (1958).[125]

[123] Kuznets, 'Economic Growth and Income Inequality', 18-20.

[124] Ibidem, 25.

[125] Anthony Barrington Brown, 'Sir (John) Richard Stone, 1958.' National Portrait Gallery (version 2010) http://www.npg.org.uk/collections/search/portraitLarge/mw216007/Sir-John-Richard-Stone (viewed 13 July 2017).

In contrast to Kuznets', the youth and early education of John Richard Nicholas Stone, better known as Richard Stone, was not all that exciting nor interesting for current purposes. He was born in 1913 to an upper middle-class family and was meant to pursue a career in law, following in his father's footsteps. Richard Stone started his study in law in 1931. However, the subject couldn't spark his interest and he has not '*opened a law book after Christmas 1932*'.[126] Instead, Stone looked into, at the time, popularised economic literatures such as Lenin, Marx and Irving Fisher. After failing as a law student, for obvious reasons, Stone finally pursued his true interest in economics. Making this switch during the 1930s, his motives were quite straightforward.

'*As we had been sinking into the Great Depression for some years, youthful inexperience and innate optimism combined to make me think that if there were more economists the world would be a better place.*'[127]

2.2.1 A Cambridge economist

Without a doubt, few places in the world would have been better suited than Cambridge for Stone to pursue his interests in the field. At the time, people who were or were to become major economists studied and worked at Cambridge. Most prominent of whom were obviously John Maynard Keynes and Arthur Pigou, but other economists such as Joan Robinson and Richard Kahn, whom Stone admired for their mastery of theoretical economics, also worked and studied at Cambridge. However, Stone was not particularly interested in economic theorising, he preferred to look at the application of economic theory and empirics. As such, Stone was naturally drawn to Colin Clark who taught statistics at Cambridge. Clark profoundly influenced the young Richard Stone and became both a mentor and a lifelong friend.[128]

Colin Clark himself was not trained in economics. Rather, he received his education in chemistry at Oxford. Much like Stone, he became interested in economics and started attending lectures and events about economic policy during his studies and work in another field. However, being a natural scientist, Clark was appalled by the lack of empiricism behind economic theory at the time. As such, he started devoting his time to the collection and preparation of economic data. This work was deemed so impressive at Oxford that he was awarded a place at the National Economic Advisory council alongside Keynes and Pigou. However, Clark grew dissatisfied with politicians for not listening to his and other economists' advice, something Keynes could relate to. After he withdrew from the council, Keynes and Pigou, recognising his abilities, secured him a

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[126] Richard Stone and M. Hashem Pesaran, 'The ET Interview: Professor Sir Richard Stone' *Econometric Theory* 7-1 (1991) 85-123, 87.

[127] Ibidem, 88.

[128] Stone and Pesaran, 'The ET Interview', 88.

place as a lecturer in statistics at Cambridge.[129] Here Clark would flourish for a short time. He produced estimations of the development of British national income between 1924 and 1931, supplied Keynes with the empirical data to support the 'General Theory of Employment Interest and Money' (1936)[130], and wrote his methodological book on national incomes 'National Income and Outlay', in which he created a method to calculate a national income following the concept defined by Alfred Marshal.[131] It was in this work that he devised the revolutionary method of estimating national income along three lines: output, income and expenditure.

Stone and Clark shared an admiration for William Petty and an aversion for economic theorising without empirical backing. According to both, '*theory and facts were too widely separated*'[132]. In spite of his academic prowess, Stone did not foresee an academic career for himself after his graduation, and started working for an insurance firm. When Clark, frustrated with the university hierarchy and the lack of financial and personal support for his project from the government and the university, left to become financial advisor in Queensland Australia in 1937, he left one of his side projects 'Trends', to Stone and his first wife Winifred Mary Stone. 'Trends' was a monthly feature commenting on graphs, time series and statistics of the British economy published in 'Industry Illustrated'.[133] His work on the empirics and data in 'Trends' removed Stone from obscurity and reintroduced him into economics scholarship. In part due to his involvement with Trends and his history at Cambridge, he was offered a job at the Ministry of Economic Warfare when the Second World War broke out.

2.2.2 Enter Keynes

It is here that both politics and John Maynard Keynes become important in discussing why Stone started working on national income alongside James Meade in 1940. Prior to the war, Keynes devised a plan to fund the war effort which he drew up in his seminal essay 'How to Pay for the War' (1940)[134]. In short, Keynes argued that in order to wage war the government had to increase wartime production to unprecedented levels, which in turn required a massive surge in spending. Although the increased production and spending would increase employment and earnings, it

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[129] Lepenies, *The Power of a Single Number,* 33-35.

[130] John Maynard Keynes, *The General Theory of Employment Interest and Money* (Cambridge 1936, Reprinted 1957).

[131] Ibidem.

[132] Stone and Pesaran, 'The ET Interview', 89.
See also: Graham Pyatt, 'In memoriam Richard Stone', *Review of Income and Wealth* 38-2 (1992) 245-248, 245.

[133] M. Hashem Pesaran, and G.C. Harcourt, 'Life and Work of John Richard Nicholas Stone', *The Economic Journal* 110-461 (2000) F146-F165, F148.

[134] John Maynard Keynes, *How to Pay for the War: A Radical Plan for the Chancellor of the Exchequer* (New York 1940).

would equally increase demand for scarce resources required for the war effort. Naturally, this increase in demand and earnings would spark massive inflation. Aside from this inflationary problem, after the war was over, production and spending would decline. This would increase unemployment, decrease aggregate demand and lead the economy into a postwar slump.[135] To tackle both of these problems Keynes suggested an ingenious plan. He proposed that a portion of all earnings should be deterred for the duration of the war, in order to combat inflation and increased consumption. This backpay would be made available after the war in order to stimulate consumption and prevent the postwar slump.[136]

In early 1940 Keynes forwarded his plans to bankers and economists and gradually gained their support. However, politicians were hesitant to follow Keynes' ideas, much to his dismay. In correspondence Keynes would lament those '*bloody politicians whose bloody minds have not been prepared for anything unfamiliar to their ancestors*.'[137] However, his efforts did encourage the government to offer him a position at the Treasury between July and August of 1940. Although he was reluctant to work there as it interfered with his responsibilities at Cambridge, he accepted as it would increase his ability to influence the chancellor.[138] He was not mistaken. As Moggridge describes it:

'Once Keynes was regularly inside the Treasury, he gained a marked increase in opportunities and potential influence. In addition to his network of friends, acquaintances, former students and colleagues, as noted above, he now had day-today access to official papers and Treasury officials. He had no formal position in the hierarchy: 'he was just "Keynes", free to shoot at anybody - anybody, regardless of rank, was free to go to him with his troubles.'[139]

At the treasury Keynes convinced Austin Robinson, who had become one of the economic advisors to the war cabinet, to hire James Meade with the purpose of creating more elaborate statistics on national income necessary to execute Keynes' plans. Initially Meade was meant to create the design the system of national accounts. However, Meade required the assistance of someone more empirically minded to help him with his calculations and analysis. Therefore, Stone was hired to fill in the boxes created by Meade.[140] However, the system they created ended up becoming the result of a more joint enterprise. As Angus Deaton describes it:

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[135] Keynes, *How to Pay for the War*, 1-8.

[136] Keynes, *How to Pay for the War,* 27-51.
See Also: Tily, 'John Maynard Keynes and the Development of National Accounts in Britain 1895-1941', 347-348.
Or: Donald Edward Moggridge, *Maynard Keynes: An Economists Biography* (London 1992) 631.

[137] Moggridge, *Maynard Keynes*, 633

[138] Ibidem, 636, 638

[139] Ibidem, 639.

[140] Angus Deaton, 'John Richard Nicholas Stone 1913-1991', *Proceedings of the British Academy* 82 (1993) 475-492, 478-479.

'*Although the original conceptual framework was that of the older man (Meade), the process of converting the theory into reality raised an endless series of conceptual as well as practical questions, and what had started out as Stone assisting Meade turned into a joint enterprise in which neither man could ever separate his contribution from the whole.*'[141]

2.2.3 Postwar

We will return to the theoretical and empirical contributions made by Stone and Meade during the war and how Stone extended this program after 1941 in the following chapters. For now, two remarks will suffice. First, after their work in 1940-41 James Meade proceeded to work on countercyclical fiscal policy and international trade theory,[142] whereas Stone proceeded to work on the standardisation of concepts methods to compile national incomes. Hence, Stone was central to the debate on the standardisation of national income concepts and not both Meade and Stone. Secondly, Stone's work on empirics and national income during the war made such an impression on Keynes, that he recommended Stone to become the first director of the yet to be formed Department of Applied Economics at Cambridge (DAE). From this position he would continue his work along two major research subjects. The first being the internationalisation of the System of National Accounts through the Organisation of European Economic Cooperation (OEEC) (Later to be dubbed Organisation of Economic Cooperation and Development (OECD)) and the League of Nations Committee of Statistical Experts (Later to be dubbed the United Nations Statistical Committee). Second his own research towards analysing patterns of consumer demand through econometric models and statistical tools.

The former project started when after the war Stone decided to visit the Institute for Advanced Study in Princeton before taking up his duties at the DAE. Here he was approached by Alexander Loveday (the head at the Intelligence Department of the League of Nations) who proposed that Stone should write a report on national income statistics for the League of Nations. Such a plan had been present since 1939.[143] However, due to the Second World War it did not come into fruition until 1945. This work ended up becoming the 1947 memorandum, that served as the basis for national accounting all over the world. From this point in time, Stone led the charge in the internationalisation of national accounting. A 'National Accounts Research Unit' was established at the DAE by the OEEC to help train statisticians in making national accounts,[144] which led to the publication of the 1952 'Standardised System on National Accounts'. Following the success of this endeavour, the United Nations decided to create a similar system for the

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[141] Deaton, 'John Richard Nicholas Stone 1913-1991',478-479.

[142] Vines and Weale, 'James Meade', F424.

[143] The Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts, *Measurement of National Income and Construction of Social Accounts* (Geneva: United Nations, 1947).

[144] Stone and Pesaran, 'The ET Interview', 94.

measurement for all economies worldwide. This ended up becoming the 1953 United Nations System of National Accounts (SNA).[145] After 10 years when it had become clear that certain revisions of the SNA were needed, Stone was approached by the United Nations to help draft this revision. This project lasted from 1964 to 1968 and Stone was responsible for the first 4 chapters dealing with the structure of the system, the incorporation of input and output tables and quantity and price comparisons.[146] In 1984 Stone was awarded the Nobel Prize for economics as a reward '*for having made fundamental contributions to the development of systems of national accounts and hence greatly improved the basis for empirical economic analysis.*'[147]

Although Stone remained actively involved with the formation of systems for national accounting, his research interests shifted somewhat after becoming the director of the DAE. The econometric program Stone envisioned for the DAE '*would embrace work on facts, work on theories, and work on econometric and statistical methods to analyse the facts in light of theories.*'[148] Stone's second field of research 'demand analysis' was less statistic and more mathematical in scope. He opted to construct models that would help analyse consumer demand for different commodities. Although very different from national accounts, economist and Nobel Laureate Angus Deaton suggests that there is a natural link between the two subjects, in the sense that national accounting provides a framework for the analysis of behaviour, and the demand analysis helps in determining the expenditures necessary to compile the expenditures side of national income.[149] It should still be noted that the methods of accounting and modelling vary greatly. The testing of models does not necessarily require the immediate use of empirics as the testing itself provides knowledge of the model rather than what the model represents. Statistics on the other hand are much more important to gather empirical data on the economy. As such the latter should be seen as a check towards the former. From 1945 onward Stone was a leading scholar in both fields.[150]

In 1955 Stone gave up the Directorship of the DAE to become professor of finance and accounting at Cambridge. This relieved him of administrative tasks and allowed him to pursue his research further. In 1960 Stone would start on his most ambitious project. Along with Alan Brown, whom Stone had worked with before at the DAE, Stone opted to build a multisectoral model of the

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[145] United Nations Department of Economic Affairs Statistical Office, *A System of National Accounts and Supporting Tables 1953* (New York 1953).

[146] United Nations Department of Economic Affairs Statistical Office, *A System of National Accounts 1968* (New York 1968)

[147] Nobel Media 'The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1984' (version: 2014) http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1984/ (Viewed: 29 March 2017).

[148] Stone and Pesaran, 'The ET Interview', 100

[149] Deaton, 'John Richard Nicholas Stone 1913-1991' 482.

[150] Ibidem, 483.

British economy based on the work done at the DAE on social accounting, input output analysis, and consumer behaviour. This project was designed to measure and predict economic growth in Great Britain.[151] The project lasted about 27 years and when the project had been stopped the new model consisted of 5686 variables and 5179 equations.[152] It has been suggested by Leif Johanson that from the onset Stone had a deeper agenda with his systematic representation of National Income.

'*Stone had much more on his mind than merely an accounting-oriented description of the state and development of an economy. Stone was obviously quite aware of Jan Tinbergen's, Lawrence Klein's and others' constructions of macroeconomic models and the potential significance of national accounts in this context.*'[153]

I can subscribe to the idea that Stone's interest in the connection between national accounting and macro-econometric modelling grew over time. Moreover, the fact that Stone was open to such, at the time, revolutionary economic ideas shows a more mechanistic and naturalistic approach towards the economy. An idea that could in part have been instilled by Clark. However, the use of mathematical models to study the economy was highly contested not in the least by Keynes.[154] It is likely that Stone was familiar Jan Tinbergen's work on mathematical models prior to the war. Yet it is hard to believe that Stone already considered the national accounting structure he and Meade created in the context of such macro-econometric modelling due to the revolutionary and unconventional nature of Tinbergen's methods. As such I am wary to support the conclusion that from the outset Stone considered his national accounting framework within the context of more abstract macro-econometric modelling.[155]

2.3 Milton Gilbert and an unsung hero

Milton Gilbert is by far the least discussed economist among the three scholars central to this thesis. This does not mean, however, that his background deserves less scrutiny as he was vital to the changes made in American national accounting as well as the formation of an international consensus on national accounting during and after the Second World War. Sadly, very little is known about Gilbert other than what scant biographical dictionaries mention and what is said about

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[151] University of Cambridge Department of Applied Economics, *The Cambridge Growth Project 1960-1987 : a catalogue of the collection* (Cambridge no date) 7.

[152] Stone and Pesaran, 'The ET Interview', 107.

[153] Leif Johanson, 'Richard Stone's Contributions to Economics', *The Scandanavian Journal of Economics* 87-1 (1985) 4-32, 8.

[154] Tinbergen had only produced his first macro-econometric model in 1936, and in 1939 Keynes heavily criticised the methods used by Tinbergen, with great wit I might add: '*It becomes like those puzzles for children where you write down your age, multiply, add this and that, subtract something else, and eventually end up with the number of the Beast in Revelation.*'
See: John Maynard Keynes, 'Professor Tinbergen's Method', *The Economic Journal* 49 (1939) 558-568, 562.

[155] Ibidem, 6-13

him in several academic works on the history of national income. What little information that was found is presented here as it does show us something about Gilbert.

Milton Gilbert was Born in Philadelphia in 1909 and earned his Bachelor and Master of Arts at Temple University in 1933. After this did his PhD at the University of Pennsylvania in economics.[156] Upon receiving his doctorate in 1937 he proceeded to work as an editor for the 'Survey of Current Business' a monthly publication by the Department of Commerce and more specifically the Bureau of Foreign and Domestic Commerce a predecessor of the Current Bureau of Economic Analysis (BEA).[157] After a couple of years and the outbreak of the war in 1940, Gilbert became the head of the National Income devision at the DoC in 1941, after Robert Nathan joined Kuznets to work at the planning committee of the WPB. It was during this time that he lived in Washington along with his cousin and lifelong friend Richard Gilbert. If Milton is already an unknown in the history of economic thought, it appears as though Richard Gilbert is a myth, his name appearing only scantly in obscure literature about the American war economy. In the grand scheme of things, Richard might have been extremely influential to the United States economy as a whole, its war economy and the New Deal economy.[158] However, for current purposes we should restrict ourselves to look at the influence he exerted on his younger cousin.

Richard Gilbert is referred to by Walter Salant as the unsung hero of American wartime economic policy.[159] Like Salant Richard Gilbert received his Doctorate at Harvard and had taught there between 1924 and 1939.[160] In the scant literature mentioning Richard Gilbert he is described as one of the forerunners of Keynesian thought in the United States.[161] In 1939 he became an economics advisor to Harry Hopkins one of the officials central to the foundation and execution of the 'New Deal'. In 1940 Richard Gilbert set up a research committee in the Office of Price Administration and Civilian Supply (OPACS later to be included in the Office of Price Administration

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[156] Irving B Kravis, 'Milton Gilbert' In: John Eatwell, et al. (eds.), *The new Palgrave: a dictionary of economics* volume 2 (London 1998) 528.

[157] AllGov, 'Bureau of Economic Analysis History' (version 2016) http://www.allgov.com/departments/department-of-commerce/bureau-of-economic-analysis?agencyid=7128 (Viewed 4 April 2017)

[158] Byrd L. Jones has shown the extent to which Richard Gilbert and other liberal Keynesian economists influenced the Roosevelt government as economic policy advisors. They promoted the ideal of full employment as well as higher defence expenditures leading up to and during the Second World War. This policy could be realised through Keynesian fiscal policies including progressive taxes, increases in social security, public works and encouragement of investment.
See: Byrd L. Jones, 'The Role of Keynesians in Wartime Policy and Postwar Planning, 1940-1946', *The American Economic Review* 62-1 (1972) 125-133.

[159] Walter Salant, 'Review: The Collected Writings of John Maynard Keynes: Activities 1940-43 and 1944-46', *Journal of economic Literature* 18-3 (1980) 1056-1062, 1062.

[160] Mitra-Kahn, Redefining the Economy, 253

[161] Ibidem, 253.
See also: Byrd L. Jones, 'The Role of Keynesians in Wartime Policy and Postwar Planning, 1940-1946', *The American Economic Review* 62-1 (1972) 125-133, 125.

(OPA) when it was founded in 1941) that was responsible for the mobilisation of American resources for the war. On multiple occasions, this committee called for an increase in armaments expenditure during 1941.[162] During his time at OPACS Richard Gilbert met with Keynes who admitted he had '*a high appreciation of their (Gilbert, Don Humphrey and Salant) gifts and of the work they are doing.*'[163] Due to his close relationship with Milton Gilbert, it is highly likely that Richards Keynesian ideas rubbed off on his younger cousin. Moreover, due to the fact that they were living together and worked in the same area during the war their work should probably be seen as highly interrelated. Moreover Milton's close ties with the government through his cousin are suggested to be one of the drivers of the reform of national income at the DoC[164] that is described further in section 3.3.

Milton Gilbert remained the head of the national income division at the DoC until 1951 and was, therefore, involved with the further institutionalisation of national accounting in the United States. In 1951 Gilbert set up shop in Paris when he became the director of Economics and Statistics at the OEEC; a position he would hold until 1960. As the director of Economics and Statistics at the OEEC, he would play a pivotal role in the further standardisation and spreading of the GNP/GDP consensus within western economies. As he had access to the national income data of all the OEEC member countries it is only natural that became an international authority on the comparison of national products and purchasing power of currencies.

Between 1960 and 1979 he worked at the Monetary and Economics Department of the Bank of International Settlements in Basel as an advisor until 1975 and as head of the department from 1975 until his death in 1979.

2.4 summary

Clearly, it can be argued that the backgrounds of each author differed significantly which most likely influenced each author's thought on national income and 'the economy'. Although still shrouded in mist, there are several conclusions about Kuznets' ideas that can be drawn from his personal and academic history. First of which is his empirical nature and the great caution he took not to derive conclusions from scanty data. Moreover, Kuznets appears to always situate his work, even its smallest of details, within the broader context of the entirety of society. His work with Mitchell, as well as his hesitancy when promoting the famous U hypothesis, prove that Kuznets was not a fan of deductive reasoning and theorising in economics and wary of econometric methods that do. Secondly, although Kuznets was heavily involved with the creation of national income in the United States and the formation of theory surrounding national income, his primary

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[162] Mitra-Kahn. Redefining the Economy, 240-241, 250.

[163] John Maynard Keynes, *The Collected Writings of John Maynard Keynes*, Eds. Elizabeth Johnson and Donald Moggridge, Vol. 23 Activities 1940-1943 (Cambridge 1978) 192.

[164] Mitra-Kahn, Redefining the Economy, 257-261.

interest lay in theories of economic development. More specifically, he worked on secular growth and income trends for the majority of his life. This fascination with income and income inequality shined though in the majority of his work and undoubtedly played a significant role in his formation of national income.

As for Richard Stone, we can be quite certain that his education at Cambridge profoundly influenced his later thoughts on 'the economy'. Most importantly Colin Clark instilled in Stone the conviction that economic theory should be backed by mathematical empirics. A preference for mathematical economics and the application of empirics to prove theory and aid in policy equally motivated his research at the DEA in Cambridge. Without a doubt, Stone viewed 'the economy' in a very systematic and abstract manner to the extent that he believed that mathematical modelling could in fact explain relationships within the economy. Nevertheless, I doubt whether his ideas were so well developed at this time to make teleological claims about the purpose of national accounts in his later work in econometrics, demand analysis and the Cambridge Growth Model as is done by Johanson.[165] Finally, it is important to understand how closely Stone's work is connected to Keynes' plan to finance the war. Both in the sense that this is how he got his job at the Treasury and later-on as the director of the DEA, but also in the sense that Keynesian theory formed the basis for this system and, as has been argued extensively by other scholars, Keynes' involvement in the creation of the system of accounts by Meade and Stone.[166]

Finally, although little is known about Milton Gilbert, it should be remembered that he was heavily involved with the 'New Deal' government as well as the push to increase war spending in the United States. Moreover, much like Stone in the UK, Gilbert headed the national income division at the DoC during this crucial period. For both Stone and Gilbert their leading national roles granted them access to international organisations and statistical advisory councils where they took up leading positions. Gilbert as head of the 'Economics and Statistics Department' at the OEEC and Stone heading the 'National Accounts Research Unit' at the DEA and the national income unit of the League of Nations Council of Statistical Experts. This helped them shape the international consensus on national income concepts, definitions and methods, as we will see in chapter 4.

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[165] Johanson, 'Richard Stone's Contributions to Economics', 6-13.

[166] See Introduction, page 13.

3 Three national income concepts

The previous two chapters have given an elaborate context for the discussions that will follow in the remainder of this thesis. Resuming, in chapter 1 it was explained that national incomes can and to a certain extent have been used to promote tax reforms. Some of which, served the specific purpose of resource mobilisation for war. This was confirmed whilst discussing Keynes' 'How to Pay for the War' in chapter 2. Furthermore, chapter 2 has shown that that Kuznets, Stone and Gilbert each had a different background that will have influenced their perspective on national income. With this in mind, the following two chapters can go on to discuss the differences between Kuznets, Stone and Gilbert on national income concepts, as well as their debate on the standardisation of these concepts.

This chapter will discuss the three different national income concepts developed by Kuznets, Stone and Gilbert prior to and during the Second World War. It will show how some of these concepts and ideas gradually changed over time. The main purpose of this exercise will be to examine what the ontological and epistemological differences between Kuznets', Stone's and Gilbert's concepts of national income and 'the economy' were. This is necessary as understanding the debate on which national income concepts should be standardised, requires a more thorough understanding of each of the different versions and concepts that were developed prior to the standardisation on national income.

Kuznets, Stone and Gilbert already commented on each others work on national income during the Second World War. However, for analytical purposes, it makes more sense to examine the national incomes of each author during this period separately. This will provide more insight into their individual positions. Although each author will be discussed separately this chapter will on occasion juxtapose their theories in order to clarify their position on several concepts relative to each other. Obviously, the discussion of each author will provoke different questions concerning their concepts and valuation and the validation of each. However, certain key elements will be discussed for each of them. First, their definition of national income and the way it is measured. Second, how the national income relates to 'the economy'. Does it measure the entire economic system or just parts of the economy? Third, it should be asked to what purpose the economy is measured and what purpose the national incomes serve in general. Finally, it will be asked to what extent and how their ideas on national income changed during the Second World War. After this chapter has explained the positions and theories of Kuznets, Stone and Gilbert on national income the final chapter of this thesis can go on to study the gradual standardisation of national income concepts.

3.1 Simon Kuznets

In the literature on the history of national income, especially more recent works, Kuznets' ideas about national income are often referred to as more welfare orientated than those of his peers.[167] This is not necessarily incorrect; however, it can be a bit misleading as this characterisation echoes the way this approach was discussed after the war as we will see in section 4.1.3. Still, when Kuznets discussed his ambitions for social statistics and national income in 1937 he stated:

'*It would be of great value to have national income estimates that would remove from the total the elements which, from the standpoint of a more enlightened social philosophy than that of an acquisitive society represent dis-service rather than service. Such estimates would subtract from the present national income [Paid Out] totals all expenses on armament, most of the outlays on advertising, a great many of the expenses involved in financial and speculative activities, and what is perhaps most important, the outlays that have been made necessary in order to overcome difficulties that are, properly speaking, costs implicit in our economic civilization.*'[168]

He went on to state that infrastructural expenses do not actually represent a service rendered to the population, but are a necessary evil in order to make the economy function properly, and that:

'*Obviously the removal of such items from national income estimates, difficult as it would be, would make national income totals much better gauges of the volume of services produced, for comparison among years and among nations.*'[169]

If read with this in mind, many of Kuznets' ideas about the formation of national income seem quite akin to more recent critiques on GDP. That is not to say that Kuznets' ideas were as radical as represented by this quote. In fact, Kuznets' ideas about national income were more nuanced than assumed by the scholars who claim him as a sort of hero for the welfare version of national income. Moreover, his concepts and ideas should not be regarded as rigid and dogmatic by assuming they are represented by just one of his many papers on the subject. As with any scholar Kuznets' theories and ideas evolved and changed according to the context he lived in, a point he himself makes quite often. When studied closely we can see that for specific purposes, Kuznets was willing to alter his statistics and concepts, which points to a more fluent and social understanding of national income concepts.

3.1.1 'Produced' and 'Paid out'

As was mentioned in the previous chapter, Kuznets started working on national income at the NBER during the early 1930s. One of his first major theoretical projects was drafting an article on national income to be incorporated in the Encyclopaedia of the Social Sciences. In this article

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[167] See for instance: Diane Coyle, *GDP A Brief but Affectionate History* (Princeton 2014) 13-14.
Mitra-Kahn, Redefining the Economy, 239-240.
Philipsen, *The Little Big Number*, 94.

[168] Simon Kuznets, 'National Income and its Composition; Discussion Between Simon Kuznets, Clark Warburton and M.A. Copeland', *NBER Studies in Income and Wealth Series* 1 (1937) 35-45, 37.

[169] Ibidem.

Kuznets made an interesting attempt to show, as objectively as possible, different aspects of national income, what it measures, and what decisions underlie its composition. Kuznets opened his argument by stating that national income can refer to several different but interrelated processes within an economy.

'*National Income may be defined provisionally as the net total of commodities and services (economic goods) produced by the people comprising a nation; as the total of such goods received by the nation's individual members in return for their assistance in producing commodities and services; as the total of goods consumed by these individuals out of the receipts thus earned; or, finally as the net total of desirable events enjoyed by the same individuals in their double capacity as producers and consumers. Defined in any one of these fashions national income is the end product of a country's economic activity, reflecting the combined play of economic forces and serving to appraise the prevailing economic organisation in terms of its returns.*'[170]

Although all forms of national income are representations of the product of a country's economic activity, Kuznets subdivided national income into four different totals: Income produced, received, consumed and enjoyed. From these different totals only the former three can be measured, as the enjoyment of income is a subjective matter that cannot be measured in a sufficiently objective quantitative matter. Therefore, the concept of income enjoyed is only retained as a background for other '*cruder measures*' of economic value.[171] Kuznets went on to state that the use of either of these concepts is wholly dependent upon what function of national income the compiler seeks to perform.[172] If a compiler aims to measure economic power, he can resort to measuring productivity and income produced. If the compiler seeks to measure purchasing power, he can resort to incomes received. A more direct measure of total welfare could equally be made by measuring income consumed. It is important to note that each of these totals need not necessarily be equal. Rather, they are each different representations of the value of commodities and services in a country.

Although different types of national income estimates need not be equal, according to Kuznets, national income had to be 'net' in order to represent the value of commodities and services properly. This distinction between gross and net was twofold. First, net national income had to be net of all intermediate production that is the costs of raw materials used in the production of commodities and services. Secondly, it had to be net of the consumption of capital equipment used in production, i.e. the costs of maintaining production capacity. In his encyclopaedia article Kuznets mentioned several aspects that he is unable to account for but could be part of this 'netness'. Most striking among which is the depletion of natural resources by extractive industries,

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[170] Simon Kuznets, 'National Income', In: Edwin R.A. Seligman and Alvin Johanson (eds), *Encyclopedia of the Social Sciences* Vol XI XII (New York 1937) 205-224, 205.

[171] Ibidem, 207.

[172] Ibidem.

but he also mentioned expenses in education for lawyers or doctors and the sale of property.[173] Kuznets stated that the in or exclusion of certain economic motives or 'intermediate' expenses varies from time to time and between countries.

In his estimates of the US national income the distinction between income produced and received (or paid out) played an important role. As was mentioned before, the two were not equal to one another in that '*the former does and the latter does not, include savings by business establishments.*'[174] Savings need not necessarily be positive figures as becomes clear when he discusses the national incomes between 1929 and 1932 and shows how business savings turned into losses due to the depression. '*Savings by business establishments and corporations which, in 1929 amounted to about 2.0 billion dollars, have, in the years following turned into losses which, by 1932, rose to 9.5 billion dollars.'*[175] According to Kuznets net national income produced is '*the economy's end product attributable to the efforts of the individuals who comprise a nation*'[176] at market value or market prices. Kuznets argued that the compensation people receive for their efforts directly are rarely, if ever, equal to net income produced. National income paid out is therefore: the sum of compensation in money and in kind received by individuals for the efforts rendered to produce net national income produced.

By using two different concepts, Kuznets answered two different questions. First, what is the value of national production? Second, how much income is earned within a country? Adjusting concepts and measurement instruments to the questions asked characterised all of Kuznets' work on national income. More importantly, from his article in the encyclopaedia of the social sciences until his discussion of systems of national accounts, which we will elaborate on in detail in chapter 4, Kuznets showed that he was keenly aware that what and how commodities and services are valued is wholly dependent on societal concepts. '*Being conditioned by the institutional set up of the family and of economic society, the line between economic and non-economic activity shifts from country to country and from time to time.*'[177] This is especially true for the value of household labour. Kuznets argued in favour of a more narrow concept of national income that excludes household labour from national income, thereby keeping '*the paradox, mentioned by Pigou, of a decline in national income resulting from a man marrying his housekeeper*'[178] in place. However he

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[173] Ibidem, 212-213

[174] Simon Kuznets, 'National income 1929-1932', In: *National Income, 1929-1932: Letter from the Acting Secretary of Commerce, Transmitting In response to senate resolution no. 220 (72D Cong) A report on national income* (January 1934) https://fraser.stlouisfed.org/scribd/?title_id=971&filepath=/files/docs/publications/natincome_1934/19340104_nationalinc.pdf (viewed 7 March 2017) 1-2.

[175] Simon Kuznets, 'National Income, 1929-32', (June 1934) http://www.nber.org/chapters/c2258.pdf (Viewed 4 March 2017) 3.

[176] Simon Kuznets, 'National income 1929-1932', (January 1934) 1.

[177] Kuznets, 'National Income', 209.

[178] Ibidem.

immediately followed this remark by stating that '*without a recognition of the limitations involved in its use any comparisons of national income across wide time intervals or between countries marked by essential differences in the relative scope of the economic system are highly misleading.*'[179]

Aside from the difficulties accompanying the collection, valuation and comparisons of national income figures, Kuznets devoted much of his article in the 'Encyclopaedia of the Social Sciences' to discuss the allocation of national income '*by economic regions, by industrial sources, by forms of economic organisation*'[180] and finally '*by personal distribution according to size of the economy.*'[181] Having discussed the former of these already, Kuznets went on to discuss the distribution by industrial sources. He argued that when monitored over time, these figures demonstrated the development of industrialisation which he showed for the United States between 1850 and 1930.[182]

'*But with all such differences the decline in the part of agriculture in the nations' end product; at first rapid then disappearing, in the relative contribution of mining and manufacturing; and the rapid increase (…) of the share coming from service, trade, finance and government, are tendencies which appear as constituent elements of the growing capitalistic system of production and thus characterise all countries drawn into the path of this evolution*'[183]

He elaborated on similar interrelated tendencies in the distribution of national income by types of income and economic forms of organisation until he reached the division of national income by personal share. Although he mentions '*the absence of data*'[184] regarding this relationship, he noted that different types of economic organisations such as agriculture and industry are characterised by differences in the size and distribution of personal income. He proceeded by stating the many difficulties of studying relative versus absolute inequality, as well as how inequality of income can relate to inequality of welfare.[185] When reading this article, one cannot help but see the seeds of Kuznets' theory on economic development and income inequality, discussed in section 2.1.2, germinate and how these ideas underpin his interest in national income.

Naturally, the prominence of Kuznets' research provoked response and led to more elaborate discussions about his concepts of national income. According to some critics, the use of different concepts(paid out and produced) led to confusion. During a conference, they stated that

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[179] Kuznets, 'National Income', 209.

[180] Ibidem, 215.

[181] Ibidem.

[182] Ibidem 215-216.

[183] Ibidem.

[184] Ibidem 222.

[185] Ibidem, 223.

the referring to both as 'national income' was a mistake. As such it was decided that '*national income would henceforth refer to 'net national income produced' and 'net income paid out, being a subdivision of national income, would best be described by a specific term.*'[186] It was not, however, as Fioramonti describes, the introduction of GNP/GDP as a 'macro measure'.[187] Rather the participants concluded that there should be one main metric for 'national income'. Because the net national income produced concept was more inclusive than the income paid out concept the income produced concept was preferred as the main metric.[188] However, Kuznets never fully abandoned the idea that there are different types of national income: produced, paid out, spent, and consumed. Although he restricted himself mostly to the agreed net national income produced he stated: '*Nevertheless, the utility of the other totals and the advantage of estimating them are obvious.*'[189]

3.1.2 Conflicts in national income and productivity

Between 1934 and 1941 Kuznets continued his research into national accounts, estimating them for the period 1919-1938. This led to his massive 'National Income and Its Composition 1919-1938' (1941), by far his most elaborate discussion of the concept of national income. Where in his earlier works Kuznets explained that societal context and institutional setup frame the ways in which national income is composed, he is most explicit and eloquent about this in 'National Income and Its Composition'. Kuznets showed a keen awareness that the value that is ascribed to certain modes of production is deeply embedded in social and moral philosophy. Hence, there is no absolute certainty that some modes of production will forever be deemed productive or unproductive.

'*When any estimate is examined critically it becomes evident that the maker, wittingly or unwittingly, has used one or more criteria of productivity. The statistician who supposes he can make a purely objective estimate of national income not influenced by preconceptions concerning the "facts" is deluding himself; for whenever he includes one item or excludes another he is implicitly accepting some standard of judgement, his own or that of the compiler of his data*'[190]

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[186] Simon Kuznets, National Income and Capital Formation 1919-1935 (National Bureau of Economic Research 1937) 4.

[187] Fioramonti, *Gross Domestic Problem*, 26.

[188] Kuznets, National Income and Capital Formation, 4.
See also: Carol Carson, 'The Conference on Research in Income and Wealth: The Early Years' In: Ernst R Bernt and Jack E. Triplett (eds), *Fifty Years of Economic Measurement: The Jubilee of the Conference on Research in Income and Wealth*, (Chicago 1991) 3-8, 6.

[189] Simon Kuznets, National Income and Its Composition, 1919-1938, Volume 1 (National Bureau of Economic Research 1941), 48.

[190] Kuznets, National Income and Its Composition, 3.

In 'National income and Its Composition', Kuznets summarised many of criticisms towards national income that are still valid today. He mentioned the proceeds of gambling in his treatment of money transfers and explained that they do not represent rendered services and should be excluded. However he explains that profits made by gambling companies do represent a service because they provided satisfaction to the gambler regardless of whether he won anything.[191] As such, he showed the different sides to adding and not adding the value of different money transfers, his choices when measuring these values and where the line between social and economic concepts becomes blurry.

When he discussed the difference between ultimate and intermediate consumption he asked on whether or not individuals should be considered in the same way as enterprises and to what extent: the costs of raising children, investments in human capital through education and the costs of sustenance to maintain the working population, should be considered intermediate consumption. Here Kuznets' argued that '*Economic goods exist for men rather than men for economic goods.*'[192] As such humans should never be treated similarly to enterprises, organisations or capital even though they had a small business, or when they are themselves the sole capital in the business like in law firms or as a small medical practitioner. This shows his interest in human capital as was elaborated in section 2.1.2 and 2.1.3. He also mentioned the problem of disasters, where capital losses from disasters such as floods and hurricanes are not included, whereas production involved with reconstruction was. Kuznets argued, as is done today, that disasters are '*exogenous, accidental changes on both demand and supply sides*'[193], which changes the '*wealth at the disposal of inhabitants*'[194]. However, it does not involve a change in income and therefore should not be measured in national incomes.

He went on to question whether or not market transactions that are of satisfaction to some members of society but of dissatisfaction to others should be included in national income. Ideally, Kuznets stated, we ought to measure the amount of satisfaction and dissatisfaction from each commodity. However, this would be rendered impossible. For these practical reasons, he argued that such questions of productivity should be based upon the laws that currently apply to the country. When concluding this part of his text, Kuznets made an interesting statement: '*It may well be that social standards will be so modified as to reduce our current estimates to absurdity. If so, all we can claim is that they have historical validity.*'[195] This showed his awareness that what is rendered as productive and unproductive changes over time. As such national incomes should

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[191] Kuznets, National Income and Its Composition, 11-12.

[192] Ibidem, 37.

[193] Ibidem, 14

[194] Ibidem.

[195] Ibidem, 20.

always contain a discussion on what is considered productive and change whenever social definitions of productivity change.

3.1.3 Armaments, and government

Similar questions about the social definitions of productivity were central to Kuznets' treatment of the value of government services, especially when it comes to armaments. It is here that Kuznets' ideas become tricky. In contrast to Kuznets' earlier statement about the exclusion of payments for armaments in section 3.1, Kuznets placed an extensive footnote in 'National income and its Composition' to argue in favour of including government expenditures on police, armaments and defence. '*Doubts, however, have often been expressed concerning the validity of including the services of police or armed forces in national income…*'[196] Kuznets changed his earlier opinion by stating that an estimator has to accept the criteria of productivity used by society as a whole. Not including armed services and police would entail using a criterium of productivity different from the rest of society. In order to prevent unequal treatment between private security services bought in by companies to protect their assets, and the costs of police and military to protect national assets, Kuznets included armaments in his definition of productivity and therefore in his national income.[197]

However, this is far from the last thing Kuznets had to say on the valuation and the treatment of government. The value of government services, according to Kuznets, can be measured in two different ways, the 'payment price principle' and the 'cost principle'. The former treats taxes levied by the government as the price for the services it renders. The latter one treats government as a final consumer thereby not valuing the services it renders but rather the ones it consumes and the prices paid by government for the use of factors of production. Kuznets stated that '*The choice between the two principles is largely between two evils, for neither is adequate.*'[198] With that he meant that the payment price principle essentially did not represent market values, as the government has the power to fix its prices through taxes which are obligatory and not market bound. However, treating the government as a final consumer also did not add up. Government itself is also a producer of services and commodities to both consumers as well as producers. The cost principle would make these services incomparable to the value of other commodities and services, as they are valued at a market price and a cost principle would merely value 'cost prices'. Moreover, as was shown in section 3.1.2 Kuznets did not want to equate enterprise or organisations to humans. As such an organisation can never be a final consumer like people are.

Kuznets chose to use the payment price principle based on two considerations. The first is that the payment price method was more sensitive to short term changes in price levels. Kuznets argued that there is always a lag between costs and changes in the market situation. Finding out

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[196] Kuznets, National Income and Its Composition, 31.

[197] Ibidem.

[198] Ibidem 32.

how an economy responds to changing conditions can be done more accurately by using the payment price principle. Secondly, Kuznets claimed to be less interested in whether the principle of valuation represents a value as efficient as its value if it were market based. The basis on which a national income is more or less valid should be judged not according to the most efficient price but according to the price that is paid for services by society as a whole. Therefore, Kuznets treated government services and commodities as he would business enterprises instead of treating it as a mere consumer of business enterprise. In doing so he allowed for a similar addition of surplus and deficit as the difference between income produced and income paid out would.[199] Moreover, because Kuznets treated government services and commodities as business enterprises, costs between the two were considered intermediate consumption. In this respect, direct taxes on enterprise were considered as intermediate consumption and should therefore be subtracted from national income.[200] This valuation remained one of the key differences between Kuznets and Stone and Gilbert as will be seen in chapter 4.

3.1.4 War and prewar

In spite of the fact that Kuznets created a fairly coherent and consistent overview of his ideas about national income, he diverged from this concept during the war. This can mainly be attributed to the fact that Kuznets' 'National Income and its Composition' (1941) was drafted and conceptualised before the advent of the Second World War. That is not to say that his ideas about the concept of national income changed completely. However, Kuznets did create a distinction between wartime national income and peacetime national income. As can be read in National Product War and Prewar (1944) Kuznets still argued that the main purpose of 'the economy'

'*is to provide for the population's needs; and the contribution of economic activity is represented by: (a) flow of goods to ultimate consumers (consumers' outlay); (b) net additions to stocks of goods that have not yet reached consumers but are intended to be used, directly or indirectly to satisfy ultimate wants.*'[201]

However,

'*In a Major war, economic activity has a second basic purpose: to provide commodities and services for the armed conflict. It is not realistic to treat this conflict as a production or consumption process subordinate to that of satisfying needs of ultimate consumers; nor is it valid to assume that in an all-out war, civilian needs become completely subordinate to military.*'[202]

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[199] Kuznets, National Income and Its Composition, 31-34.

[200] Ibidem, 56.

[201] Simon Kuznets, National Product War and Prewar: Our Economy in War. (National Bureau of Economic Research 1944), 1.

[202] Ibidem.

Kuznets' version of national income composed during the war measured 'the economy' and their contribution to both purposes: to satisfy the needs of the population, and to support the war effort. In doing so he aimed to create a measure for the flow of commodities and services to the population and the net capital formation not destined for war, as well as the war outlay consisting of finished products destined for the war effort and the addition of capital designed for war production.[203] The wartime concept included gross estimates of wartime additions to the capital stock of a country, but separated them from the consumption of armaments by the government. This allowed Kuznets to include wartime spending in wartime national income, but still kept it separable from the question of whether it adds to the net national income.[204]

Another major issue for Kuznets was valuation at current prices. Prices soar through the roof during wartime, as has been seen when discussing Keynes' How to Pay for the War'. Kuznets argued that this inflation skews the extent to which national income at current prices represents the actual flow of commodities to the population and used for the war effort. Therefore, Kuznets decided to deflate both war as well as non-war production by valuing them according to prices of comparable products at the base year of 1939. This was used to make national incomes during war years more comparable in order to retain the function of estimating the satisfaction of needs for the population.[205] According to Kuznets this method enabled statisticians to show how the war actually affected production for both the war as well as the needs of the population and thus explain the transformation into the war economy.

3.1 Richard Stone

Where Kuznets' work is presented in large detail, with elaborate discussions on the concepts, definitions and choices on which he based his national income, Stone presented his work far more succinct and straightforward. In contrast to Kuznets, Stone did not discuss many examples of the in-and-exclusions of certain modes of production, nor did he highlight specific nuances. The vast majority of Stone's articles dealt with more general and abstract economic ideas, rather than particular commodities or modes of production. Several different explanations can be thought up to explain these differences. First of which deals with the medium by which Meade and Stone's national incomes and their theories are presented. Meade and Stone's ideas as well as Stone's own ideas were published in academic journals such as 'The Economic Journal' (of which Keynes was Editor in Chief) and 'The Review of Economic Studies'. The use of this medium obviously restrains authors from writing elaborate treatises on the details of their national income concepts. A second explanation is the more advanced and institutionalised collection of data by Kuznets and the United States contrasting to the British version. When Kuznets started working on National

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[203] Kuznets, National Product War and Prewar, 2.

[204] Ibidem.

[205] Ibidem, 6-7.

Income there was already ongoing research into national income at the NBER. In contrast, although Clark and several others had been working on national income in the UK, this was less of an organised task. On multiple occasions both Clark and Keynes complained about the quality of economic statistics created by the British government.[206] A lack of thorough data could have led one to be more creative, and view the economy in a more abstract and distant way. Aside from these more circumstantial arguments, however, one cannot escape the idea that Meade and Stone, as well as Stone himself, viewed 'the economy' and national income in a more systemised way. Promoting this line of thinking, in national accounts, requires one to use more general concepts and pay less attention to details and particularities.

3.2.1 Tables and balance sheets

As the title of their revolutionary paper, 'The Construction of Tables of National Income, Expenditure, Savings and Investment' (1941)[207], suggests, Meade and Stone set out to create tables in which to present the three different ways of calculating national income, a method they inherited from Clark. The main goal of this exercise was to standardise definitions and use balance sheets to cross-check different totals.

'*National income maybe defined in a number of different ways. Differences in definitions, which are all to infrequently given with precision by writers on this subject may lead to great confusion in economic discussion. It is the purpose of this paper to show that the construction of balance-sheets of national income and expenditure clears up some of these problems of definition and provides a powerful statistical instrument for the cross-checking of various methods of national income*'[208]

Meade and Stone argued that using different concepts of national income led to confusion. Therefore, they saw their tables as a means of standardising and streamlining these discussions. Their tables contained a format to present national income. The revolutionary part of this presentation, however, was the fact that the totals of income output and expenditures had to be equal. After all, the use of cross-checks would be useless if the outcomes of different totals are unequal. This provided the user with means to check each of the totals and see whether or not the calculated total of national income was correct. Clearing up problems of definitions and concepts also facilitated more accurate comparisons between different countries. These two goals: 1) promoting the use of cross-checks and balance sheets and 2) international standardisation to promote international comparison, were central to the programme set out by Meade and Stone. Richard Stone never abandoned this programme.

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[206] Tily, 'John Maynard Keynes and the Development of National Accounts in Britain 1895-1941', 347-348.

[207] James E. Meade, and Richard Stone, 'The Construction of Tables of National Income, Expenditure, Savings, and Investment', *The Economic Journal* 51 (1941) 216-233.

[208] Meade and Stone, 'The Construction of Tables of National Income, Expenditure, Savings, and Investment', 216.

TABLE A

I. Net National Income at Factor Cost.	II. Net National Output at Factor Cost.	III. Net National Expenditure at Factor Cost.
1. Rents. 2. Profits and Interest. 3. Salaries. 4. Wages.	6. Net output of agriculture. 7. Net output of mining. 8. Net output of manufacturing. 9. Net output of transport. 10. Net output of distribution. 11. Net value of personal services. 12. Net value of government services. 13. Net income from abroad. (cf. Table D, item 1 (*d*) and (*e*)).	15. Personal Consumption at Market Prices. 16. Current Government Expenditure on Goods and Services. 17. Government subsidies. 18. *Less* Indirect taxes. 19. Home Investment: (*a*) Gross Home Investment in Fixed Capital. (*b*) *Less* Depreciation, Renewals, Repairs, etc. (*c*) Home investment in stocks. (*d*) Costs involved in transfer of property. 20. Foreign Investment.
5. Total Net National Income at Factor Cost.	14. Total Net National Output at Factor Cost.	21. Total Net National Expenditure at Factor Cost.

Table 2: Meade and Stone's Table A (net national income at factor cost).[209]

In their paper, Meade and Stone discussed the in-and-exclusion of several products and concepts as well as how they are valued. However, they did not elaborate on the motivations behind some of their choices. For example: when elaborating on 'Table A', Meade and Stone explained that they measure income at factor costs. However, not a single argument is mentioned to explain this other than to '*measure the income received by the factors of production from the sale of that product*'.[210] In 'National Income and Expenditure' (1961), which Stone wrote along with his third wife Giovanna Saffi Stone, he was more explicit stating:

'*As far as indirect taxes are concerned the list is self explanatory. They must be excluded from domestic income because they represent a business cost which does not remunerate any input into the productive system. (…) The domestic income is intended to measure the income of all who contribute to domestic production and therefore the cost, in terms of factor rewards, needed to make that production possible. Evidently indirect taxes have no place in such a concept,*'[211]

[209] Meade and Stone. 'The Construction of Tables of National Income, Expenditure, Savings, and Investment' 231.

[210] Ibidem, 217-218.

[211] Richard Stone and Giovanna Saffi Stone, *National Income and Expenditure* (London 1977) 24.

Stone did not consider government to be a factor of production such as nature, labour, etc., or at least he did not consider indirect taxes as an addition to the value of production. As such they should be excluded.

3.2.2 Purpose and the differences between the US and the UK

The aforementioned calculation at factor cost naturally differs from Kuznets' calculation at market prices and was one of the major differences between the national income of the United Kingdom and the United States. In line with Meade and Stone's programme of standardisation, Stone wrote at least three articles between 1942 and 1943 to discus these differences and to make suggestions to improve their comparability.[212] In the earliest of these articles in June 1942, Stone assured the reader no singular perfect way to construct national income existed. '*I do not wish to suggest by the form of presentation adopted here that one concept is right and the other wrong which is chosen is a matter of convenience, and it depends partly on taste and partly on the problems to be solved.*'[213] However, he immediately stated, '*At the same time, I find the Department of Commerce's definition of national income rather inconvenient.*'[214] The problems to be solved though a calculation of national income, according to Stone, do not become all that obvious in the first part of his discussion but are explained more clearly in part 2 of his analysis. Stone sought to estimate the progress made in the United States and The United Kingdom to transform 'the economy' into a war economy. He wondered how successful both were in collecting the means to finance the war effort. The national income he proposed seemed to function mainly as a measure of taxable income to find the resources to fund the war.[215]

The goals and purposes of Stone's definition of 'the economy' became even more apparent in his second essay in 'The Review of Economic Studies' at the end of 1942. This treatment of the differences was more elaborate. Stone asserted that there were two problems that complicated comparisons between the United States' and the United Kingdom's national incomes. The former problem, which Stone referred to as the economic problem, dealt with the ontological and epistemological differences underlying the two national incomes, namely: what 'the economy' was and how it should be measured. To resolve this, he set out the definitions and purposes of the

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[212] Richard Stone, 'The National Income Output and Expenditure of the United States of America,1929-41', *The Economic Journal* 52 (1942). 154-175.
Richard Stone, 'National Income in the United Kingdom and the United States of America', *Review of Economic Studies* 10-1 (1942-1943) 1-27.
Richard Stone, 'Two Studies on Income and Expenditure in the United States', *The Economic Journal* 53 (1943) 60-75.

[213] Stone, 'The National Income Output and Expenditure of the United States of America', 154-155.

[214] Ibidem, 155.

[215] Ibidem, 157-159.

concepts he used: net national income at factor cost and private disposable income.[216] The latter of which was more or less a summary of incomes for consumption more akin to Kuznets' 'income paid out'[217] concept. The logical problem on the other hand dealt with how different conventions and economic structures were incorporated when constructing national income. Stone explained these by showing how he would deal with social security and workman's compensation premiums. He discussed that they should be treated either as an indirect tax on employers or as part of the wage of employees. He concluded by stating that there is no convention on how to do this and it depends on the decisions made by the estimator.[218]

Stone stated that different concepts are '*useful for different purposes.*'[219] Moreover, he argued that the use of net national income at factor costs served the purpose of measuring '*the total net income of the factors of production and its constituents,*'[220] as well as showing '*how income is distributed between different factors.*'[221] On the other hand, he considered private disposable income useful for estimating '*all receipts which reach the private sector irrespective of whether they are gained as the result of productive activity.*'[222] In other words, the more inclusive national income at factor costs was 'the economy' and it revolved around production. Private disposable income, on the other hand, was merely a part of the economy and revolved around the incomes individuals and households were able to use for consumption.

Stone was quick to return to discussion on how to finance the war effort stating that although private disposable income may increase during wartime '*the public should not continue to increase their expenditure as they normally would, but should increase it less or even diminish it. This will leave a larger part of the increased income for taxes and savings.*'[223] Naturally, the increased savings and taxes would be used to finance the war. This parallels Keynes' plans from 'How to Pay for the War', and shows just how much Stone's task of compiling national income was connected to Britain's war effort. That is not to say that Stone did not look beyond the war to find a purpose for his national income figures. Already in 1942, Stone described that national income can be used for multiple policy purposes, most important of which would be combatting unemployment.

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[216] Stone, 'National Income in the United Kingdom and the United States of America', 1-3.

[217] See section 3.1.1
Or: Simon Kuznets, 'National income 1929-1932', 1-2.

[218] Stone, 'National Income in the United Kingdom and the United States of America', 1-4.

[219] Ibidem, 2.

[220] Ibidem.

[221] Ibidem.

[222] Ibidem.

[223] Ibidem, 7.

'*National income taken together with information on the occupied population, unemployment, hours of work and the like would enable us to form some opinion of the level the national income would attain if involuntary unemployment were eliminated. This would be a measure of the level which expenditure at factor cost would have to attain if full employment was to be achieved.*'[224]

It is important to note that Stone does not appear to describe unemployment as merely an economic problem but as a social one that haunts the industrialised world. There is a sincere belief that national incomes can be used not only as a measure but also to project how much expenditures should increase in order to achieve full employment. A theme to be echoed during the period of reconstruction after the war. Moreover, this idea of being able to estimate how to tinker with the economy and government spending in order to achieve full employment was indicative of Stone's systematic view of the economy, that can be fully understood and perhaps even programmed to a certain extent. The step between these ideas and macro-econometric modelling should be considered, theoretically, a small one indeed.

3.2.3 Valuing government differently

The more prominent role of national income for policy purposes in Stone's work can also be related to the treatment of government in his system of national accounts. This is most visible in Stone's third and final discussion of the differences between the national income concepts in the US and the UK. In this article in 'The Economic Journal' Stone evaluated two different studies on national income from the NBER by the first being Kuznets' 1941 National income and its composition and the second Harold Barger's Outlay and Income in the United States. It is the more elaborate and critical discussion of the former work which has to be focussed on here, as it discussed Kuznets' work. Stone excellently summarised the way in which his treatment of government differs from Kuznets' and hence how his treatment of government fits in his own accounting scheme.

As seen above in section 3.1.3 Kuznets measured the value of government through the payment price principle by which he values the government according to the prices paid by industry and private citizens for its services through taxes. As such, government is seen on equal footing to industry in supplying services and commodities for a fee. This implies that the amount which government spends more than it receives is subtracted from national income produced. Stone fundamentally disagreed with this treatment of government: '*This, I think, is a thoroughly inconvenient way of looking at the matter.*'[225] Stone refused to treat government as he would industry, thereby treating the surplus and the deficit of government as profits and losses within a company. Relating this back to the war, Stone wrote:

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[224] Stone, 'National Income in the United Kingdom and the United States of America', 14.

[225] Richard Stone, 'Two Studies on Income and Expenditure in the United States', 63.

'*It is surely not reasonable to say that at the present time the British and American governments, for example, are carrying on the business of selling defence services in such a monstrously unbusiness-like way that they are incurring thumping commercial losses.*'[226]

Instead of treating government like a business, Stone proposed to measure through the 'cost principle' and thereby treating government as a final consumer. This ties in with why Stone measures national income at factor costs. As government is not considered a producer the payment of indirect taxes on commodities and services do not represent production. Hence, taxes do not represent an added value to the commodity or service and should not be measured in national incomes. As such in his expenditures column Stone aggregates all government spending on goods and services plus subsidies less indirect taxes.[227]

3.3 Milton Gilbert

As was explained in chapter 2 Gilbert started working at the Department of Commerce in 1937 as the editor of the 'Survey of Current Business'. And it was in 1940 that he became the head of the national income division at the DoC. Sadly, very little work was found by Gilbert on national income prior to his work as the editor of the war and his work as the head of the national income division. As such it is difficult to assess whether Gilbert's ideas fundamentally changed during the war or whether he merely sought to alter Kuznets' definition used at the DoC to his own. However, it has become evident the war had a profound influence on the purpose of national income for Milton Gilbert as it did with Stone.

3.3.1 Initial position

Naturally, the war played an immense role in the formation of national income at the DoC between 1940 and 1945, as it did in England. However, in contrast to Stone who continuously aimed to analyse the structural transition into a war economy, Gilbert's emphasis in researching the relationship between war and the national economy was somewhat different. Gilbert appeared to be interested in the expansion of the national income due to the war more than anything. One of his earliest publications on national income from June 1941 explains how the national income of the United States in 1940 had risen by 5 billion, due to the war that brewed in Europe. Gilbert argued that Allied purchases of war materials in the United States, government investment in armaments and increased employment due to the former two, expanded the United States economy by 5 billion dollars in 1940.[228] Gilbert went on to explain that the expansion of the United States economy had also increased real national income (corrected for inflation) between 1939

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[226] Richard Stone, 'Two Studies on Income and Expenditure in the United States', 63.

[227] Meade and Stone. 'The Construction of Tables of National Income, Expenditure, Savings, and Investment' 217-218, 231.

[228] Milton Gilbert, 'National Income Exceeds to 76 Billion Dollars in 1940', *Survey of Current Business* (June 1941) 11-18, 11.

and 1940. Gilbert argued that real income provides '*a closer approximation to a measure of change in the economic well-being of the Nation.*'[229] Implicitly arguing that the war increased wellbeing in the United States.

In this paper Gilbert saved one paragraph to explain the concept of national income used at that time. '*National Income is the measure of the value of the net output of commodities and services produced by the private and public enterprises of the economy.*'[230] In his summary of 'producing entities' he includes 'government agencies'. Moreover, the '*development follows industrial lines*'[231] which would imply that government is treated on a similar footing as industry. Finally ,Gilbert states:

'*The difference between net income and the amount disbursed constitutes business savings, such "savings" being either positive or negative. Income actually disbursed by enterprises plus business savings equals the national income. Thus, the national income is a measure of the net value of goods and services produced and also of the claims to these goods and services.*'[232]

These were clear nods to the 'income produced' and 'income paid out' concepts as introduced by Kuznets, following the use of 'national income' to refer to 'national income produced'. He also clearly stated that both concepts should be separated as income paid out or 'income payment to individuals' as it is referred to by the DoC includes transfer payments like pensions and social security and does not measure business savings. Therefore, one cannot escape the conclusion that the concept of national income used by Gilbert in 1941 was actually Kuznets' concept of 'net national income produced' and 'paid out'.

3.3.2 The war creates a rift

As the war got underway and the war budget and production in the United States began to pick up steam, Gilbert gradually changed the way in which national income was measured at the DoC. In his 1942 articles for the 'Survey of Current Business' and the 'Journal of the American Statistical Association' Gilbert put forth the idea that measuring the national economy as it is affected by the war required a different type of national income. Gilbert's main problem is that 'net national income produced', the measure introduced by Kuznets, was not comparable to war expenditures and hence did not provide an accurate assessment of the amount of resources allocated to the war effort. '*the national income is a type of aggregate which is not strictly comparable with the total of war expenditures.*'[233] A common feature of Gilbert's articles during the war was measuring the

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[229] Gilbert, 'National Income Exceeds to 76 Billion Dollars in 1940', 12.

[230] Ibidem.

[231] Ibidem.

[232] Ibidem, 13.

[233] Milton Gilbert, 'War Expenditures and National Production', *Survey of Current Business* (March 1942) 9-18, 9.

intensity of the war effort by using 'impact ratios': the relative size of all production dedicated to war effort as percentage of all national production.[234] To this end, Gilbert argued a different national income concept was needed.

According to Gilbert, there were two problems that needed to be solved in order to make a national income fit to measure war ratios. The first point that Gilbert argued at length about, is whether or not national income should be measured at factor cost or at market prices. Gilbert stated that national incomes were being measured at factor costs rather than at market prices due to the exclusion of taxes for businesses which inflate prices.[235] Gilbert suggested that in order to make war expenditures, which were paid for at market prices, comparable to the national income and national output, the national income concept used should be national income at market prices. It seems quite peculiar, however, for Gilbert to have argued that calculating national at market prices constitutes a change. As glossed over briefly in section 3.1.1 the concept used by Kuznets, which is considered dominant for that time, already measured national income at market value or prices.[236] It seems especially odd as Gilbert emphasised this use of market prices in his concept to separate his national income concept from Kuznets'. '*This figure (…) has been labelled, somewhat hesitantly, "gross national product at market prices," in the hope that the last three words will clearly distinguish it from Professor Kuznets' gross national product concept.*'[237] It is not clear why Gilbert knowingly did this, other than to emphasise the use of a concept different from Kuznets'. What is clear, however, is that the way in which Gilbert's new concept differed from Kuznets' clearly did not lie in the distinction between market prices and factor costs.

The second problem for Gilbert was the fact that military expenditures and war ratio's were not comparable with net national income, and instead should be compared to gross national income: '*Further incomparability arises because total war outlays include several types of expenditure which do not utilise current output, and which cannot, therefore, be compared or subtracted from current output.'* [238] Gilbert argued that a large part of the war expenditures were used to create capital rather than production of commodities and services. Accordingly, he did not deem it correct to compare these expenditures with a national income that excluded the consumption of capital. Hence, war expenditures and the 'war impact ratios' should not be

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[234] Milton Gilbert, and R.B. Bangs, 'Preliminary Estimates of Gross National Product 1929-41', *Survey of Current Business* 22-5 (1942) 9-13 13.

[235] Milton Gilbert, 'Measuring national income as affected by the war' *Journal of the American Statistical Association* 37-218 (1942) 186-198, 190.

[236] Kuznets has shown that he measures national income at market prices at several occasions
See: Kuznets, 'National Income and Capital Formation 1919-1935', 5-6.
Or; Kuznets, 'National income and its composition 1919-1938', 20-31.

[237] Gilbert, 'Measuring national income as affected by the war', 193.

[238] Gilbert, 'War Expenditures and National Production', 10.

calculated in relation to the total of net national income but rather the amount of war expenditures compared to gross national income or Gross National Product.[239]

Along with these changes, however, a more fundamental change occurred that is less clear but more relevant. Instead of valuing and measuring government services to business along the line of business enterprises, Gilbert treated government as a final consumer.

'*The concept of gross national product used here is to count all final products and services produced by the economy at the prices these products command in the market. (…) In the case of government, the total of payments to factors of production is included as the measure of the value of government output.*'[240]

Treating government as a final consumer meant that, in contrast to Kuznets, Gilbert did not consider direct business taxes as intermediate consumption and therefore does not subtract this from national income.[241] By modifying their national income concept in this manner, Gilbert and along with him the DoC gradually moved away from the definitions set out by Kuznets during the 1930s, and started adopting concepts more similar to those used by the Stone in the United Kingdom.

3.3.3 A third, lesser known, version of national income

Little has been said about Gilbert's own position on national income measurement during the war. Although the literature on this history accepts the fact that Gilbert functioned during a transitory period and gradually moved away from Kuznets' ideas towards Stone's until this departure in 1951,[242] there is little attention for Gilbert's own position or concept of national income. One of the few histories dealing with this issue, suggests that Milton Gilbert was more or less instrumental to his cousin's, Keynes' and Stone's scheme to implement a new measure and definition of the economy.[243] Yet this treatment, by Mitra-Kahn, does not give credit to Gilbert's contribution to the debate. If one studies his critiques of both Stone and Kuznets, a different image comes to the fore. One in which Gilbert created a position for himself and the DoC separate from that of both Kuznets and Stone. Even though these differences lie in nuances, they should not be overlooked.

As Stone's contributions about the differences between the United Kingdom's and the United States' national income were mainly directed towards the DoC, it was natural that Gilbert would respond to these critiques. Firstly, he corrected Stone by stating that the DoC did not merely measure national income at market prices instead of factor costs, rather, they used both

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[239] Gilbert, 'War Expenditures and National Production',10.

[240] Gilbert and Bangs, 'Preliminary Estimates of Gross National Product 1929-41', 10.

[241] Ibidem.

[242] See: Carson, 'The History of the United States National Income and Product Accounts', 169-174.
Or: Fioramonti, *Gross Domestic Problem,* 32-33.

[243] Mitra-Kahn, Redefining the Economy, 260-264.

concepts.[244] The reasons for this, as well as for the lacking of a presentation of the expenditures side of national income, were stated to be of '*convenience or taste*'.[245] Gilbert explained that the convenience represented an interest in presenting gross figures for the analysis of wartime expenditures. However, Gilbert did go on to state that he found market prices to be a more '*meaningful and fundamental aggregate than the sum of factor costs*'[246]. Gilbert argued that it is more meaningful in the sense that a representation in factor costs is more confusing to the '*untrained consumers of the estimates*' and therefore prefers '*to sacrifice symmetry* [of the representation of the economic system] *to clarity.*'[247]

Apart from some smaller technical issues mainly about the calculation of capital outlays and depreciation, as well as foreign expenditures, Gilbert did agree with a lot of Stone's critiques and appears to follow a similar treatment of taxes and the role of government.

'*In general I agree with mr. Stone's objections to our treatment of corporation income taxes, social security contributions of employers, and inventory revaluations in our measurement of national income. We intend to modify our definition in the future which will partly take care of these objections.*'[248]

That is not to say, however, that Gilbert fully accepted all of Stone's treatment of government expenditures and value as a part of national income. For example, in the case of government debt interest payments, Gilbert went beyond Stone by including these in government output.[249] In contrast to Stone, Gilbert was ambivalent as to why government debt was created; Stone was more lenient on this point, as he excluded interest on government debt created for the war effort from government expenditures. For Gilbert, interest payments on this debt should be included as the decision is made to continue the debt rather than pay off the bond. Since the bondholder offers a service to government by having lent these funds, the interest should be considered as income.[250] In spite of these small technical differences, Gilbert agreed with Stone that national incomes should become more comparable.

'*From recent discussion in the public press it is evident that for better or for worse, compositions of national income and its various components will enter into the politico-economic thinking of the*

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[244] Milton Gilbert, 'U.S. National Income Statistics', *The Economic Journal* 53-209 (1943) 76-82, 76

[245] Ibidem.

[246] Ibidem.

[247] Ibidem.

[248] Ibidem, 81.

[249] Ibidem.

[250] Ibidem.

future. It will surely seem an imposition to the statesman and other practical persons if he is confounded in his arduous tasks by conflicting definitions and terminologies."[251]

From here on out Gilbert and Stone would play an important role in the standardisation of national incomes after the war, as we will see in the next chapter.

As has become obvious in 3.3.2 Gilbert's main body of work during the war was related to changing national incomes to enable the creation of war ratios of national income. When Kuznets published his National Product War and Prewar in 1944 and suggested that the official estimates created by the DoC were misrepresentations, Gilbert was obviously keen to comment. In his commentary of 'War and Prewar', Gilbert lamented Kuznets' figures claiming:

'*Professor Kuznets attempts in his recent study to resolve a problem that has long been considered insolvable. It is to construct a comparable index of the national product over a period in which the composition of output has changed dramatically, in this case over the period of transition from peace to war. The attempt must be judged a failure — in the sense that the central difficulty of comparing incomparables is a far from a solution as ever.*'[252]

Gilbert took issue with the new wartime concept used by Kuznets to serve the two distinct purposes as we have seen in 3.1.2. According to Gilbert, this new concept lay somewhere in between his earlier concept and the one used at the DoC under Gilbert. Gilbert did not put much effort into combatting Kuznets' wartime concept other than highlighting that Kuznets and the DoC used different concepts, and when compared to the DoC's figures and 'other known data' Kuznets significantly underestimated the expansion of 'Gross National Product' during the war.[253] Gilbert argued that this underestimation by Kuznets was due to his deflation of wartime expenditures to a 1939 base. According to Gilbert: '*There is no justification for using the value of munitions and war construction for 1939 or any other year in the period as a weight for combining with other types of output throughout the period.*'[254] Mostly, this is due to the fact that technical innovation and qualitative changes during the war meant that much items don't resemble their prewar counterpart. Moreover, many of the armaments used for war did not exist yet in 1939 so there is no way of comparing them. Gilbert concluded by still praising Kuznets' courage to tackle the issue of comparing the evolution of national income through the war. Yet both practical and fundamental uses are met just fine by the undeflated figures and concepts produced by the DoC.[255]

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[251] Gilbert, 'U.S. National Income Statistics', 82.

[252] Milton Gilbert et al., 'National Product War and Prewar: Some Comments on Professor Kuznets' Study and A Reply by Professor Kuznets', *The Review of Economics and Statistics* 26-3 (1944) 109-135. 109.

[253] Ibidem, 116-117.

[254] Ibidem, 111.

[255] Ibidem, 118.

3.4 Summary

In spite of all their differences, which are too many and too complex to summarise again, one interesting similarity between each of these authors during the Second World War, is that each author repeatedly accepts the idea that there are different means of compiling, constructing and presenting national incomes, neither of which is necessarily right or wrong. The choice for income concepts were wholly dependent on the purpose to which the national income is collected as well as the preference of the compiler. This rather open attitude to multiple possible concepts and methods would change quickly after the war, as we will come to see in the final chapter.

Nevertheless, each author does seemingly have a different concept of 'the economy' in mind when formulating his version of national income. Most distinctively, according to Kuznets, the economy serves to provide for the population's needs and national income measures the extent to which economies are able to do this. Because of that it is natural that he chooses to measure national income at market prices and measures the government by using a payment price method as this is what people actually pay for all of the commodities and services they require. This is why Kuznets saw many of the faults with the use of national income that are still prevalent today.

Stone on the other hand seems to have had a different view of the economy in mind. Although he was by no means less idealistic about the goals of national income, he approached the subject from a much more systematic angle. 'The economy' was the productive system and 'private disposable income' was merely a part of this. Stone wanted to understand how the system works in order to be able to tinker with it and in that manner provide either for the war effort or to reduce unemployment. Moreover, Stone had a vastly different understanding of the role of government than Kuznets appears to have had; in a more Keynesian frame of mind Stone did not see how Kuznets could value government and government saving in a similar manner as business. As such he saw the government as a separate sector and valued it through the 'cost principle' as a final consumer. Finally, we should not forget to appreciate the fact that Stone's national income and even his formulation of a private disposable income was in service of the war effort and a part of Keynes' Ideas formulated in 'How to Pay for the War'.

Lastly, although Gilbert appears to have changed his mind from appreciating Kuznets' concept to a wholly different one, we cannot say for certain whether he changed his mind or was rather promoting the ideas dominant at the DoC, which were 'Kuznetsian' at first and were changed according to Gilbert's own ideas. What we can say with more certainty is that the war played a massive role in Gilbert's new concept as he opted for a gross measure (GNP) rather than a net measure in order to make national income more applicable for the creation of war ratios. Although their concept moved further from Kuznets' original concept towards a concept similar to that used by Stone, Gilbert's and the DoC's national income should be considered in their own right. Their definition of national income differed from Stone's significantly in the sense that they

preferred measurement at market prices rather than factor costs as well as a gross measure rather than a net measure of ‘the economy’ and national income.

4 The debate that standardised GNP/GDP

Resuming on what has been discussed in the previous chapters, some remarks should be made that are relevant to the last part of this thesis. As has been argued in chapter 1 there is a strong reciprocal relationship between war, tax and the development of national income statistics. If anything, the third chapter has given more weight to the theory that war, in this case the Second World War, is a major catalyst for the development of national income statistics, both in an empirical (amount of data collected) as well as a theoretical (the development of concepts ideas and accounting systems) sense. When the Second World War was drawing to a close, however, something unprecedented occurred, something that was not seen in the history of national income: national income concepts and the systems of national income accounting were internationally institutionalised according to a new international consensus. This does not mean that all national income statistics in the world were suddenly compiled in exactly the same manner.[256] However, the international consensus reached in the last year of the war and the first decade after the war, provided guidelines to make national incomes across the world more comparable. Observing that there were so many differences between the authors, as has been shown in chapter 3, one of several things could have happened. Either some of the differences between the authors were resolved, or one or two of the scholars were excluded to make way for one of the three definitions and concepts. To a certain extent, both occurred. Stone and Gilbert reached a consensus rather easily and ousted many of the critiques formulated by Kuznets.

Another reason the consensus was so powerful, however, was the backing by international institutions. The formation of both the United Nations (UN) and the Organisation for European Economic Co-operation (OEEC, the precursor of the Organisation for Economic Co-operation and Development (OECD)) were vital to the standardisation of international guidelines and spreading them across the world. As was shown in chapter 2 both Stone and Gilbert were given high positions within the research departments of these organisations which helped them solidify their consensus. It is important to note that the standardisation of national accounts by these organisations occurred against the backdrop of the shifting of dominance between world powers and the reconstruction after the war. Although throughout history different countries had started drafting national incomes, the international debate was restricted to the Anglo-Saxon world during most of the Second World War. This meant that all theoretical developments made during the war were restricted to this region and strengthened the Anglo-Saxon dominance in the postwar debate.

With this in mind, this final chapter examines how the debate between Kuznets, Stone and Gilbert developed between 1944 and 1953. What consensus was reached? And how was this

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[256] For example, Andre Vanoli has shown quite thoroughly that the development of French national income figures has followed a different trajectory between 1945 and 1968, Moreover, it should not be forgotten, as was mentioned in the footnotes of page 28, the countries controlled by the Soviet Union used a concept of national income that drew on Smith's and Marx' 'material product' concept.
See: Vanoli, *A History of National Accounting*, 100-102, 431-436.

newly formed consensus was backed and stimulated by leading international institutions? In contrast to the former chapter whereby the authors' works and ideas were examined separately, this chapter will look at the events that took place between 1944 and the formation of the first UN System of National Accounts in 1953 chronologically to show the strength of the standardised concept grew over time despite fundamental critiques.

4.1 The 1944 Tripartite Meeting

Although there were many theoretical and empirical differences between the national incomes created at the Treasury in the United Kingdom and the DoC in the United States, near the end of the war there was a strong incentive to standardise the concepts surrounding national income. Standardisation and systemisation had been a part of Stone's work on national income since his 1941 essay with James Meade as has been explained in section 3.2.1. Stone's work on US national income was intimately connected to this programme of international standardisation. For the most part Gilbert was more concerned with drafting national incomes that would serve the war effort, rather than standardising concepts and ideas between different institutions, let alone internationally. Nevertheless, as was explained in section 3.3.3, Gilbert agreed that for 'practical men' it would be more convenient to standardise the jargon of national incomes as well as methods to compose them. These incentives paved the way for the first meeting on the international standardisation of national income.

The literature is unclear about who took the initiative for this meeting. The safest bet would be that it was a joint effort directed by both the United States DoC and the central statistical office of the British Treasury. Although it was initially planned that Stone and Gilbert would prepare a joint paper, a shortage of time and the vast geographical distance prevented the drafting of such a paper.[257] The fact that this was planned, suggests that there was more communication between the British Treasury and the DoC and between Gilbert and Stone than is known from the sources thus far. As Stone later recalled during an interview '*in the autumn of 1944 he was sent over the Atlantic to try to reach agreement with the Americans and Canadians on national accounting taxonomy and presentation.*'[258] At first, Stone visited Ottawa to meet with his Canadian peers at the Dominion Bureau of Statistics. Together with George Luxton he then travelled south towards Washington to meet with the delegates of the DoC.

More important than those who were present at the conference was the great absentee. Kuznets did not receive an invitation to contribute to the discussions at the Washington meeting. Although a major reason for this could be that Kuznets was not an official member of the national income division at the DoC, it is odd that one of the authorities on national income was excluded

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[257] Edward F. Denison, 'Report on the Tripartite Discussions of National Income Measurement', In: Conference on Research in Income and Wealth, *Studies in Income and Wealth* (NBER 1947) 3-22, 3-4.

[258] Stone and Pesaran, 'The ET Interview', 93.

from these discussions. In his absence Stone and Gilbert found common ground for the standardisation of national income concepts and methods which would echo throughout the post-war world.

4.1.1 The Bretton Woods of national accounting:

Obviously less known but in the same spirit as the Bretton Woods Conference of the summer of 1944, the tripartite meeting of national income specialists took place in September 1944. The only report on the meeting was documented some time later by Edward Denison who attended together with Gilbert, and several other on behalf of the DoC. In his introduction Denison wrote: '*The discussions were stimulating and led partly through persuasion, partly through compromise to substantial agreement on the most principle matters at issue.*'[259] These principle issues under discussion were: first of all, what sets of tables should be used in presenting national accounts and second, more fundamentally, how the different concepts of national income accounting should be defined.

The conferees agreed on six to seven tables that would represent national income statistics. The first of which would be a table presenting '*the value of the gross national product and its composition by type of product.*'[260] A second table would show the income and expenditure of private citizens divided among taxes, consumption expenses and savings. The third table would be one of the profits and losses of private industry containing sales to private individuals, government, sales abroad, inventory changes at factor cost and the amount of capital used in production. The third account of government receipts and expenditures caused the most controversy and remained unresolved. For the most part, it was decided that expenditures should be classified by the type of service and by type of expenditure relating to the durability of the article. However, there were no agreements on the feasibility and desirability for a government capital and current account. It was agreed, however, that transfer payments should be separated from expenditures.[261] Finally, three more tables should be added on the sources and disposition of savings, foreign accounts and if deemed desirable an account for financial institutions.[262]

Most importantly, the definition of different aggregates of national income were standardised, which would remove misconception about contents of these aggregates, a most important step towards a common understanding of national income.

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[259] Denison, 'Report on the Tripartite Discussions of National Income Measurement', 3.

[260] Ibidem, 5.

[261] Ibidem, 6.

[262] Ibidem, 6-7.

- National income would be viewed as a '*measure of the value of goods and services produced by the economy valued at factor cost.*'[263]
- Net national product, on the other hand, would be a measure of the net value of goods and services produced in the private sector minus the costs of capital consumption or depreciation and including the services of the government valued at their cost (via the cost principle). '*Net national product is equal to national income minus subsidies plus business taxes, business transfer payments and bad debt allowances.*'[264]
- Gross National Product (GNP) would measure all the value of private production at market prices without subtracting the consumption of capital and including the value of government services through the cost principle.[265]

The formalisation and standardisation of these concepts was a major breakthrough as it laid the foundations for the further standardisation of national accounts in the post-war world. Moreover, in spite of there being slight differences over the treatment of a capital account for government, which will be discussed shortly, there was a consensus on the valuation of government that resolved most of the major issues. Something that probably would not have been possible if Kuznets were there. Finally, GNP as the most inclusive concept would become the central concept to the first table presenting national accounts.

4.1.2 Omitting the 'welfare approach' and Kuznets.

The consensus reached by the conferees on so many vital points would not have been possible if they had disagreed on the purpose of national accounts. In his report Denison devoted a full paragraph to the purpose of national accounts as set out by the scholars attending the conference.

'(*…) the fundamental purpose of assembling the body of data termed, rather loosely, 'national income statistics', is to present a set of accounts that portray in summary form transactions in the national economy and facilitate analysis of its structure and development.*'[266]

Denison went on to argue that this system emphasised the different relations between various sectors of the economy and between types of transactions. He then contrasted these ideas of national accounts to what he referred to as the '*welfare approach to national income measurement*'[267] This method was categorised by Denison as one that seeks to obtain unique series to measure changes in welfare. Although not mentioned literally, the 'welfare approach' clearly refers to Kuznets' ideas about national income and the term seems to have stuck

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[263] Denison, 'Report on the Tripartite Discussions of National Income Measurement', 7-8

[264] Ibidem, 8.

[265] Ibidem.

[266] Ibidem, 4.

[267] Ibidem.

throughout the decades. As was seen in section 3.1.4, Kuznets emphasised the use of national accounts to measure is to '*provide for the population's needs*'.[268] Moreover, on occasion, Kuznets argued in favour of a measure of economic development that omits all those goods and services that do not benefit society.[269] On this Denison states that the proposals do not '*suggest the elimination of any data analysts may consider useful in the measurement of economic welfare*'.[270] However, national income should not be a measure of welfare and such ideas should not be represented in the aggregates of national income.[271]

These differences in the purpose of national accounts were quite explicit. Yet it remained unclear what these meant in an empiric sense. As was to be expected from chapter 3, the major difference between the new consensus and Kuznets' ideas revolved around the valuation of government. It is even explicitly mentioned that the treatment of government set out by the conferees should be clearly separated from that of Kuznets.[272] Quite remarkably, the DoC conceded to Stone concerning the exclusion of interest payments on the national debt. Gilbert specifically noted that he disagreed with this 'British methodology' in an earlier response to Stone, as was shown in section 3.3.3. However, the conferees appear to have been persuaded by Stone in viewing the payment of interest in order to not pay off national debt made on behalf of the war effort does not constitute a service.[273] The most fundamental difference with Kuznets' ideas, however, was the valuation of government at the cost priciple. This was to be expected as Stone and Gilbert were already in agreement on this point. Nevertheless this decision was not made explicit until this point. Denison wrote:

'*No deduction from the value of government will be made to eliminate indirect government services (government services to business) none of the participants believed such a distinction feasible, and some were not convinced of its necessity or desirability.*'

Not making such a deduction for government services to business implied that government is viewed as a final consumer rather than treated similar to business enterprise. This change would have been unacceptable to Kuznets, as will become more evident below.

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[268] Kuznets, National Product War and Prewar, 1.

[269] Simon Kuznets, 'National Income and its Composition; Discussion Between Simon Kuznets, Clark Warburton and M.A. Copeland', *NBER Studies in Income and Wealth Series* 1 (1937) 35-45, 37.

[270] Denison, 'Report on the Tripartite Discussions of National Income Measurement', 4-5.

[271] Ibidem.

[272] Ibidem, 9.

[273] Ibidem.

4.2 League of Nations, UN and Stone's 1947 Memorandum

The 1944 tripartite meeting should be considered a milestone for the standardisation of definitions and concepts of national accounting. For the first time in history, international agreements were made about what should be included in national accounts and how they should be composed. Yet in spite of the novelty of such agreements and standardisation, geographically the results of the tripartite meeting were limited. After all, the meeting was restricted to the United States, the United Kingdom and Canada, and although these countries were among the victors of the Second World War, that did not directly imply that their methods of national accounting would be adopted by the majority of the western world after the war. Newly formed international institutions played a tremendous role in standardising national income concepts practices internationally.

As with much of the creation of the post-war world order, United Nations (UN) played a pivotal role in the internationalisation of national accounting. However, the history of the UN and national accounting goes back even further than the Second World War. In 1928 during an international conference regarding economic statistics in Geneva representatives of several countries agreed that international guidance was needed for the creation of national accounts. Over 10 years later, the League of Nations decided to include the measurement of national income under its mandate.[274] Obviously, the Second World War got in the way and it was not until 1945 that the idea was rekindled. As was described in section 2.2.3, before Stone became the head of the Department of Applied Economics at Cambridge, he took some time of to go to Princeton and visit Winfield W. Riefler, a member of the American Board of Economic Warfare who was stationed in London. Here Stone encountered Alexander Loveday who inquired whether Stone was willing to write the long overdue report on national income for the League of Nations.[275]

Stone agreed to take on the job and wrote a draft version for the report between August and December of 1945, after which a committee organised by the League of Nations convened between 17 and 20 December 1945 to finalise the report. This committee of experts was headed by Stone but also included members from Australia, Canada, the United States, the Netherlands, Norway, Mexico and Switzerland. Although the group was far more international than the preceding tripartite meeting, it should be mentioned that most of these scholars were most likely already aware of the developments of the national income debate within the Anglo-Saxon world. For example: Raúl Ortíz Mena, the Mexican representative, had studied economic statistics at Harvard and Chicago during the early 1940s.[276] Arne Skaug, the Norwegian representative, made regular scholarly trips to London as an employee of the Norwegian Statistical Bureau prior to the war and

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[274] The Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts, *Measurement of National Income and Construction of Social Accounts* (Geneva: United Nations, 1947) preface.

[275] Stone and Pesaran, 'The ET Interview', 94.

[276] Sarah Babb, *Managing Mexico: Economists from Nationalism to Neoliberalism* (Princeton 2001) 83.

lived worked as an assistant professor in economics in America during the war.[277] Finally, the Dutch representative J.B.D Derksen visited Stone in September 1945 to exchange ideas prior to the discussions of the committee.[278] The draft version of Stone was accepted without much debate,[279] but it was not until 1947 that the report was published by the now renamed United Nations.

4.2.1 A system of transactions

The 1947 UN report on the measurement of national income consists of two parts. The former is a 19-page report by the League of Nations Committee of Statistical Experts headed by Stone, the latter is an 89-page appendix containing a memorandum written by Stone prior to the meeting of the committee in December 1945. Basically, the report by the committee can be seen as a summary version of the appendix written by Stone. Although the committee acknowledged that the system presented by Stone in the memorandum is much too complex for nations whose statistical data was not as developed as the UK or the US, the committee argued in favour of using of this system as a conceptual framework.

'*It is recognised that the detailed system (…) May appear somewhat formidable, particularly in cases where comparatively little statistical information is available. It is important to realize however that such a system provides a clear insight into the many cross-checks which are latent in systems of transactions and it is useful conceptually at any rate, especially in countries with limited statistics.*'[280]

The definitions used in the memorandum clearly echo the consensus reached at the 1944 meeting. '*The national income or product which is the basic aggregate in this field provides a measure of the total value at factor cost of goods and services produced (…)*'[281]. Moreover, the report clearly stated that the concepts and ideas discussed are no '*radical innovation*'[282], instead the committee considered the report as well as the memorandum as '*a logical development of recent investigations*'[283]. Still, there was an important difference in nuance between the way in

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[277] Stortinget, 'Arne Skaug' (version unknown) https://www.stortinget.no/no/Representanter-og-komiteer/Representantene/Representantfordeling/Representant/?perid=ARSU (viewed 31 October 2016).

[278] Gert P. den Bakker, 'Dutch National Accounting: A History' in: Zoltan Kenessey (ed), *The Accounts of Nations* (Amsterdam 1994) 66-92, 72-73.

[279] Matthias Schmelzer, *Hegemony of Growth: The OECD and the Making of the Economic Growth Paradigm* (New York 2016) 94.

[280] The Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts, *Measurement of National Income and Construction of Social Accounts* (Geneva: United Nations, 1947) 19.

[281] Ibidem, 23.

[282] Ibidem, 8.

[283] Ibidem.

which national accounts were presented in Denison's report of the tripartite meeting and Stone's memorandum. Whereas the tripartite discussions were concerned with the presentation and standardising definitions of aggregates, the memorandum presents national accounts in a more technical and abstract manner and is concerned with how national accounts should be constructed in a systemised way. Doing so also meant following Stone's conception of both 'the economy', as well as national accounts in terms of a 'system of transactions'.

'*The result of this part of the enquiry will be a picture of an economic system viewed as a system of transactions presented in such a way that the various national aggregates can be obtained by adding together the appropriate entries in the different accounts.*'[284]

Instead of making the total aggregates such as net or gross national product the central object of enquiry, Stone made it clear that his approach uses 'economic transactions' as the starting point of his enquiry. This did not mean, however, that Stone suggested to record the transaction of each individual company or family unit individually. Rather, Stone proposed to '*group these transactions together into a manageable number of classes.*'[285] As such the perpetual problem of drafting national accounts is weighing how far the convener of accounts should go in combining accounts without losing to much detail.[286]

It cannot be emphasised enough that Stone's saw 'the economy' as a system. By using cross-checks Stone tried to make sure that this system balances out. Moreover, by recording every transaction twice, both as expenditure and income Stone sought to highlight the relations between the different accounts in his system.[287] The system used in his memorandum was modelled after an advanced industrial economy in which monetary transactions are dominant. Moreover, the sectors and accounts chosen reflect those that were in use during that time and are as much as possible based on the 'real world'.[288] Nevertheless, Stone argued that there is no uniquely right way to combine different accounts and transactions to form a coherent and representative system, this should be left to the individual compiler, as long as the system checks out.[289] In other words, so long as it balances out without any loose ends.

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[284] The Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts, *Measurement of National Income and Construction of Social Accounts* (Geneva: United Nations, 1947) 24.

[285] Ibidem, 27.

[286] Ibidem.

[287] Ibidem, 26-27.

[288] Ibidem, 24.

[289] Ibidem, 27.

4.3 Kuznets' critique and Gilbert's response

As a result of the developments at the tripartite meeting and the League of Nations Committee of Statistical Experts, the DoC made some serious changes to their concepts as well as their method of compiling and presenting them. Because Kuznets was not invited to the 1944 meeting, as well as the League of Nations Committee of Statistical Experts, his approach, which was described by Denison as the 'welfare approach'[290], was definitively dropped in favour of a system of national accounts.[291] Although Kuznets continued to publish national income time series, most notably his 'National Product since 1869' (1946),[292] he became the most vocal critic of the system of accounting. In a 1948 review of the national income figures produced by the DoC in 1947 over the year 1946, he questioned both the new concepts used by the DoC as well as the advantages of a system of national accounts. In spite of all its achievements, Kuznets stated that this new national income was to become '*one of the most used, and misused, sources of economic information.*'[293]

First of all, Kuznets' criticism echoed throughout his review, is that national income as represented in the new DoC figures did not represent his view of 'n*ational income as a net product total, and by the requirement that netness can be defined only in relation to some end-goal of economic activity.*'[294] As was seen in his earlier discussions of national income, Kuznets' national incomes always serve a specific purpose: to provide for the needs of the population. Only in wartime, the purpose of this endeavour was expanded to include providing commodities for the armed conflict.[295] Kuznets echoed this principle in his review when he assumed that '*the final goal of economic activity is provision of goods to consumers.*'[296] As such he had trouble with the 'netness' assumed by this new system of accounts.

4.3.1 The system and its discontents.

The first arguments of his review dealt with the question: whether the use of a system of national accounts contributes in any way to the problems of '*scope, netness and consistency of valuation*'[297]. In discussing this Kuznets touched on some interesting points. For example, he questioned the use of balance sheets and the accounting framework and wondered why this

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[290] Denison, 'Report on the Tripartite Discussions of National Income Measurement', 4.

[291] Kuznets, 'National Income: A New Version', 152.

[292] Simon Kuznets and Lillian Epstein, *National Product Since 1869* (NBER 1946).

[293] Kuznets, 'National Income: A New Version', 151.

[294] Ibidem, 151.

[295] Kuznets, National Product War and Prewar, 1.

[296] Kuznets, 'National Income: A New Version', 156.

[297] Ibidem, 152.

should be a '*national income and product account*'[298] rather than '*two estimates of gross national product.*'[299] Moreover, Kuznets questioned why the left side of the balance table, which usually represents debits, consisted of income shares and taxes. whereas the right, credit, side consisted of expenditures. '*The sides may just as well be reversed*'[300]. To Kuznets this representation of the economy seemingly implied that shares of income and taxes are charges against production.[301] These and other confusions, led Kuznets to conclude that the accounting technique does little to help determine the scope of national income.

Kuznets argued that the system did not solve problems of definition. '*On the contrary the impression is that these problems were solved without the benefit of the system of accounts, and that the system of accounts was constructed to fit the solutions.*'[302] Moreover, Kuznets worried that putting monetary transactions at the heart of national accounts might divert the investigator's attention from '*the real flow of commodities and services, as a focus on the monetary transaction does not force the compiler of national accounts to look deeper than 'the monetary surface*'.[303] This point will be elaborated on in section 4.4. In all Kuznets lamented the assumed benefits of a system of accounts.

'the contribution of the system of accounts to the solution of scope, netness and valuation in defining national income is either zero or may even be negative (…) these solutions as well as the distinction of components in terms of complexes of real forces are antecedent to rather than flowing from the system of national accounts'.

In other words, the systemised representation of national accounts in such a framework is unacceptable for Kuznets as the compilation of national income should follow the structure of the economy rather than lay a framework of interrelated accounts on the economy to measure it accordingly.

Kuznets did not restrict his discontent to the use of a systemised accounting framework. As shown in section 3.1.3, Kuznets had a different understanding of the role of government within the economy and its value in national income. Therefore, he continued to criticise the valuation of government by the DoC as a final consumer.[304] Kuznets argued that this means that: either the government exclusively provided goods to ultimate consumers and nothing to benefit business enterprise or that the government is an entity whose needs are raised to the same status as those

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[298] Kuznets, 'National Income: A New Version', 152.

[299] Ibidem.

[300] Ibidem.

[301] Ibidem.

[302] Ibidem, 153.

[303] Ibidem, 154.

[304] Ibidem, 153.

of its citizens.[305] Both were unacceptable to Kuznets. The former would imply that all types of economic legislation and administration were not a services to businesses but rather to final consumers. One can hardly argue that a guarantee of contracts and property rights are merely services to consumers. The latter implied that war and war production represented a direct service to final consumers. Yet Kuznets argued that keeping and maintaining peace, even though sometimes through arms, '*is a condition of economic production rather than an activity directly yielding final economic goods.*'[306] According to Kuznets, this represented '*fetishism, with dangerous implications*'[307]. For Kuznets, the fact that a majority in a democratic society deemed certain government activities necessary, did not imply that these expenditures were made to supply final products to ultimate consumers. Expenditures and activities can just as well be consumed by business enterprises or for the own organisational structure of government.

Finally, Kuznets returned to the question of market prices and factor costs. Considering his ideas about: 'delivering final products to consumers', Kuznets was naturally in favour of using a net national income that measured national income at market prices rather than factor costs. As can be recalled from chapter 3, until the end of the war the DoC measured net national income at market prices rather than factor costs. However, in line with the agreements made at the tripartite meeting the DoC switched to net national income at factor costs. Naturally, Kuznets criticised this change. He did so by questioning the concept itself. Kuznets defined factor costs as costs paid by enterprises who employ or '*engage the factors*'.[308] Therefore, factor costs when discussed from the viewpoint of enterprise should exclude profits, because they are not costs. Moreover, as the Government provides services that are relevant to the final product the costs of government services paid in the form of taxes should be included. Kuznets refers to these as '*factor costs incurred elsewhere*'[309]. As such, the concept of factor costs employed by the DoC which excluded direct tax but included business profits '*falls between two stools: it is too narrow for measurement from the social standpoint and too wide for measurement from the business standpoint.*'[310]

4.3.2 The Department of Commerce defends

In the same issue of 'The Review of Economics and Statistics' Gilbert and his fellow scholars at DoC gave an extended response to Kuznets' criticisms on the new system of national accounting.

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[305] Kuznets, 'National Income: A New Version', 156.

[306] Ibidem.

[307] Ibidem.

[308] Ibidem, 157.

[309] Ibidem, 158.

[310] Ibidem.

After paying homage to Kuznets' '*pioneering contributions*'[311] to national income accounting in the past, the reply continues to explain the rationale of the DoC's choices for the adoption of these new methods.

In order to defend the choice for a system of accounts and the centrality of this system in presenting national income. The DoC agreed with Kuznets' critique that the system of accounts did not solve the problems of defining national income aggregates.[312] However, Gilbert and his co-authors stated that they did not quite understand the poignancy of Kuznets' critique. Moreover, the DoC stated that they '*fail to see the relevance*'[313] of Kuznets' critiques on the use of the term of 'national income and product account' or the use of 'account' in general with a debit and a credit side to it.

'*The fact is that an account can be used for whatever one wants to keep account of, whether it be cash inventories, capital, equipment, depreciation, international transactions, receipts and outlays, or anything else in which the debits and credits are logically related. (…) The rationale of the national income and product account lies in the fact that it consolidates the transactions arising out of the production of goods and services in the nation's economy,*'

Because the authors of the DoC claimed not to understand Kuznets' criticisms, they proceeded to explain what in their eyes would be the advantages of the 'accounting approach'. Fundamentally the advantage deemed most important is the notion that using a system of accounts helped to uncover the structure of the economy. Uncovering this structure helped economists to analyse and understand the way the economy functions. The DoC argued that uncovering this structure would equally benefit the convener of statistical information as the collection of data would be organised in a more systematic and structured manner. These arguments echo those made by the League of Nations Committee of Statistical Experts.[314] Moreover, the DoC argued that the accounting approach helps with the consistent treatment of difficult entities such as financial intermediaries, non-profit institutions and imputed income. One of the more surprising advantages mentioned by the DoC are the pedagogical benefits, by which the authors meant that it is easier to convey the ideas and meaning of national income aggregates to laymen and students.[315] Moreover, they implicitly criticised Kuznets' explanations and concepts for being too difficult to grasp, in contrast to the more explicit and simple method of accounting.

The second part of the DoC's response was dedicated to the conceptual and definitional problems raised by Kuznets. These differences revolved mostly around the treatment and

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[311] Milton Gilbert, et al., 'Objectives of National Income Measurement: A Reply to Professor Kuznets', *The Review of Economics and Statistics* 30-3 (1948) 179-195, 179.

[312] Gilbert, et al., 'Objectives of National Income Measurement, 180.

[313] Ibidem, 181.

[314] Ibidem, 181-182.

[315] Ibidem.

valuation of government. The DoC made it clear that they regard general government as a final consumer or 'ultimate buyer', because along with consumers and non-profit organisations, '*their purchases are not elements of costs in the value of other output produced for the market.*'[316] (This naturally excluded the surplus of government enterprise whose consumption is still considered intermediate, hence only the surplus of government enterprise is added.[317]) In contrast to Kuznets, the DoC did consider all purchases made by the government to be consumption on behalf of the population. Stating that those goods and services are '*provided on behalf of the population as a whole, which it has been found better to secure collectively than individually.*'[318] Regarding the question: whether services provided by the government are services to individuals or to businesses, the DoC argued that activities such as security dealings as well as law and order are not merely services to business but equally to individuals, and are more likely '*"costs of our business civilisation" rather than services to business.*'[319] Moreover, the DoC claimed to have found no categories of governments services that are consumed strictly by business rather than both business and individuals.[320] As for separating the costs of services consumed by both business enterprise and individuals, Gilbert and his co-authors refrained from such ideas based on two arguments. First of all, they assume that over short periods of time the problem is insignificant. Secondly, they claim that there is no purely logical solution to the problem as of that moment.

'*If professor Kuznets or anyone else can construct a national product adjusted for changes in government services to business which improves the aggregates in the uses to which they are put, he will have established the case for his solution. Until then one may assume that this is another of those difficulties of measuring real national product that are not amendable to quantitative solution.*'[321]

In defending the switch to a measurement of factor costs, Gilbert and his fellow authors retorted that factor costs are the services rendered by the agents of production: labour capital, entrepreneurship and nature. Business profits are therefore included as the cost of the service of entrepreneurship. To Kuznets this made little sense from both the social and the business standpoint, and he therefore asked factor costs to whom. To this the DoC replied: '*We would simply say that they are costs incurred by final buyers of output for the services of the productive resources embodied in their purposes.*' In short, the DoC did not consider the tax levied on final product as a service that adds to production.

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316 Gilbert, et al., 'Objectives of National Income Measurement,, 183.

317 Ibidem.

318 Ibidem.

319 Ibidem, 185.

320 Ibidem.

321 Ibidem, 187.

4.3.3 Inconsumerable economies?

Regardless of all the technical details of the debate between Kuznets and the DoC, the core of the argument boils down to what the convener of national income should measure. In other words: what is 'the economy'. As was discussed earlier in section 3.1.4, Kuznets had his mind on measuring of products that add to the national welfare, measured in consumption. As such he sought to exclude production that is not consumed in the traditional way and therefore does not add to societal welfare such as arms and war expenditure. The '*fetishism with dangerous implications*'[322] when considering government as a final consumer lies in the fact that loads of government activities do not constitute actual production. On this Kuznets states: '*it must be clearly recognized that the total we are seeking is that of product, of the end result of activity - not of the volume of activity itself.*'[323] Gilbert and his fellow authors appreciated this difference: '*We believe it correct to state that professor Kuznets is primarily concerned not with establishing criteria for constructing a measure of total production at any time, but with comparisons of economic welfare over time or from place to place.*'

Throughout their texts Kuznets and Gilbert use similar words with different meanings which accentuates the idea that their theories are incommensurable. In Kuhnian terms, they are speaking from different conceptual matrixes. That is not to say that they did not understand each other, but rather, they each define 'the economy' differently. Because the definitions used by Gilbert and the DoC were similar to those being standardised internationally under the leadership of Stone, the Kuznetsian definitions and ideas were pushed out. They were simply incompatible with the rising international consensus of definitions. However, there was a second important reason why Kuznets' ideas were not fit for international standardisation as the remainder of this chapter will show.

4.4 Only fit for an industrial economy

Kuznets' criticism, on the new system of national accounts in the United States drew much on his ideas about the definition of 'the economy'. Yet in order to fully appreciate Kuznets' stance on the international standardisation of national accounts we need to look at more than simply his criticism of the DoC. He equally questioned the possibility and desirability of using a single system to measure structurally diverse economies on an international level. When discussing this critique, three previous points should be kept in mind. First, as has been shown at the start of section 3.1, Kuznets deemed infrastructural expenses a necessary cost to make the industrial economy function properly, and when comparing economies of different industrial standings these are best left out.[324] Second, as mentioned in section 3.1.1., Kuznets argued that the definition of production

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[322] Kuznets, 'National Income: A New Version', 156.

[323] Ibidem, 157.

[324] See section 3.1.

used in national accounts is *conditioned by the institutional set up of the family and of economic society, the line between economic and non-economic activity shifts from country to country and from time to time.*'[325] Third, it is important to recall from section 2.1.2 that Kuznets' post-war research dealt with questions of inequality and economic development, especially industrialisation.

Kuznets' paper 'National Income and Industrial Structure' (1949), presented at the meeting of the Econometric Society in September 1947 reflects all three of these points, all the while drafting an elaborate critique of systemised and standardised national accounting practices which is still relevant today. To some extent it can even be seen as a missing link between Kuznets' work on national income and industrial development. Surprisingly this part of the debate on the standardisation of national accounts is barely mentioned in any of the literature surrounding the history of national income.

4.4.1 Apples and oranges

Kuznets' paper presented at the conference of the Econometric society set out from a simple assumption: the way in which the economy is structured has implications that matter when measuring a nation's output. As a consequence, comparing differently structured economies by using a measure designed for only one of these economies is inherently flawed. This would make Stone's programme of creating a universal international framework for the measurement of national income impossible. More accurately, comparing industrial and pre-industrial economies according to the measurements designed for industrialised countries tremendously skews the gap between the two. In fact, this is what Kuznets intended with looking beyond the monetary surface explained in section 4.3.1.

'*If we accept the formal accounting practices followed in the several countries and do not concern ourselves with what in fact happens under the money surface of economic circulation, we avoid many of the problems involved. The results, however, will be of limited use, (…)*'[326]

Kuznets persisted that net national income can only be defined in relation to the end goal of economic activity which is providing goods and services to consumers. In this critique Kuznets showed that what is consumed can be vastly different and the manner in which similar products are consumed can vary greatly. He thus touched on problems regarding domestic labour as well as the value of consumption required for production. Lastly, he dealt with questions of consumption needed to participate in society. Regarding the gap of income between industrial and pre-industrial countries, Kuznets shows tremendous insight and empathy towards pre-industrial societies:

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[325] Kuznets, 'National Income', 209.

[326] Simon Kuznets, 'National income and Industrial Structure', *Econometrica* 17 Supplement: Report of the Washington Meeting (1949) 205-241, 207.

'*The form in which the question was raised — how is it possible for a large portion of the population in pre-indsutrial countries to survive on an income (…) of $40 per year — obviously reflects my bias as a member of an industrial society (…) But were I a member of a pre-industrial society I might well have asked how is it possible for the majority of the population in the United States to dispose of as much as $500 per year,*'[327]

Kuznets understood that the key to this difference is the fact that national accounts merely value monetary transactions. He argued that compilers need to be suspicious when using such a standard for pre-industrial societies. He argued that a large portion of production and consumption in pre-industrial societies did not require monetary transactions, '*And if national income is to be merely a measure of goods exchanged for money, an estimate had better not be attempted for pre-industrial countries at all.*'[328] Kuznets explained that most commodities produced and consumed in industrial nations (barring for instance automobiles radios etc.) such as: manufactured food or clothing, were also consumed by people in pre-industrial societies. However, in pre-industrial societies, most of these commodities are produced within the family unit. As a consequence these productive activities do not involve a monetary transaction and are not included in national income. Therefore, Kuznets argued, production in pre-industrial countries could be significantly underestimated.[329] Moreover, the value of capital formation could be equally underestimated. Kuznets argued that a great deal of capital formation in pre-industrial society took place outside the market. These involved improving the soil, as well as communal construction activities.[330]

Aside from underestimating the value of domestic production in family units, Kuznets continued to echo his critique that several categories of production valued as production in industrial countries do not occur in pre-industrial counties for the simple reason that they are not required. Such commodities and services '*serve merely to offset some of the disadvantages of industrial organisation.*'[331] As such they should be considered as costs, rather than final products. Among these Kuznets mentioned the chain of transportation and distribution between production and consumption. These could be considered as mere offsets to the disadvantages of centralised large scale industrialised manufacturing.[332] Moreover, industrialised society and production require an 'urban pattern of living' which involves many services and production to overcome the inconveniences that urbanisation imposes on the population: not just transportation, but also security, taking care of dwellers and the extra costs of sanitation and waste services.[333] Finally,

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[327] Kuznets, 'National income and Industrial Structure, 210.

[328] Ibidem, 211.

[329] Ibidem, 212.

[330] Ibidem, 220.

[331] Ibidem, 215.

[332] Ibidem, 216.

[333] Ibidem, 217.

Kuznets mentioned the costs of participating in the complex civilisation which include: payments to banks, union fees, employment agencies, which are not really goods flowing to consumers but rather 'activities intended to eliminate frictions in the productive system'[334]. That did not mean that Kuznets deemed these activities useless. Kuznets did appreciate the benefits of these institutions for society. His point was that such services and productions are not necessary in pre-industrial societies and as a consequence, when comparing the two, they should not be included.[335]

Throughout most of his paper, Kuznets made suggestions to make national incomes for industrial and pre-industrial society more comparable. This meant either 'grossing out' production in pre-industrial countries to account for the omission of domestic production, or 'netting out' some services in industrial countries that only occur due to disadvantages of industrial society. Aside from this Kuznets was aware that direct price comparisons are difficult to make and 'comparable prices can only be found for goods '*whose qualitative characteristics are easily recognised and comparable.*'[336]

4.4.2 An indifferent response, or an unfit metric?

Both Gilbert and Stone were present at 1947 the meeting of the Econometric Society in Washington although it is not certain whether the former attended the presentation of Kuznets' paper, as he did not reply to it in the discussion papers that were published in 'Econometrica' along with the papers presented at the conference two years later. Stone, however, did respond to Kuznets but one cannot help but feel as though he did not find Kuznets' points relevant. In line with earlier critique's on Kuznets' work, much like how Kuznets was discussed during the 1944 tripartite meeting, Stone claimed that '*Kuznets is more interested in getting down to the fundamental problems of the comparison of welfare.*'[337] However when it came to welfare Stone immediately questioned whether the term has any meaning in developing systems for national accounting.[338] Stone went on to defend the use of accounting methods and tables with cross-checks because it will allow the statistician creating the national accounts to see 'inconsistencies and what we are doing.'[339]

Stone made two remarks on the international comparison of national incomes, one that is quite obvious but also a second one that illuminates a key difference between Kuznets and Stone. As we can recall from section 3.2.1, ever since the creation of the first system of accounts by

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[334] Kuznets, 'National income and Industrial Structure, 217-218.

[335] Iibdem, 220-221.

[336] Ibidem, 223.

[337] Stone in: Milton Gilbert et al, 'The Measurement of National Wealth: Discussion', *Econometrica* 17 Supplement: Report of the Washington Meeting (1949) 255-272, 259.

[338] Ibidem, 260.

[339] Ibidem, 261.

Meade and Stone in 1941 one of Stone's main goals was to standardise the international definitions of national accounting to facilitate international comparisons.[340] Firstly, Stone mentioned this key point when he questions whether Kuznets is aware that in order to develop accounting systems it is necessary to use accepted conventions and definitions, especially if one attempts to develop a system meant to be used in multiple countries. The second remark however seems a bit out of character and it best to quote it at length before discussing it:

'*Why do we want to compare the United States with, say, China or India? What possible interest is there in it? Everybody knows that one country is, in economic terms, very rich and another very poor; does it matter whether the factor is thirty or fifty or what? I suggest that in default of having solved the intellectual problems, we should content ourselves with comparisons of a rather simple kind; and furthermore that we should not always expect to be able to sum up the relative position in a single figure.*'[341]

For a person who devoted much of his academic career to creating a system that would enable international comparisons of national accounts this seems peculiar at the least. In order to understand this response, we must first make the obvious assumption that Stone did not attribute any value to elaborating on the structural differences between the economies of industrial and pre-industrial societies. Stone preferred simple comparisons between developed industrialised countries. Moreover, Stone appeared to see national accounting more as a policy tool, and from a scientific standpoint he saw national accounting as a method to understand the economic system, rather than a method for scientists and economists to understand economic development. '*I feel that from the scientific point of view we should concentrate our energies on the attempts to solve the intellectual problems and in the meantime leave those in charge with no illusions about the exactness of the comparisons which can at present be made.*'

Nevertheless, Stone did opt to create a metric that increases comparability. To Kuznets, however, comparability without mentioning and appreciating the differences in structure was unacceptable. Kuznets had always eagerly created time series of national accounts to show secular trends and the means by which the economy evolves and changes over time, more akin to an economic historian.[342] Stone on the other hand was much more of an econometrician, interested in the nuts and bolts of it all, trying to see the economic system and understand how the system works so policymakers and civil servants might learn how to tweak it. The attention Kuznets devoted to the peculiarity of economic structures in each country, however, meant that no universal framework would be possible to measure national income. As a consequence, Kuznets' ideas were unfit to create a universal metric of national income. Sadly, this equally meant that his

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[340] Meade and Stone. 'The Construction of Tables of National Income, Expenditure, Savings, and Investment', 216.

[341] Stone in: Gilbert et al, 'The Measurement of National Wealth: Discussion', 261.

[342] It is no wonder that Kapuria-Foreman and Perlman labeled him an economic historians economist. See: Kapuria-Forman and Perlman, 'An Economic Historians Economist: Remembering Simon Kuznets'.

other critiques towards the treatment of government, government services to business and market price over factor costs would not find their way into the new standardised concept of national income. Stone's and Gilbert's concepts on the other hand did enable the creation of an internationally standardised concept.

4.5 Standardisation solidified

In spite of Kuznets' criticism, the fact that his concept was incompatible with a universally similar metric meant that he had little influence on the ongoing standardisation of national income concepts. During the late 1940s both the OEEC and the United Nations got more actively involved in this standardisation of national income concepts and methodologies. However, in order to understand the involvement of the OEEC, some remarks should be made about its formation and evolution of this institution in its first few years.

According to Matthias Schmelzer, the OEEC faced two organisational crises in the first decade after its creation. The first in the early 50s when the Marshall Plan was nearing its end, and the second one when it was unable to resolve trade disputes in the late 50s.[343] For current purposes it is only necessary to focus on the former. After the Second World War left the European continent in shambles and ad-hoc bilateral aid from the United States did not prevent the situation from deteriorating further, the US Secretary of State George Marshall convinced Congress that long term economic aid was necessary to enable European recovery. In the following weeks France and Great Britain assembled a Committee, the Committee for European Economic Co-operation, to draft a report on the recovery programme that was submitted to the US government in September 1947. From this committee the OEEC was formed in April 1948 to administer the funds of the European Recovery Plan (ERP), but also to promote trade liberation and found a European Payments Union. However, as the funds of the ERP diminished in the course of 1950 and 51, the organisation obviously lost its purpose.[344] Knowing that the organisation would lose its main *raison d'être* and due to the fact that the path of Europeanisation and European cooperation would take a different trajectory. The OEEC increasingly developed 'soft-power mechanisms' like policy advice and exerting influence on economic doctrine to achieve its secondary goals and to influence western countries on a supranational level. It is in this light that the role of the OEEC in the further standardisation of national accounting practices should be considered: first as a means to aid in the distribution and allocation of ERP funds, and secondly as a soft-power mechanism to promote and spread economic ideas and practices.[345]

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[343] For an elaborate discussion of the historry of the OEEC and OECD
See: Schmelzer, *Hegemony of Growth,* 34-53.

[344] Ibidem, 38-45.

[345] Ibidem, 102-103.

4.5.1 A Standardised System of National Accounts

After deciding to implement the ERP, the US mandated Economic Cooperation Administration, the office in charge of the administration of the ERP on behalf of the United States, decided to use national income as both a means of distributing aid as well as measuring and monitoring its effects. Despite earlier agreements at the tripartite meeting as well as the 1947 UN report there was still no common standard. Yet it was obvious who would be most suited to formulate such a standard. Sources indicate that the Yale statisticians Richard and Nancy Ruggles suggested the formation of a national income research unit at the OEEC to formulate a standard framework for assembling national incomes.[346] Not all the European member countries agreed that such a project was necessary, mainly because it would distract attention and funds. Nevertheless, United States influence along with the OEEC secretariat were able to push these ideas for a 'large scale revision of European statistical method'[347] forward.

Somewhere in 1949, Richard Ruggles persuaded Richard Stone to become the director of this research unit. Due to Stone's commitments at the DEA in Cambridge, the research unit found a home in Cambridge within Stone's department.[348] At Cambridge, Stone was involved in both the training of statisticians to create national accounts, as well as creating a standardised framework. Late 1950, Stone produced 'A Simplified System of National Accounts' (SSNA) which was presented at the OEEC in Paris.[349] This report was used to prepare a series of national income studies around Europe. Based on these experiences, with active participation of several scholars: Karl Hansen, Milton Gilbert and Geer Stuvel (Gilbert's deputy at the OEEC), Stone drafted 'A Standardised System of National Accounts' in 1952.[350]

In essence, the SSNA is similar to the reports and memoranda by Stone mentioned earlier in this chapter. The definitions of national income, GNP and net national product used in this report are similar to those agreed upon at the tripartite meeting and used in the 1947 memorandum.[351] As such GNP is valued at factor costs, and government expenditure for defence purposes is included on the current account of government expenditures and therefore into GNP. However, it should be noted that in tone, the report is much more rigid and adamant than its predecessors. Whereas we can recall from sections 3.2.1 and 3.2.2 Stone is careful not to state that there is only one way of

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[346] Schmelzer, *Hegemony of Growth,* 103.
Or: Stone and Pesaran, 'The ET Interview', 94.

[347] Quoted in: Schmelzer, *Hegemony of Growth,* 103.

[348] Stone and Pesaran, 'The ET Interview', 94.
Or: Schmelzer, *Hegemony of Growth,* 103-104.

[349] Stone, Richard, 'A Standardised System of National Accounts*'* (OECD Paris 1952), 9.

[350] Ibidem.

[351] Ibidem, 49-50, 75-76.

presenting and defining national income and that presentation and definitions may vary according to taste and convenience, the SSNA states:

'the obvious way in which to obtain a consistent use of such terms as production, income, etc. and one which at the same time leaves nothing out and, in practice, permits them to be translated into quantitative terms, is to set up a comprehensive but practical accounting structure for an economic system and to define production, income etc. in terms of this system.'[352]

To a certain degree this shift in tone could be explained due to the fact that it is a report meant to teach his method rather than an ontological discussion of national income. Still not mentioning any alternative ideas shows Stone's tenacity to push through this method.

4.5.2 The UN System of National Accounts

Aside from the OEEC who felt the need for more elaborate standardisation and manuals on the collection of national income figures, the UN statistical committee was equally keen to stimulate further standardisation and collection of national income statistics among its members. At two consecutive meetings of the of United Nations Statistical Commission it was suggested that a more elaborate '*manual on compiling and reporting national income statistics*'[353] should be prepared. Naturally, due to their earlier experience with Richard Stone, as well as his work with the OEED, Stone was asked to lead the group of experts again. During the summer of 1952 the group of experts convened in New York and within a month they produced a report that could be presented to the United Nations Statistical committee. This report, the 1953 System of National Accounts (SNA 1953) is often considered the new global framework for the collection of national accounting figures and to a large extent marks the end of the debate on the international standardisation and institutionalisation of the GNP concept.

It is often pointed out, no less by Richard Stone himself, that the SNA 1953 was 'very similar to the OEEC's standardized system.'[354] Indeed the preface of SNA 1953 states:

'*The experience of other international organisations, and particularly the work of the National Accounts Research Unit of the Organisation for European Economic Cooperation on a standardized system of national accounts has contributed substantially to the work which is embodied in this report.*'[355]

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352 Stone, Richard, 'A Standardised System of National Accounts*'* (OECD Paris 1952),11.

353 United Nations Economic and Social Council, 'Progress Report on the Programme of work on Statistics of National Income and Social Accounting Including Capital Formation and Other Related Subjects', (version 8 may 1950) https://unstats.un.org/unsd/statcom/5th-session/documents/doc50/1950-89-SocialAccounting-E.pdf (Viewed 13 june 2017) 16.

354 Stone and Pesaran, 'The ET Interview', 95.

355 United Nations Department of Economic Affairs Statistical Office, *A System of National Accounts and Supporting Tables 1953* (New York 1953) preface.

The differences between the two are highlighted to be adjustments to fit the needs of under-developed countries. If we compare this to several critiques made by Kuznets in 'National Income and Industrial Structure', however, these adjustments are rather bleak. Although, in the discussion of the boundaries of production the SNA 1953 mentioned the problem of domestic production, the income concept omits '*the net amount of all non-primary production performed by producers outside their own trades and consumed by themselves.*'[356] In other words, growing grain or rice for own consumption is included, but baking a bread out of the grain is excluded, along with home produced clothing, furniture etc. Moreover, SNA 1953 makes no mention of the commodities and services that offset the disadvantages of industrial production. As such it is difficult to see where SNA 1953 was actually more suited to the needs of under-developed economies than the SSNA.

Nevertheless, SNA 1953 was received with enthusiasm all across the United Nations, with the exception of the Soviet countries of course,[357] and marks the pinnacle of the first era of international guidelines for national income accounting, as well as the final confirmation of the GNP/GDP concepts. Although the SNA would be revised on several occasions throughout the 20th century, the basic concepts of national income and the methods of national accounting apply to the each of the SNA revisions to this day. Rather than changing these concepts the methods of estimation were elaborated and deepened with each revision. For example: the first major revision that led to the 1968 System on National Accounts included Leontieff's input-output analyses, as well as elaboration on the valuation of financial services and regional distribution of national incomes.[358] The SNA 1953 therefore marks the definitive end of the debate between Kuznets, Stone and Gilbert. By this time the consensus that was reached at the tripartite meeting and drawn up in the 1947 memorandum became, more or less, undisputed with the SSNA and SNA1953. Regardless of Kuznets' efforts on multiple occasions to discuss its drawbacks, national income had become a fixed concept.

4.6 Summary

As the Second World War came to an end, delegations from the United States DoC and the British and Canadian Treasuries gathered in Washington to hammer out a consensus on national income concepts and methods. Under the leadership of Richard Stone several key decisions were made about standardisation of these concepts, mainly along Stone's own ideas with slight modifications and alterations by delegated from the DoC. As Kuznets was not invited to this conference because he was not working in the national income unit at the DoC, he could not exert influence on the

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[356] United Nations Department of Economic Affairs Statistical Office, *A System of National Accounts and Supporting Tables 1953* (New York 1953), 5.

[357] Stone and Pesaran, 'The ET Interview', 95.

[358] Stone and Pesaran, 'The ET Interview', 95.
See also: Frits Bos, *The National Accounts as a Tool for Analysis and Policy*, 32-33.

direction of the consensus and the direction international national Income concepts were headed. One stands to wonder whether his exclusion from this meeting was intentional in order to increase the possibility of a consensus. Kuznets' approach, which was referred to as 'the welfare approach' (a name that stuck), was discarded quite easily during these meetings in favour of Stone's and Gilbert's accounting approach as well as valuing government according to the 'cost principle' as a final consumer. Because of their positions, heading the national income projects at the national statistical offices of the countries that won the war, they were able to push through their definitions, ideas and theories with relative ease. It equally granted them access to the leading positions in the national income units of international institutions.

The consensus reached at the 1944 tripartite meeting became the basis for the international guidelines drafted under the leadership of both Stone and Gilbert at the United Nations and the OEEC, who granted the consensus institutional backing and international legitimacy. On several occasions Kuznets sought to criticise and comment on this definition of national income as well as the method of national income accounting on both national (in the United States) and international levels. For Kuznets, the standardised concepts and systems of national accounting were '*compromises geared to the analysis of short-term economic problems in Western countries.*'[359] Yet his critique about national income only being fit to value the economy of an industrial society was more or less ignored. From the perspective of international standardisation, it makes sense that Kuznets' criticisms were discarded. His fundamental assumption that economies with different structures should not be compared within a similar framework, prevented any universal measure for the comparison of national incomes between different countries. One can therefore argue that despite the validity of his criticisms, Kuznets' own ideas were unfit as a base for a universal metric of national income.

By solidifying this system and its definitions the developed world got a mixed inheritance. It gained a powerful analytical tool for the development and planning of the post-war economy. However, and this is the main reason Kuznets became a vocal opponent of standardised GNP/ GDP, what we consider productive and unproductive, valuable and not valuable depends on social standards and historical context. If these contexts change, as they undeniably have in the decades since this debate, so should these measurements. However, because these concepts were standardised and solidified so strongly and became mainstay's of economic and political economic discourse, relatively little ontological changes have been made despite growing criticisms about: the exclusion of domestic production, welfare and environmental sustainability, as was seen in the introduction of this thesis.

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[359] Kuznets in: Gilbert, Milton, et al, 'The Measurement of National Wealth: Discussion', 269.

Conclusion

The United Nations System of National Accounts 1953 (SNA1953) has been revised and updated several times, most profoundly in 1968, 1993 and 2008. Yet the core concepts and methodology have not changed all that much. They still resemble those that were agreed on in the years following the Second World War. This thesis has shown that, many of the problems and criticisms concerning with GNP/GDP relating to the exclusion of household production, gendered divisions of labour, inequality, representations of welfare and the relationship between economic development, pollution and environmental degradation, were already known while these concepts and definitions were being standardised. This standardisation has occurred predominantly along the lines of Richard Stone's and Milton Gilbert's ideas about national income and dismissed Kuznets' critiques relating to valuing economic structure and regarding societal welfare.

In order to answer the main research question of this thesis: How did the standardised definitions and concepts for the measurement of Gross National Product and national income come about, this conclusion will first provide a summary of the most important findings of each chapter. After which I will proceed by answering the two sub-questions central to this thesis. First, I will explain the fundamental differences between the national income concepts of Simon Kuznets, Richard Stone and Milton Gilbert. Second, I will answer why Stone's and Gilbert's versions of national income became the template for the standardisation of national income over Kuznets' 'welfare approach', by giving three explanations: the development of national income concepts of a changing economy during the wartime, the positions of Stone and Gilbert in national and international institutions where they lead the charge of standardisation, and finally, a different conception of 'the economy' and the extent to which economies with different structures can be made comparable. I will proceed by making some suggestions for further research. Finally, I come full circle by making some remarks on the contemporary problems of measuring the economy.

Summary

To begin with, as has been emphasised throughout the entirety of this thesis, the conception and definitions of 'the economy' and 'productivity' are contextually bound and have therefore changed profoundly over time. Moreover, there is good evidence that warfare has continuously incentivised developments of national income mainly through ideas and plans about how to pay for the war. This was the case with William Petty's and Gregory King's invention of national incomes and time series, as well as the development of national income theories at the onset of the 19th century Napoleonic wars and most clearly in Keynes' plans formulated in 'How to Pay for the War' prior to the Second World War. Finally, there is a reciprocal relationship between tax development and the collection of better data to create national incomes. More intense taxation leads to more data available for the creation of national income data which in turn increases the state's infrastructural power and hence their ability to levy taxes more efficiently.

Although Kuznets' main innovations came prior to the Second World War, there was still a strong relationship between the creation of national income data and state incentives to control 'the economy'. This time round, however, the state incentives were drawn from the Great Depression during the 1930s. Nevertheless, state incentivised development of national income proceeded during the Second World War in both the United States and Great Britain, which is when both Stone and Gilbert got involved with national income. As much as the three different versions of national income that were created during this period are contextually bound by the depression and the war. They equally reflect the background and perspectives each of the authors had on 'the economy'. Kuznets, having been educated under the tutelage of William Clair Mitchell, was critical of upcoming econometric methods, but was equally influenced by Mitchell's ideas that that economics and political economy are embedded in societal context. These ideas in combination with the fact that he had worked on labour statistics in vastly different countries shaped his interest in economic development and inequality, which is reflected in his version of national income. Stone on the other hand, having been educated by Colin Clark, had a much more systematic outlook on the economy. This is reflected in his later work in econometrics on demand analysis and his involvement with the Cambridge growth project. Moreover, he was profoundly influenced by Keynes himself which shaped his ideas about government and the way it should be valued. These outlooks on 'the economy' are reflected in his systematic approach to compile and measure national income. Finally, although Gilbert is less well known, it is obvious that he was deeply involved with the United States' war effort, not merely due to his own work but also the close relationship with his cousin Richard Gilbert, who was responsible for the mobilisation of resources for the United States' war effort. This became manifest in his multiple attempts to create an estimate to accurately compare war spending with.

Their respective different backgrounds led each of the authors to create their own specific version on national income prior and during the Second World War. Remarkably, however, during the 1940s each of the authors specifically mentioned that there are different ways to measure the economy, neither of which necessarily right or wrong. Nevertheless Kuznets, Stone and Gilbert each formulated their own distinct version of national income based on their background, their idea of what the economy is and how it should be measured as well as to what purpose it should be measured. Although these differences will be elaborated below, it is quite evident that the Stone's and Gilbert's national incomes were much more similar in approach and purpose than Kuznets' was to either.

As the Second World War drew to a close by 1944, delegates from the British, Canadian and the United States national income departments met to discuss a possible consensus and standardisation of national income concepts that were developed during the war. Because Kuznets was not part of the national income division at the DoC, his ideas and theories were discarded rather quickly during this meeting. Stone took the lead of discussions and the new consensus

closely resembled his ideas about national incomes with some slight modifications. In contrast to the openness towards different concepts and methods for devising national incomes at the beginning of the war (see section 3.4) both Stone's and Gilbert's tone shifted towards a more rigid conception of national income. By standardising the definition of national income and the methods to compile them, they began ousting alternative conceptions and methods.

Kuznets actively criticised this new system of accounting, on both national and international levels. Key to understanding this critique is noticing that Kuznets did not agree with the creation of a system of accounts that did not reflect the economic structures of the country. Due to his interest in economic development he criticised the poor reflection of pre-industrial societies in this standardised version of national income. Nevertheless, the seeds of standardisation were sown. Moreover, Stone's and Gilbert's concepts were designed to increase the comparability of national incomes, which was a goal already sought after by the League of Nations prior to the Second World War. Due to their positions as the heads of the national income research in both the Britain and the United States, Stone and Gilbert were approached to take leading positions in the creation of international standards for national income under the banners of the United Nations and the OEEC culminating in the Standardised System of National Accounts in 1952 and the UN System of National Accounts in 1953.

Three versions of national income

Yet what were the different versions and concepts of national income promoted by Simon Kuznets, Richard Stone and Milton Gilbert prior to the standardisation of national income? As we have seen their respective backgrounds and ideas led to different interpretations and concepts of national income prior to 1944.

In spite of several adjustments Kuznets made to his concept of national income, he continuously argued that the primary purpose of a national income, even in wartime, was to provide people in their needs. Nevertheless, for different analytic purposes Kuznets was prepared to use different tools and versions of national income more suited to the task. This is reflected in his earliest description of 4 different types of national income: produced, received (paid out), consumed and enjoyed. Because 'the economy' served the purpose of providing people in their needs, Kuznets could not accept the government to be valued as a final consumer. Hence, he chose to treat government similar to business via the 'payment price principle'. These choices led Kuznets to value government as an intermediate consumer, as well as valuing production at market prices, and finally trying to assess a concept like 'government service to business'. Yet there is more to Kuznets' views of the economy. Kuznets was determined to portray the national income with as much respect as possible to the reality of the economy within society. This led him to value the economy art market prices as this was the actual price paid for commodities and services. This also led Kuznets to argue that each economy has its own structure within society

that does not necessarily comply to an analytic framework. Accurate representation of production, value and the production that adds to societal welfare, was preferred by Kuznets over having a closed system of accounts. This is why Kuznets did not mind an imperfect system of accounts and did not see much added value in an accounting framework that uses cross-checks between different aggregates of national income.

For Stone on the other hand, having a closed system of accounts with cross-checks in order to balance the system out was a prerequisite. Moreover, being influenced by Keynes, Stone's outlook on the valuation of government was built on the 'cost principle' where government is seen as a final consumer of goods. The fact that he aimed to study the system behind reality made the step to value production at factor cost a more viable option for Stone than it would for Kuznets. Moreover, because Stone valued government through the cost principle, presenting national income at market prices would imply a double counting of government which did not fit well with the rest of his system. Through his systemised outlook he created an analytic framework for the study of national income that served the dual purpose of giving insight into transactions within the economy as well as making national incomes, if produced in a similar framework, more comparable.

The third version made by Gilbert started out similar to Kuznets' ideas but changed as soon as war spending came into the equation. As Kuznets' national income concept did not consider government a final consumer but an intermediate one and valued government according to the 'payment price principle', an increase of government spending on the war was not reflected favourably in national income. Hence, Gilbert started estimating gross concepts of national income. Moreover, he treated government as a final consumer, moving the national income concept at the Department of Commerce gradually towards the concepts used by Stone. Nevertheless, for the duration of the war, Gilbert's ideas differed from both Stone and Kuznets on the use of gross rather than net measures and his preference for the use of market prices over factor costs. Which made Gilbert's national income a third set of concepts and definitions rather than an intermediate one.

Three explanations

So, why were Stone's and Gilbert's concepts and definitions chosen as the templates for the standardisation of national income over Kuznets' more 'welfare based' approach? Based on the research presented and summarised above three explanations come to mind.

First, in order to pay for the war new concepts and methods of constructing national income were developed both in the United Kingdom and the United States. Kuznets' definition was designed to provide information about national income as accurately as possible to combat the consequences of the Great Depression. However, it was not fit for a war economy and did not look favourable at the influence of increased government spending on war material for the size of the economy. The national income concept used by the DoC at the time under Gilbert's supervision

did. Moreover Stone's task was directly related to the British war effort and the programme set out in Keynes' 'How to Pay for the War'.

Yet this explanation on its own is too simple, the influence of both Stone and Gilbert as heads of national income units both nationally and internationally was decisive in pushing through the consensus drafted at the tripartite meeting. From this moment onward, both Stone and Gilbert became international authorities on national income, which led to their appointment as the heads of international committees tasked with the creation of standards for national income accounting by both the OEEC and the UN. As Stone was committed to the standardisation of national income concepts in order to increase comparability and Gilbert shared this ambition they were ideal candidates to lead the charge of standardisation.

However, we cannot merely look to the exclusion of Kuznets' ideas by Stone and Gilbert to explain why his critiques were not incorporated. Standardising national income concepts and methods requires common ground and a common frame of reference, otherwise national incomes would not be comparable whatsoever. For Kuznets, however, putting an analytic frame over the national economy in order to measure national income would not appreciate the structure of the economy and would hence be flawed. But if every form of national income would have to account for the different structures of different national economies whether they are industrialised or not, they would remain incomparable. The purpose of standardisation was to make these national incomes universally comparable. Kuznets rejected the possibility of simple universal comparisons due to differences in economic structures and development among countries. The framework and definitions advocated by Stone and Gilbert did provide a possibility for such simple universal comparison.

Simple explanations such as the idea that Kuznets' 'welfare approach' was '*a peacetime luxury*'[360] are not enough to explain the complex dynamic that led to the standardisation of GNP/ GDP. Rather, Kuznets' definition on national income wasn't well suited for the creation of a war economy, and by far less suited as a framework for the universal comparability of national incomes than Stone's accounting methods.

Further research

This thesis was certainly not shy of ambition. Yet it has to be acknowledged that time and space have placed serious restrictions on this research. Appreciating these limits, however, opens up possibilities to further deepen this research and build on the work that has already been done. Many sources that would have an immense value for this research have as of yet been untapped, predominantly due to the fact that they were not accessible from my current location. As a historian of economic thought, it would be a dream if there was any way to find and access Kuznets' personal archives at the University of Pennsylvania as well as the National Bureau of Economic

[360] Coyle, *GDP,* 14.

Research (NBER). The same could be said of Richard Stone at the University of Cambridge or of Milton Gilbert at the Department of Commerce as well as the OECD. Moreover, certainly both Simon Kuznets as well as Richard Stone as seminal figures in the history of economics would lend themselves perfectly for an in-depth biography to deepen the understanding of their economic thought. As far as is known to me no extensive academic historical biography of either has been written to this day.

Aside from further deepening this research by collecting more and more source material from various places we can also think of research from a more institutional perspective. As Matthias Schmelzer has proven with his history of the OECD,[361] there is much that can be done in discussing the history of international organisations and their influence on economic policy and thought. Similar research could look into the roles played by the League of Nations and the United Nations in stimulating the growing importance of national statistics and national income statistics in particular. But one could also look at the influence exerted by the Cambridge Department of Applied Economics and the 'soft powers' of economic theory on the creation of economic policy.

Lastly, there is still an abundance of work to be done for historians of economic theory to understand just how much the entire field of economics has changed during the Second World War. It is by no means an understatement to say that economics after the war became a completely new field. Not only did Keynesianism become the dominant view of the economy and political economy. It evolved from a moral science akin to history with ties to history, philosophy, sociology into a mathematic science with aspirations to become a natural science. Although much has been done in this respect and continues to be done, this complete overhaul of economics is one of the most exciting processes in the history of economic thought to date. A study of the changing ontology of economics during this period is a subject I could devote lifetime of studying to.

Returning to the problem of GNP/GDP

Rather than starting this thesis with the research question and the debate surrounding this research question, the subject of national income was introduced from the viewpoint of a contemporary problem. Namely, the growing awareness that GNP/GDP is not a measure of welfare and equally a flawed measure of economic development. The most natural thing to do would be to critically assess the problems of GNP/GDP and come up with a solution or alternative, rather than pulling outdated articles about the discussion surrounding the standardisation and institutionalisation of this metric. Hopefully though, the readers of this thesis have come to appreciate the usefulness of examining the history of national income and GNP/GDP.

I believe that several of the critiques discussed during this thesis can be most relevant in the 'beyond GDP' debate. Most fundamentally among these contributions is the fact that national

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[361] Schmelzer, *Hegemony of Growth.*

incomes in general are inherently contextually bound. In turn the GNP/GDP concept of national income, is inherently contextually bound both to the Second World War as well as the industrial economy. In the discussion at the 1947 meeting of the econometric society about the national income and industrial structure, Kuznets clearly showed that the GNP/GDP measurement of national income as proposed by Stone and Gilbert was a measure for the industrial economy and fundamentally undervalued pre-industrial economies. This argument places a serious critique on most of the projects and histories based on historical reconstruction of GNP/GDP.

If we look towards a current critique of GNP/GDP outlined in the introduction of this thesis we might come to another fundamental point. GNP/GDP is a measure of the monetary value of incomes accruing to a nation or region by virtue of its productive activity. But it might be argued that production and productivity have changed profoundly in the past 60 years. Whereas during the 1930s 40s and 50s a large part of production was industrial, most production in 'advanced economies' is service and information based with companies like Google and Facebook becoming a major part of economic and everyday life. At this point it might be argued the economy has for some time now been transitioning from an industrial into a 'post-industrial' economy.[362] In the introduction of this thesis it was shown that GNP/GDP are not a suitable measures of the increased value of the modern information technology which has become a mainstay of 'advanced economies'. If we agree with Kuznets' critique of standardised national incomes in that it is only fit to measure the value of the industrial economy and the economy of the Second World War, we can wonder whether this metric is it still a correct measure of the value in a 'post-industrial' economy?

To be sure, I am by no means suggesting that Kuznets' version of national income would be more equipped to value and measure a 'post-industrial' economy. But Kuznets' critiques and stance towards measuring the economy do give food for thought. The structure of production in an economy and society influences what should be valued and how it should be valued. To that extent the problems of GNP/GDP do not merely relate to what it does not measure (welfare and environmental sustainability). GNP/GDP measures production in an economy whose structures are vastly different from the one we live in today. In 1941 Kuznets stated: '*It may well be that social standards will be so modified as to reduce our current estimates to absurdity. If so, all we can claim is that they have historical validity.*'[363] If the economy has indeed made the transition from an 'industrial economy' to a 'post-industrial economy' these words may be more true than ever.

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[362] Coyle, GDP, 130-136.

[363] National income and its composition 1919-1938 (1941) 20.

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